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Status of Self-Transcendence and Quality of Life in Patients Receiving Hemodialysis

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ABSTRACT

Objective: The aim of this study is to evaluate the status of self-transcendence and quality of life in patients receiving hemodialysis therapy. **Materials and Methods:** It is a descriptive and cross-sectional study. The universe of the study consisted of all patients (n=380) who received hemodialysis treatment in dialysis centers located in the city center of Zonguldak. Personal Information Form, Reed's self-transcendence scale, and EUROHIS (WHOQOL-8.Tr) Scale were used in data collection. **Results:** There was a highly positive relationship between the self-transcendence scale and the EUROHIS (WHOQOL-8.Tr) (p=0.000, r=0.605). Also, it was found in this study that age and level of income of hemodialysis patients affected the quality of life and the self-transcendence. **Conclusion:** As a result, it was determined that the patients aged 60-74 years and those with low-income levels in hemodialysis patients had a poor self-transcendence status, while patients aged 75 and over, with low income and unemployed had poor quality of life. There is a need for experimental and randomized controlled studies to be carried out in larger samples to increase the quality of life and self-transcendence.
Keywords: Quality of Life, Hemodialysis, Nursing Theory, Spiritual Healing.

Hemodiyaliz Tedavisi Alan Hastalarda Öz-Aşkınlık Durumu ve Yaşam Kalitesi

ÖZ

Amaç: Bu çalışmanın amacı, hemodiyaliz tedavisi alan hastalarda kendini aşma durumunu ve yaşam kalitesinin değerlendirilmesidir. **Gereç ve Yöntem:** Tanımlayıcı ve kesitsel bir çalışmadır. Araştırmanın evrenini Zonguldak il merkezinde bulunan diyaliz merkezlerinde hemodiyaliz tedavisi gören tüm hastalar (n=380) oluşturmuştur. Araştırma verilerinin toplanmasında "Kişisel Bilgi Formu", "Reed'in öz-aşkınlık ölçeği" ve ''EUROHIS (WHOQOL-8.Tr)'' ölçeği kullanılmıştır. **Bulgular:** Reed'in öz-aşkınlık ölçeği ile EUROHIS (WHOQOL-8.Tr) ölçeği arasında güçlü pozitif bir ilişki saptandı (p=0.000, r=0.605). Ayrıca, bu çalışmada hemodiyaliz hastalarının yaşı ve gelir düzeyinin yaşam kalitesini ve kendini aşmayı etkilediği bulundu. **Sonuç:** Sonuç olarak hemodializ hastalarında 60-74 yaş grubu ve gelir düzeyi düşük olan hastaların öz-aşkınlık durumunun kötü olduğu, 75 yaş ve üstü düşük gelir düzeyine sahip ve çalışmayan hastaların ise yaşam kalitelerinin kötü olduğu saptanmıştır. Yaşam kalitesini ve kendini aşmayı artırmak için daha büyük örneklemlerde yapılacak deneysel ve randomize kontrollü çalışmalara ihtiyaç vardır
Anahtar Kelimeler: Yaşam Kalitesi, Hemodializ, Hemşirelik Kuramı, Spiritüel İyileşme

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INTRODUCTION

End-stage renal failure (ESRD) is a progressive and irreversible disease leading to a series of biochemical, clinical, and metabolic disorders that are directly or indirectly associated with a high rate of morbidity, mortality, and hospitalization (Oliveira et al., 2016). In end-stage renal failure, patients need renal replacement therapies such as hemodialysis (HD), peritoneal dialysis (PD), and renal transplantation. Today, more than 2 million people worldwide lead their lives with dialysis treatments or transplantations due to ESRD (Ok & Işıl, 2019). HD treatment is still one of the most widely used renal replacement therapy methods that improve quality of life and prolong life in patients with ESRD (Durmaz Akyol, 2016). Although HD is a treatment method that increases life expectancy of patients (Tayyebi et al., 2010), it adversely affects patients physically, socially, economically, and psychologically (Alemdar & Pakyüz, 2015). These negative effects of HD also significantly affect the patient's quality of life (QOL) (Alemdar & Pakyüz, 2015). As HD treatment is a life-long treatment method and socioeconomic and disease factors affect QOL in this process, the need for support arises in patients (Tayyebi et al., 2010). The aim of supporting patients is to make them improve transcendence, gain new perspectives in life and develop a search for meaning and welfare (Haugan et al., 2020). Self-transcendence is a nursing theory developed by Pamela Reed, which allows patients to find spiritual meanings in life by accepting death as a part of life, enhances health perception, and helps to overcome disease-related challenges and make the person feel better (Milani et al., 2017). As it is known, while holistic nursing care focuses on healing the whole person through the handling of the body, mind, spirit, emotions and environment as a whole, the concept of self-transcendence draws attention as a central aspect of the spirituality of people. In this way, nurses play an important role in their patients' self-transcendence and reaching a higher level of health (Reed, 2009).

When the literature is examined, the status of self-transcendence has mostly been studied in the elderly population (Haugan et al., 2016; McCarthy et al., 2015a; McCarthy et al., 2015b; Thomas & Dunn, 2014). Although there are a large number of studies examining the quality of life in patients receiving HD therapy, only two studies evaluating self-transcendence have been encountered (AliPour Ganjineh Ketab et al., 2018; Khahi et al., 2017). Therefore, this study was made descriptively and cross-sectionally to evaluate the relationship between self-transcendence and QOL in patients receiving HD therapy.

MATERIALS AND METHODS

Design, setting, and sample

The universe of the study consisted of all patients (n=380) who receives HD treatment in two dialysis centers located in the city center of Zonguldak between May 3, 2019 and August 28, 2019. In the study, no sample selection was made from the universe, and all of the patients who received hemodialysis treatment between the dates of the study were included in the study. The sample of the study was comprised of all patients (n=230) aged 18 and over who did not have any psychiatric illness, any problems of vision, hearing, and perception, to have Turkish reading and writing skills and agreed to participate in the study.

Data collection

"Personal Information Form", "Reed's self-transcendence scale" and "EUROHIS (WHOQOL-8.Tr)" was used in data collection. In cases that were not understood on the forms by the patients, necessary explanations were made and a face-to-face interview method was used. The filling process took approximately 20-25 minutes.

***Personal Information Form*:** In this form consisting of 9 questions, patients were asked questions about socio-demographic features such as age, gender, level of education, marital status, level of income, occupation, employment status, and weekly dialysis status and how many years they had received dialysis treatment.

Reed's Self-Transcendence Scale: The scale was developed by Reed (1991) to assess self-transcendence. The scale was adapted into Turkish by Sarıçam (2015). The scale is a one-dimensional, four-point Likert scale (''none (1 point)'', ''Very little (2 points)'', ''Quite (3 points)'' and ''Very (4 points)'') and consists of 15 items (Reed, 1991; Sariçam, 2015). The lowest score to be taken from the scale was 15, the highest was 60, and as the score increased (1-4 points for each item), self-transcendence increased. As a result of the explanatory factor analysis that was applied for the construct validity of the scale, the items were collected in one dimension in accordance with the original form. According to the data obtained in the construct validity study of the scale, valid fit index values were obtained in confirmatory factor analysis ($\chi 2$=301.39, sd=86, RMSEA=0.062, CFI=0.97, RFI=0.95, GFI=0.94, NFI=0.96, SRMR=0.042). The factor loads of the scale are between 0.35 and 0.57. Cronbach's alpha was found to be 0.87 in the study that Sariçam (2015) performed and assessed the validity and reliability. In our study, Cronbach's alpha coefficient of the self-transcendence scale was found to be 0.90.

EUROHIS (WHOQOL-8.Tr): The EUROHIS-QOL.8 (WHOQOL-8) scale is the general-purpose index Quality of Life in Health scale, produced by selecting specific questions from the WHOQOL-Bref scale. The scale was adapted into Turkish by Eser et al. (2010). It consists of 8 questions, two of which are general questions. Response options are in 5-point Likert type. The extreme words of the answer options are "none" and "completely". As the score increases, the quality of life improves. The scale can be scored by taking the average score of the questions, calculating, or using alternative methods such as converting the total to 100 points. The first question of the scale is the general perception of quality of life, and the second question is general perception of health. Therefore, in the Turkish version, none of these two questions are asked to be unanswered. If one of these two questions is left unanswered, the

calculation of the score is not recommended. However, only one of the remaining 6 questions can be allowed to be left unanswered. The calculation is made by putting the average score of the other questions in the place of the unanswered question. These 6 questions are: energy (s3), being satisfied with daily life skills (s4), self-satisfaction (s5), being satisfied with the relationship with other people (s6), money (s7) and conditions of the house where they live (s8). The scale questions of the EUROHIS (WHOQOL-8.Tr) consisting of 8 questions were scored in a way that the lowest score to be 0 and the highest score to be 32 (Eser et al., 2010). Cronbach's alpha was found to be 0.85 in the study by Eser et al., (2010). In our study, the Cronbach alpha coefficient of the EUROHIS (WHOQOL-8.Tr) scale was found to be 0.76.

Statistical analysis

The data were analyzed using the SPSS version 24.0 (IBM SPSS for Windows, ver.24). In calculating sample width, power (test power) for each variable was determined by taking at least 80% and type 1 error of 5%. Skewness-Kurtosis values and the Kolmogorov-Smirnov test were used to evaluate whether the data were distributed normally. Parametric tests were applied in the study because the variables were normally distributed. The descriptive statistics of continuous variables in the study were shown with mean, standard deviation, while descriptive statistics of categorical variables were shown by frequency and percentage. To determine the differences between the groups, the independent samples t-test, one-way ANOVA test, and the Multiple linear regression analysis were used. Duncan test was used to identify different groups following analysis of variance. Pearson correlation analysis was used to determine the effects of independent variables. The statistical significance level (α) was taken as 5% in the calculations. $p<0.05$ was accepted as statistically significant.

Ethical considerations

Before starting the study, the scale permission was obtained electronically in order to be able to apply Reed's Self-Transcendence scale and EUROHIS (WHOQOL-8.Tr). Ethics committee approval was obtained from the Zonguldak Bülent Ecevit University Clinical Research Ethics Committee (Date: 24.01.2019, Number: 33479383/05). Also, written permission was obtained from the Provincial Health Directorate (Date 29/04/2019 Number:15291). The study was conducted on the basis of voluntary participation and ethical principles were adhered to during the study. Patients who were participated in the study explained the purpose of the research and data is specified to be used only for scientific purposes. Also their verbal informed consent was obtained.

RESULTS

While 60.4% were between the ages of 60-74, 80% were married. 56.5% of the patients participating in the study were male and 75.7% were primary school graduates. 43.9% were retired and 81.7% were found to have a moderate level of income. The majority of the patients (92.6%) stated that they received dialysis three days a week and (62.2%) received dialysis treatment between 1-4 years.

Patients' mean scores of the Self-Transcendence and EUROHIS (WHOQOL-8.Tr) scales were given in Table 1. According to the table, mean scores of the Self-Transcendence and EUROHIS (WHOQOL-8.Tr) Scales were 45.4±7.3 and 25.5±4.5, respectively. There was a highly positive relationship between the two scales (p, 0.000, r=0.605).

Table 1. Mean scores of quality of life and self-transcendence scale of hemodialysis patients and correlation coefficients of the scales (n=230).

Scales	Mean±SD	r	p*
1. Self-Transcendence Scale	45.4±7.30	0.605	p<0.001
2. EUROHIS (WHOQOL-8.Tr) Scale	25.0±4.50		

SD: Standard deviation, *Pearson correlation analysis.

The distribution of mean scores of Self-transcendence and EUROHIS (WHOQOL-8.Tr) Scale according to the socio-demographic and some medical features of the patients were given in Table 2. According to Table 2, a statistically significant difference was found between age, level of education, level of income and duration of dialysis and total score of the self-transcendence scale ($p<0.05$). Self-transcendence mean scores of the patients who were between the age range of 39-59 (47.61±6.95), had a high level of income (49.55±6.81), were primary school graduates (46.04±7.60) and received dialysis treatment more than 7 years (47.60±6.35) were found to be statistically and significantly higher. Gender, marital status, occupation, employment status and frequency of dialysis did not affect the Self-transcendence Scale score ($p>0.05$). Additionally, according to Table 2, age, education, occupation, level of income and employment status affected the quality of life ($p<0.05$) and the EUROHIS (WHOQOL-8.Tr) mean scores of the patients who were at the age group of 18-38 (26.66±4.00), primary school graduates (25.95±4.50), workers (27.59± 4.59), had a high level of income (30.48±3.99) and employed (29.83±3.18) were found to be statistically and significantly higher. Gender, marital status, frequency and duration of dialysis did not affect the EUROHIS (WHOQOL-8.Tr) score ($p>0.05$) (Table 2).

Table 2. Distribution of self-transcendence and quality of life scale mean scores according to the socio demographic characteristics of the patients.

Socio-demographic and some characteristics		Self-Transcendence	EUROHIS (WHOQOL-8.Tr)
		Mean±SD	Mean±SD
Age (years)	18-38	45.88±5.34[ab]	26.66±4.00[a]
	39-59	47.61±6.95[a]	26.52±4.50[a]
	60-74	44.56±7.53[b]	25.26±4.49[ab]
	75 and over	45.49±7.68[b]	22.78±4.45[b]
	p / test value	**0.030 F=2.85[X]**	**0.023 F=3.23[X]**
Gender	Female	44.74±6.56	44.74±6.56
	Male	26.25±4.73	46.06±7.90
	p / test value	0.176 t=-1.35	0.176 t=-1.359 [Ŧ]
Level of education	Illiterate	43.76 ± 6.36	24.26±4.45
	Primary School	46.04 ± 7.60	25.95±4.50
	p / test value	**0.028 t=-2.22 [Ŧ]**	**0.010 t=-2.44 [Ŧ]**
Marital status	Married	45.74±7.51	25.74±4.56
	Single widow	44.51±6.77	24.76±4.83
	p / test value	0.307 t=1.02	0.169 t=1.31 [Ŧ]
Occupation	Worker	47.09±7.23	27.59±4.59[a]
	Civil Servant	46.28±3.40	27.28±2.92[ab]
	Housewife	44.35±6.46	24.13±4.19[ab]
	Self-employed	44.90±8.50	26.30±3.33 [ab]
	Retired	46.16±8.16	26.15±4.72 [ab]
	p / test value	0.518 F=1.25	**0.002 F=4.30[X]**
Level of income	High	49.55±6.81[a]	30.48±3.99[a]
	Medium	45.14±7.39[b]	25.11±4.10[b]
	Poor	42.53±5.43[b]	22.00±4.50[c]
	p / test value	**0.004 F=5.75**	**p<0.001 F=25.99[X]**
Frequency of receiving dialysis	One day in a week	48.66±0.57	28.00±1.73
	Two days in a week	41.20±7.29	23.40±4.88
	Three days in a week	45.68±7.42	25.68±4.54
	Four days in a week	43.50±2.51	21.75±0.95
	p / test value	0.223 F=0.420	0.107 F=2.057 [X]
Duration of dialysis treatment	1-4 years	45.72±6.98	25.42±4.63
	5-7 years	42.65±8.38	24.58±4.99
	8 years and more	47.60±6.35	26.52±4.15
	p / test value	**0.009 F=3.42[X]**	0.259 F=1.35 [X]
Employment status	**Employed**	49.00±9.12	29.83±3.18
	Unemployed	43.39±7.31	25.42±4.52
	p / test value	0.238 t=1.18	**0.01 t=2.36 [Ŧ]**

Ŧ: Independent Samples-t test, F [X] **:**One-Way Anova test, a,b: Shows the difference between groups (Duncan post-hoc test)
SD: Standard deviation.

When multiple regression analysis was done, it was found that age and level of income had a determining role on self-transcendence at a rate of 0.083% (R2=0.08, p=0.001) (Table 3).

Table 3. Examining the scores of self-transcendence scale by regression analysis according to socio-demographic and some characteristics (n=230).

Self-Transcendence Scale				
	β¹	**β ²**	**t**	**p**
Constant	56.667		12.682	0.000
Age (years)	-1.922	-0.168	-2.457	**0.015**
Level of education (primary school, illiterate)	1.086	0.063	0.939	0.349
Level of income (high, medium, poor)	-3.914	-0.226	-3.473	**0.001**
Duration of dialysis (years)	-0.138	-0.022	-0.326	0.745
R [a]=0.288 R^2=0.083 F=5.069 p=0.001				

Multiple lineer regression analysis, [a]= Regression coefficient β¹: Nonstandardized beta; β²: Standardized beta.

According to the EUROHIS (WHOQOL-8.Tr) scale, a statistically significant difference was found between age, level of education, occupation, level of income and employment status (p<0.05). When multiple regression analysis was done, age, level of income and employment status had determining roles on quality of life at a rate of 0.268% (R2=0.26, p=0.000). According to the EUROHIS (WHOQOL-8.Tr) scale, no statistically significant difference was found between gender, marital status, frequency and duration of receiving dialysis (p>0.05) (Table 4).

Table 4. Examining the scores of EUROHIS-QOL scale by regression analysis according to socio-demographic and some characteristics (n=230).

EUROHIS (WHOQOL-8.Tr)				
	β¹	**β ²**	**t**	**p**
Constant	48.823		-11.790	0.000
Age (years)	-1.388	-0.197	-3.236	**0.001**
Level of education	0.335	0.032	0.523	0.602
Level of income	-4.974	-0.465	-7.889	**0.000**
Employment status	-5.396	-0.190	-3.184	**0.002**
Occupation (housewife, civil servant, worker, retired)	0.054	0.016	0.266	0.791
R [a]=0.518 R^2=0.268 F=16.398 p=0.000				

Multiple linear regression analysis, [a]= Regression coefficient β¹: nonstandardized beta; β²: Standardized beta

DISCUSSION

In this study, patients receiving HD therapy mean score of Self-Transcendence Scale was 45.4±7.3 and it was found to be relevant to age, level of education, level of income and duration of dialysis. In the regression analysis carried out, it was determined that age and level of income were determinant on self-transcendence. Self-transcendence plays a significant role in individuals' accepting and overcoming the difficulties arising due to the disease and finding spiritual meanings in life. It was also stated that it positively affected self-care behavior and QOL in individuals with chronic diseases (Milani et al., 2017). In our study, the mean score of the self-transcendence scale was found to be 45.4±7.3, and similar to our study; it was found as 43.18±5.3, in the study examining the effect of a peer support group on self-transcendence in patients receiving HD therapy (Milani et al., 2017). Self-transcendence mean scores in other chronic diseases such as multiple sclerosis and hypertension, in which prevalence was examined, were similar to our study (Milani et al., 2015; Thomas & Dunn, 2014). Feeling himself/herself better, accepting death as a part of life and discovering life with its spiritual aspects help him/her to cope with long-term illnesses and disabilities.

In our study, the self-transcendence mean scores of 39-59 age group, primary school graduates, those with high level of income and receiving dialysis for 8 years or more were found higher. In the study, in which the effect of peer support group on self-transcendence was examined in patients receiving HD treatment, self-transcendence mean scores of primary school graduates and those with high level of income were higher (Milani et al.,2017). These results are in line with our study. In addition, the

study evaluating the effect of peer support group on self-transcendence in patients with multiple sclerosis (MS), another disease group, also showed similar results with our study. The mean scores of the patient's majority of whom were between the age group of 39-51, with a high level of income and diagnosed with MS for an average of 14 years were found as 47.09 ± 8.06 (Milani et al., 2015; Milani et al., 2017). In our study, the self-transcendence score of patients with dialysis duration of 8 years or more was also found high. The reason for this can be explained by their adaptation to the disease and HD treatment. The concept of self-transcendence also involves the manners of adapting well to physical changes and the current life situation. Therefore, in patients in our sample group receiving dialysis for 8 years or more, both their adaptation to disease and self-transcendence may have been positively affected.

In our study, a highly positive correlation was found between the self-transcendence scale and the EUROHIS (WHOQOL-8.Tr) scale (p, 0.000, r=0.605). In the study conducted in patients receiving HD therapy by Khani et al. (2017), a rise in patients' physical functional status and a direct and significant relationship between them were found in the patients whose mean scores of self-transcendence were high (Khahi et al., 2017). Similarly, in the study of self-transcendence in elderly adults with hypertension, it was found that patients with high self-transcendence mean scores had higher positive health behaviors (Thomas & Dunn, 2014). These results also support our study. Self-transcendence, the ability to expand one's relationship with others and the environment, is identified as one of the developmental resources that promote well-being in later adulthood during increased vulnerability. Self-transcendence provides hope and meaning which helps a person to adapt and cope with chronic illness (Haugan et al., 2016). This increases the quality of life in individuals with chronic diseases. As a matter of fact, it has been reported in many studies that self-transcendence increases the quality of life by decreasing anxiety and hopelessness in individuals and increasing adaptation to the disease (Haugan et al., 2016; Kim, 2015). Therefore, in the patients receiving HD therapy, ensuring the nurse-patient interaction and make an educational intervention to increase their self-transcendence can assist them to cope with their disease and increase QOL in older adults.

In this study, the mean score of EUROHIS (WHOQOL-8.Tr) Scale of patients receiving HD therapy was 25.5±4.5, and the QOL of the patients was found to be high. When the literature was analyzed, it was seen that the QOL in patients receiving HD therapy had different results. While QOL was found to be low in some studies (Abdelghany & Elgoharyve Nienaa, 2016; Mazandarani et al., 2018, Seraji et al., 2017; Zareban et al., 2017), it was found to be high in other studies in parallel with our study. In a study involving 53 patients receiving HD therapy in Iran, QOL of patients with HD were found to be high in a similar way to this study (Matlabi & Ahmadzadeh, 2016). The reason for the increase in QOL may be both due to the technological developments in health services, decrease in hypotension, cramps, dizziness and nausea during dialysis sessions, and the positive change in patients' QOL perceptions thanks to increasing the importance of patient education given by nurses in recent years. When the socio-demographic characteristics were analyzed according to the EUROHIS (WHOQOL-8.Tr) scale, the QOL of the patients who were in the age group of 75 and over, illiterate, housewives, had a low income and unemployed were found to be statistically and significantly low. When multiple regression analysis was performed, it was found that especially age, level of income and employment status had determinant roles on the QOL at a rate of 0.268% (R2=0.268, p=0.000). When the studies were examined, it was reported that there was a negative relationship between age and QOL similarly to the results of this study and QOL decreased as age increased (Abdelghany et al., 2016; Bayoumi & Alwakeel, 2017; Pehlivan et al., 2016; Seraji et al., 2017, Toulabi et al., 2016; Zyoud et al., 2016). Considering that physical and mental deficiencies increase and social life is limited with aging, it has been an expected result that the QOL will decrease with increasing age.

In this study, education is another significant factor affecting QOL in patients receiving HD therapy. In the study, it was determined that the mean score of primary school graduates was higher than the illiterate patients. When the conducted studies were examined, it was observed that there was a positive meaningful relationship between level of education and QOL in line with our study results, and the QOL increased significantly with increasing level of education (Abdelghany et al., 2016; Alemdar & Pakyüz, 2015; Bayoumi & Alwakeel, 2017; Seraji et al., 2017; Vasilopoulou et al., 2016; Zyoud et al., 2016). It has been thought that as the level of education of patients receiving HD therapy increases, their perceptions of health will also increase and the QOL has increased since they can cope better with the current disease and the stressors brought by the disease.

It was also determined that patients receiving HD therapy that had high level of incomes and were employed had a better QOL. In multiple regression analysis, patients' level of income was found to be a determining factor on QOL. In many studies that was conducted and supported the results of our study, it was found that level of income affected the QOL of the patients and the QOL increased as the level of income improved (Abdelghany et al., 2016; Zyoud et al., 2016). Economic comfort makes it easier for the patients to access health services and to continue treatment. For that reason, QOL is expected to increase as the indicators related to level of income become positive.

In this study, it was found that while the mean scores of the employees who worked as workers or civil servants were high, the mean scores of the unemployed and housewives were low. In other studies, supporting our study results, unemployment status was found to be associated with low QOL (Seraji et al., 2017; Zyoud et al., 2016).

It has been considered that the reason for the lower QOL in the unemployed group may be due to the financial and psychological problems they have experienced because of the financial impossibility.

It was found in this study that gender, marital status, duration and frequency of dialysis were not effective on QOL. For instance, while gender was stated not to affect QOL in some studies (Alemdar & Pakyüz, 2015; Durmaz Akyol, 2016; Toulabi et al., 2016; Vasilopoulou et al., 2016), some study results were not compatible with ours (Seraji et al., 2017; Zyoud et al., 2016). This difference may arise from the sample group and regional differences.

CONCLUSION

In conclusion, it was found in this study that age, level of income, and employment status of patients receiving HD therapy affected the QOL, and age and level of income also affected the self-transcendence. Patients receiving HD therapy at the young age group (18-39) and with high level of income have a better QOL and self-transcendence. Therefore, there is a need for experimental and randomized controlled studies to be carried out in larger samples to increase the QOL and self-transcendence, especially in individuals over 60 years of age who have a low level of income and constitute the majority.

Limitations of Study

This study was conducted in Zonguldak province and cannot be generalized to other provinces and regions. Self-transcendence and QOL of patients who receive HD treatment regularly in clinics by nurses should be evaluated. In addition, Awareness of nurses should be increased by providing training about Self-transcendence. Nurses should encourage patients by forming support groups so that they can develop their self-transcendence.

Conflicts of Interest

The authors declare no conflict of interest.

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Author Contributions

Plan, design: CE, MS; **Materials and Methods:** CE, MS; **Data analysis and interpretation:** ZE; **Writing and corrections:** CE, ZE, MS

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Comparison of Biological Factors and Safety Culture Perception Level of Hospital Cleaning Staff

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ABSTRACT

Objective: The aim of this research is to identify the degree to which cleaning staff in public hospitals have adopted work health and safety activities and safety culture perceptions and converted these to behavior. **Materials and Methods:** The population for the research comprised 565 cleaning staff employed in a total of 12 secondary health institutions and tertiary health institutions linked to the union of public hospitals located in Giresun provincial center and counties. Data in the study were collected with a survey form including questions about sociodemographic features, working conditions, and knowledge, attitudes and behavior about biological factors and the Safety Culture Scale. **Results:** According to participant knowledge about biological factors causing infectious disease, only the fatalism subscale among safety culture perception levels was significant ($p<0.05$). For the relationship between participant behavior related to biological factors and safety culture, all dimensions of safety culture and the safety culture general variable were identified to significantly differ ($p<0.05$). **Conclusion:** To ensure safety in working environments, management attitude and behavior was determined to affect employees. Additionally, a statistically significant correlation was identified between occupational practices involving risky behavior and the fatalism variable. It appears the fatalistic approach may increase the risk of work accidents.
Keywords: Occupational Health, Safety, Culture.

Hastane Temizlik Personelinin Biyolojik Faktörler ile Güvenlik Kültürü Algı Düzeyinin Karşılaştırılması

ÖZ

Amaç: Bu araştırmanın amacı iş sağlığı ve güvenliği faaliyetleri ile güvenlik kültürü algısının kamu hastanelerinde çalışanlar temizlik personeli açısından ne ölçüde benimsendiği ve davranışa dönüştürüldüğünü belirlemektir. **Gereç ve Yöntem:** Araştırmanın evrenini Giresun ili merkez ve ilçelerinde bulunan kamu hastaneler birliğine bağlı toplam 12 adet İkinci Basamak Sağlık Kurumları ve Üçüncü Basamak Sağlık Kurumlarında çalışmakta olan 565 temizlik personeli oluşturmaktadır. Çalışmada veriler sosyodemografik özellikler ve çalışma koşullarına yönelik sorular ile biyolojik etkenlere yönelik bilgi, tutum ve davranışları içeren soruların yer aldığı anket formu ile Güvenlik Kültürü Ölçeği kullanılarak toplanmıştır. **Bulgular:** Katılımcıların bulaşıcı hastalığa neden olan biyolojik etkenler hakkındaki bilgi durumlarına göre güvenlik kültürü algı düzeyleri arasında sadece Kadercilik alt boyutunun anlamlı olduğu bulunmuştur ($p<0.05$). Biyolojik etkenlere yönelik katılımcılar tarafından gerçekleştirilen davranışlar ile güvenlik kültürü arasındaki ilişki ise güvenlik kültürü tüm boyutları ve Güvenlik Kültürü Genel değişkeninde anlamlı olarak farklılaştığı tespit edilmiştir ($p<0.05$). **Sonuç:** Çalışma ortamlarında güvenliğin sağlanmasında yönetimin tutum ve davranışının çalışanlar üzerinde etkili olduğu belirlenmiştir. Ayrıca riskli davranışlar içeren mesleki uygulamalar ile kadercilik değişkeni arasında istatistiksel olarak anlamlı ilişki tespit edilmiş, kaderci yaklaşımın iş kazası riskini artırabileceği görülmüştür.
Anahtar Kelimeler: İş Sağlığı, Güvenlik, Kültür.

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INTRODUCTION

The work health and safety (WHS) concept, aiming to improve working conditions for laborers, began with industrialization in the 'Industrial Revolution.' Over time the WHS concept developed in line with a multidisciplinary perspective to become the independent branch of science it is today, targeting safer and healthier working environments for employees in light of scientific data (Çavuş and Keskin, 2020).

The most important ratios showing the presence of a safe environment in the workplace are the 'accident frequency' and 'accident severity' rates determined by the ILO (Nişancı and Demirören, 2020). Currently, behavior that is routine in the work environment and is not possible to change in a short duration is shown to be the main cause of work accidents (Çögenli and Özer, 2017). The most important reason for this is the lack of an active positive safety culture in workplaces at present (Nişancı and Demirören, 2020).

The safety culture concept is stated to be the system of values reflecting the attitudes and beliefs of employees while also summarizing the beliefs and values of employees in the workplace (Correll and Andrewartha, 2000; Tutar et al., 2019). Safety culture is a subcomponent of institutional culture, defined by the personal, occupational and institutional features related to safety (Cooper, 2002). At the same time, safety culture ensures definition of attitude, values, perception and behavior of people and groups when determining the form of management related to WHS (Uçkun et al., 2013). Thus, it ensures the determination of the common beliefs and ideas of the employees about the dangers and possible risks that may cause all kinds of accidents and injuries (Karaman and Eravcı, 2021).

The variety of institutions in the health sector are workplaces offering health services (WHO, 2021). Based on national census counts, statistical sources and current analyses, the World Health Organization estimates there are a total of 59.8 million health employees around the world (ICOH, 2021). Hospitals are one of the work environments providing health services and involve significant risks in the work environment in terms of WHS. According to the National Institute for Occupational Safety and Health (NIOSH), hospitals have 29 types of physical, 25 types of chemical, 24 types of biological, 6 types of ergonomic and 10 types of psychosocial hazard and risk factors (Yıldız, 2020). For health employees, the most important risk factor encountered in the daily work environment is biological factors (Bilir, 2016; Kurt et al., 2015).

The aim of this study is to the question the interaction of behavioral approaches to work safety with safety culture by comparing the knowledge, attitudes and behavior of hospital cleaning employees about working conditions and biological factors with the safety culture of employees.

The hypotheses of the research are as follows;

H_1: Participant safety culture levels (on the basis of subdimensions) will differ according to knowledge about biological factors causing infectious diseases.

H_2: Participant safety culture levels (on the basis of subdimensions) will differ according to statements about whether medical waste bags should be emptied into a new bag if leaking.

H_3: Participant safety culture levels (on the basis of subdimensions) will differ according to knowledge about whether medical waste bags should be squeezed to take up less space.

H_4: Participant safety culture levels (on the basis of subdimensions) will differ according to knowledge about identifying the hospital respiratory isolation precaution figure.

H_5: Participant safety culture levels (on the basis of subdimensions) will differ according to knowledge about identifying the hospital droplet isolation precaution figure.

H_6: Participant safety culture level (on the basis of subdimensions) will differ according to perceptions of transmitting infectious disease at work.

H_7: Participant safety culture levels (on the basis of subdimensions) will differ according to knowledge of how infectious diseases could be transmitted to them.

H_8: Participant safety culture levels (on the basis of subdimensions) will differ according to thoughts about whether personal protective equipment protects them sufficiently.

H_9: Participant safety culture levels (on the basis of subdimensions) will differ according thoughts about using personal protective equipment appropriate for purpose.

H_{10}: Participant safety culture levels (on the basis of subdimensions) will differ according to status related to injury by sharps (cutting tools) in the workplace.

H_{11}: Participant safety culture levels (on the basis of subdimensions) will differ according to status of use of personal protective equipment during injury.

H_{12}: Participant safety culture levels (on the basis of subdimensions) will differ according to status of notifying the Hospital Infection Control Unit of injury.

MATERIALS AND METHODS

The research was completed in health institutions including cleaning personnel who are at high risk in terms of exposure to medical wastes.

Research type, location and time

This research, performed with descriptive pattern, was completed from 01 June to 30 August 2021 in a total of 12 pieces secondary health institutions and tertiary health institutions in the public hospital union located in Giresun provincial center and counties.

Population and sample

The population for the study comprised cleaning staff. In the study, completed in a total of 12 health institutions included within the scope of the research, sample selection was not performed. A count was

performed including all cleaning staff in the sample employed in the institutions during the determined dates and voluntarily accepting participation in the research (N=565). In line with feedback and fully completed forms during the study dates, our study included 519 people out of 565 and 91.85% of the targeted population was reached.

Data collection tools and procedure

Data in the research were collected using a survey form prepared by the researcher and the Safety Culture Scale. The first section of the survey included questions about sociodemographic features and study conditions, while the second section included questions about knowledge, attitude and behavior about biological factors. The other data collection tool used in the research was the Safety Culture Scale comprising eight subscales to assess work safety created by Dursun (2011). The scale has 5-point Likert type and comprises 41 items (Dursun, 2011). Büyüköztürk (2010) reported that by examining factor loads, variables can be collected in factors and may be renamed linked to the conceptual basis according to the researcher's opinion. Within this scope, the 1st factor comprised items related to management commitment, safety priorities and safety communication and was called "management commitment and safety." The 2nd factor comprised items about safety education, safety awareness and competence, and employee engagement and was called "safety training, safety awareness and competence and employee engagement." The 3rd factor comprised items about fatalism and was called "fatalism." In line with this, the Cronbach alpha coefficients were 0.96 for the first dimension, 0.91 for the second dimension, 0.90 for the third dimension and 0.95 for the scale in general. For all dimensions, the reliability coefficients were greater than 0.70, so scale reliability was proven.

Data analysis

In the study, the Statistical Package for the Social Sciences (SPSS 21) program was used. The descriptive statistics are presented for the study population and factor analysis was used for subdimensions belonging to safety culture levels. An independent t-test was used to test hypotheses within the framework of knowledge, attitude and behavior about biological factors. Before the parametric analyses, the normality assumption was checked by Kolmogorov-Smirnov and other empirical and graphical methods.

Ethical considerations

The research was permitted by ethical committee decision dated 14/04/2021 and numbered 2021/03 from Gümüşhane University Scientific Research and Publication Ethics Committee. To use the scale in the research, necessary permission was obtained from the scale owner. Before beginning collection of research data, with the aim of protecting participant rights, and in line with the principle of autonomy, employees were told they could withdraw from the study and signed an 'informed consent form.'

RESULTS

The descriptive features, like age, gender and educational status, of staff assessed within the scope of the study, along with professional descriptive questions like professional seniority and weekly working hours, and findings about frequency and percentage distributions for work health and safety practices are shown in Table 1.

Table 1. Frequency distributions regarding the demographic characteristics of the participants.

Demographics		n	%
Gender(n=504)	Male	208	41.0
	Female	296	59.0
Age (n=513)	18-24	55	10.7
	25-29	71	13.7
	30-34	84	16.2
	35-39	77	14.8
	40-44	102	19.7
	45-49	83	16.2
	50-54	28	5.5
	55-59	11	2.1
	60-64	2	0.4
Educational status (n=518)	Primaryschool	124	23.9
	Middle school	101	19.5
	High school	220	42.5
	University	73	14.1
Seniority (n=516)	Less than a year	8	1.6
	Between 1-3 years	186	36.0
	Between 3-5 years	64	12.4
	Between 5-10 years	102	19.8
	For over 10 years	156	30.2
Way of working (n=516)	Day shifts	156	30.0
	Night shifts	256	49.6
	Day and night shifts	105	20.3
Weekly working hours (n=511)	Less than 45 hours	34	6.7
	Between 45-48 hours	442	86.5
	Between 49-52 hours	22	4.3
	53 hours or over	13	2.3
Occupational health training (n=511)	Yes	491	96.1
	No	20	3.9
Injuryexperience (n=511)	Yes	134	25.8
	No	377	72.6

The findings related to hypotheses H_1, H_2, H_3, H_4 and H_5 about the interaction between the safety culture of participants with knowledge about biological factors are presented in Table 2.

When Table 2 is investigated, according to participant knowledge about biological factors causing infectious diseases, safety culture perception levels were only significant for the fatalism subdimension for the H_1, (Factor 3; $t=-2.914$, $p<0.05$), H_2 (Factor 3; $t=2.207$, $p<0.05$), and H_3 (Factor 3; $t=2.500$, $p<0.05$) hypotheses. For H_4 (Factor 3; $t=2.621$, $p<0.05$, General; $t=3.112$, $p<0.05$) and H_5 (Factor 3; $t=3.232$, $p<0.05$, General; $t=3.663$, $p<0.01$), the safety culture dimensions of management commitment and safety and general safety culture variables were significant.

The interaction between safety culture and attitudes developed by participants about biological factors was tested with hypotheses H_6, H_7, H_8 and H_9. In the study, hypotheses H_6, H_7 and H_9 were rejected, while H_8 was accepted.

Apart from the fatalism dimension, for the other subdimensions and general safety culture variable, hypothesis H_8 (Factor 1; t=2.895, p<0.05, Factor 2; t=2.775, p<0.05, General; t=2.757, p<0.05) was identified to display a statistically significant difference (Table 3).

The relationship between behavior of participants about biological factors and safety culture was tested with hypotheses H_{10}, H_{11} and H_{12}. In the study, hypotheses H_{10} and H_{11} were not accepted. For the accepted hypothesis H_{12} (Factor 1; t=4.626, p<0.001, Factor 2; t=3.739, p<0.001, Factor 3; t=2.193, p<0.05, General; t=5.657, p<0.001), all dimensions of safety culture and general safety culture variables were identified to significantly differ (Table 4).

Table 2. Comparison of the knowledge level of the participants about biological factors and the level of safety culture.

Dimension	Hypothesis tests	n	x̄	SS	t	p
	H_1					
Factor 1	Informed	149	2.71	1.09	0.676	0.500
	Uninformed	256	3.02	0.93		
Factor 2	Informed	148	3.49	1.00	-1.428	0.155
	Uninformed	262	3.63	0.76		
Factor 3	Informed	149	2.71	1.09	-2.914	**0.004***
	Uninformed	256	3.02	0.93		
General	Informed	134	3.36	0.84	-0.151	0.880
	Uninformed	211	3.38	0.65		
	H_2					
Factor 1	True	149	3.38	0.90	-1.633	0.103
	Wrong	283	3.52	0.85		
Factor 2	True	161	3.65	0.83	1.032	0.303
	Wrong	300	3.57	0.83		
Factor 3	True	159	3.08	1.07	2.207	**0.028***
	Wrong	300	2.86	0.98		
General	True	130	3.40	0.74	0.156	0.876
	Wrong	260	3.39	0.73		
	H_3					
Factor 1	True	23	3.50	0.77	0.211	0.833
	Wrong	409	3.47	0.88		
Factor 2	True	25	3.62	0.87	0.213	0.831
	Wrong	435	3.59	0.84		
Factor 3	True	25	3.42	0.87	2.500	**0.013***
	Wrong	435	2.90	1.02		
General	True	21	3.50	0.70	0.765	0.445
	Wrong	368	3.38	0.74		
	H_4					
Factor 1	True	372	3.54	0.82	2.621	**0.009***
	Wrong	12	2.91	0.84		
Factor 2	True	396	3.65	0.76	0.534	0.601
	Wrong	16	3.49	1.15		
Factor 3	True	396	2.90	0.99	0.263	0.793
	Wrong	16	2.83	1.13		
General	True	335	3.43	0.68	3.112	**0.002***
	Wrong	10	2.75	0.78		

* p<0.05, ** p<0.001

Table 2 (Continue) Comparison of the knowledge level of the participants about biological factors and the level of safety culture.

Dimension	Hypothesis tests	n	x̄	SS	t	p
	H_5					
Factor 1	True	365	3.55	0.82		
	Wrong	17	2.89	0.77	3.232	**0.001***
Factor 2	True	386	3.66	0.76		
	Wrong	22	3.34	1.00	1.468	0.156
Factor 3	True	385	2.91	1.00		
	Wrong	24	2.85	0.97	0.247	0.805
General	True	328	3.44	0.68		
	Wrong	16	2.81	0.70	3.663	**0.000****

* p<0.05, ** p<0.001

Table 3. Comparison of the participants' attitudes towards biological factors and the level of safety culture.

Dimension	Hypothesis tests	n	x̄	SS	t	p
	H_6					
Factor 1	Yes	383	3.44	0.88		
	No	29	3.57	0.87	-0.716	0.475
Factor 2	Yes	401	3.56	0.85		
	No	33	3.79	0.65	-1.483	0.139
Factor 3	Yes	398	2.89	1.02		
	No	37	2.88	0.91	0.074	0.941
General	Yes	339	3.35	0.75		
	No	30	3.47	0.56	-1.073	0.290
	H_7					
Factor 1	Yes	294	3.46	0.88		
	No	105	3.42	0.89	0.468	0.640
Factor 2	Yes	308	3.58	0.84		
	No	114	3.59	0.91	-0.087	0.930
Factor 3	Yes	304	2.86	1.00		
	No	119	3.05	1.05	-1.766	0.078
General	Yes	262	3.36	0.73		
	No	94	3.38	0.78	-0.183	0.855
	H_8					
Factor 1	Yes	361	3.52	0.86		
	No	66	3.19	0.88	2.895	**0.004***
Factor 2	Yes	381	3.65	0.80		
	No	69	3.30	0.97	2.775	**0.007***
Factor 3	Yes	383	2.94	1.01		
	No	68	2.78	1.09	1.143	0.254
General	Yes	326	3.44	0.70		
	No	58	3.11	0.85	2.757	**0.007***
	H_9					
Factor 1	Yes	405	3.46	0.86		
	No	19	3.65	0.80	-0.903	0.367
Factor 2	Yes	429	3.60	0.83		
	No	19	3.54	0.92	0.313	0.755
Factor 3	Yes	429	2.91	1.02		
	No	20	3.17	1.14	-1.094	0.274
General	Yes	364	3.38	0.73		
	No	18	3.59	0.69	-1.215	0.225

* p<0.05

Table 4. Comparison of the participants' behaviors towards biological factors and the level of safety culture.

Dimension	Hypothesis tests	n	x̄	SS	t	p
	H_{10}					
Factor 1	Yes	112	3.43	0.84	-0.521	0.603
	No	324	3.48	0.89		
Factor 2	Yes	125	3.53	0.82	-1.151	0.250
	No	337	3.63	0.84		
Factor 3	Yes	119	2.97	1.00	0.472	0.637
	No	344	2.91	1.03		
General	Yes	103	3.35	0.73	-0.524	0.601
	No	289	3.39	0.77		
	H_{11}					
Factor 1	Yes	92	3.41	0.84	-0.334	0.739
	No	12	3.50	0.94		
Factor 2	Yes	103	3.51	0.82	0.091	0.928
	No	13	3.48	1.07		
Factor 3	Yes	101	2.95	0.95	-0.156	0.876
	No	11	3.00	1.35		
General	Yes	87	3.33	0.70	-0.228	0.820
	No	10	3.39	1.03		
	H_{12}					
Factor 1	Yes	73	3.66	0.76	4.626	**0.000****
	No	24	2.81	0.83		
Factor 2	Yes	79	3.71	0.77	3.739	**0.000****
	No	28	3.05	0.86		
Factor 3	Yes	76	3.07	0.95	2.193	**0.031***
	No	28	2.60	1.06		
General	Yes	67	3.57	0.62	5.657	**0.000****
	No	23	2.70	0.69		

* p< 0.05, ** p< 0.001

DISCUSSION

The relationship between safety culture perception levels and knowledge, attitude and behavior about biological factors of hospital cleaning staff were investigated. In the study, statistical analyses in line with the hypotheses are interpreted in comparison with similar studies in the literature.

In the study, H_1 hypothesis observed that the safety culture dimension of fatalism significantly differed ($p<0.05$). Participants without adequate knowledge about biological factors were identified to have statistically significantly higher points for the fatalism subdimension compared to participants with Knowledge. In line with these results, H_1 hypothesis was accepted.

For the H_2 hypothesis in the study, the fatalism subdimension of safety culture appeared to significantly differ ($p<0.05$). Participants answering the statement 'leaking bags should be emptied into a new bag' wrongly were found to have higher fatalism subdimension points compared to those answering the question correctly and H_2 hypothesis was accepted.

Statistically significant differences were observed between the knowledge of participants about the statement 'medical waste bags should be squeezed to take up less space' and the safety culture dimensions. This situation was due to the fatalism subdimension ($p<0.05$). In line with this, the H_3 hypothesis of the study was accepted. In a study about organizational culture and work safety and employee health culture, Güven (2014) stated that most employees had a traditional fatalist understanding due to social culture (Güven, 2014). Aytaç et al. (2017) reported that as safety culture perception levels reduced, fatalism perceptions increased in a study of female laborers working in the metal industry (Aytaç et al., 2017). Dursun (2011) stated that fatalist approaches by employees reduced safety participation and in line with this, employees implemented safety behavior related to work safety less (Dursun, 2011). In line with this literature information, our study similarly observed that the fatalism perception affected the safety culture in businesses.

In our study, a statistically significant difference was identified between participant knowledge about identifying the hospital respiratory and droplet isolation precaution figures with safety culture levels ($p<0.05$). Employees correctly identifying the hospital respiratory and droplet isolation precaution figures were observed to have higher points for management commitment and safety and general safety culture compared to those who could not identify the figures. In line with this result, hypotheses H_4 and H_5 were accepted. Claudia stated

that management culture was an inseparable part of institutional culture in research about the importance of institutional management for institutional culture (Claudia, 2016). A study of a construction company by Kim et al. (2019) reported that safety management systems had positive impact on safety performance (Kim et al., 2019). These results are similar to our study, and show that management is effective on employee behavior and formation of the safety culture perceptions of employees.

When participant perceptions about transmission of infectious diseases in the workplace and how infectious diseases could be transmitted to them are compared according to safety culture levels, no statistically significant difference was observed ($p>0.05$). In line with this, hypotheses H_6 and H_7 were rejected. When assessed from a holistic perspective, employees are expected to perceive individual safety as a value. Participants in our study had inadequate attitudes about infectious diseases causing a risk to them, while it appeared they did not perceive individual safety as a value.

When safety culture levels are compared according to whether participants thought personal protective equipment protected them sufficiently, apart from fatalism, all subdimensions were identified to display significant differences ($p<0.05$). In line with the present statistical analyses, hypothesis H_8 was accepted. It appears that fatalism perceptions were not effective on behavioral approaches about the use of personal protective equipment by participants, and that they had the safety culture perception as desired in terms of use of personal protective equipment against risks and hazards.

It was identified that the safety culture levels of participants did not differ according to thoughts about use of personal protective equipment appropriate for purpose ($p>0.05$). In this situation, hypothesis H_9 was not accepted. Employees used personal protective equipment in their working areas; however, it is thought they do not have adequate knowledge levels about the degree to which they use it appropriate for purpose.

Participants not injured by sharps had higher general safety culture perception levels and mean points for all subdimensions apart from fatalism, compared to those who were injured. However, the differences did not reach statistical significance ($p>0.05$). Hypothesis H_{10} was not accepted. When national and international publications are investigated, similarly, it was reported that no significant differences were found between employees experiencing work accidents in the workplace or not and safety culture levels (Akdeniz, 2018; Çiçek, 2016; Gürbüz and İbrakovic, 2017; Kao et al., 2008). When the findings of our study are compared with similar studies in the literature, within the framework of safety culture, it is considered that the safety instructions conveyed to employees by the organizational structures are not effective at the desired level in order to protect employees from work accidents.

In the study, hypothesis H_{11} was rejected. In other words, the safety culture levels of participants appeared not to significantly differ ($p>0.05$) according to their use of personal protective equipment during injuries. Kaya and Arık (2017) reported that 8.3% of cleaning and patient care personnel working in hospitals did not use personal protective equipment during injury; however, they did not make any comparison related to safety culture perception (Kaya and Arık, 2017).

It appeared that all dimensions of safety culture significantly differed according to the status of injured participants reporting injury to the Hospital Infection Control Unit ($p<0.05$) and hypothesis H_{12} in the study was accepted. As the safety culture points of participants increased, it appeared the rates of reporting work accidents increased. This situation indicates that employees with democratic safety culture attitudes abide by the practices related to work safety in the institution, do not stay unregistered and report injuries to the Hospital Infection Control Unit.

Limitations of the study

As the research only covered Giresun province, it cannot be generalized to Türkiye. Research data are limited to employee statements.

CONCLUSION

Assessment of knowledge levels of staff about occupational risk factors observed the fatalist perception was very effective. The fatalism perception was identified to be higher especially for knowledge levels about practice transformed to behavior. The fatalist approach is encountered as a problematic area in terms of work safety.

Reporting of work accidents by employees is one of the most important indicators in assessment of WHS practice in organizational structures. In our study, employees with the desired level of safety culture perceptions appeared to have higher awareness about accident reporting. Additionally, employees developed a positive perspective about the use of personal protective equipment for hazards and risks in the work environment and this perception was identified to have positive interaction with safety culture.

Additionally, it was determined that the attitude of management to safety and how this was perceived by staff was very important in the process of employees creating safety culture perceptions and developing safe behavior.

The results of the study show that safety culture perception is effective on the emergence of safe behaviors in workplaces.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: BK, YO; **Material, methods and data collection:** BK; **Data analysis and comments:** BK; **Writing and corrections:** BK, YO.

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Evaluation of the Effectiveness of Episiotomy Repair Training with Calf Tongue Simulator for Midwifery Students

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ABSTRACT

Aim: To determine whether the use of calf tongue simulator in episiotomy repair increases the knowledge and skill level of the students. **Materials and Methods:** The study in the form of a single-group "pretest-posttest" pretrial was carried out in April 2019 with students of midwifery (n=66). During episiotomy repair simulation training, suture techniques (simple suturing, locking loop suturing and vertical matrix) were shown by using calf tongue simulators. The data were collected by using a personal information form, while the Episiotomy Knowledge Levels Assessment Form and Episiotomy Repair Skill Levels Assessment Form were used for the pretest and posttest. **Results:** As a result of the simulation training, increases were observed in episiotomy knowledge and repair skill levels in comparison to the pre-training period ($p<0.05$). **Conclusion:** As a result of the study, it was determined that episiotomy repair training given to students with a calf tongue simulator achieved increases in their knowledge and skill levels in comparison to pre-test result. Simulator examples that can be used for episiomy repair can be added to the midwifery education curriculum.
Keywords: Episiotomy, Calf Tongue Simulator, Simulation, Midwifery Students, Skills.

Ebelik Öğrencilerine Verilen Dana Dili Simülatörü ile Epizyotomi Onarımı Eğitiminin Etkinliğinin Değerlendirilmesi

ÖZ

Amaç: Epizyotomi tamirinde dana dili simülatörü kullanımının öğrencilerin bilgi ve beceri düzeyini arttırıp arttırmadığını belirlemektir. **Gereç ve Yöntem:** Tek grup "öntest-sontest" deneme öncesi modeli tipindeki araştırma Nisan 2019 tarihinde ebelik öğrencileri ile gerçekleştirilmiştir (n=66). Epizyotomi tamiri simülasyon eğitiminde dana dili simülatörü kullanılarak sütür teknikleri gösterilmiştir. Verilerin toplanmasında kişisel bilgi formu, ön test ve son test için Epizyotomi Bilgi Düzeyini Değerlendirme Formu ve Epizyotomi Tamiri Beceri Düzeyini Değerlendirme Formu kullanılmıştır. **Bulgular:** Simülasyon eğitimi sonrasında eğitim öncesine göre epizyotomi bilgi düzeyi ve epizyotomi tamiri beceri düzeylerinde artış olduğu saptanmıştır ($p<0.05$). **Sonuç:** Çalışma sonucunda ön-test sonucuna göre öğrencilere danadili simülatörü ile verilen epizyotomi tamiri eğitiminin öğrencilerin bilgi ve beceri düzeyinde artış sağladığı belirlenmiştir. Ebelik eğitim müfredatına epizyotomi onarımı için kullanılabilecek simülatör örnekleri eklenebilir.

Anahtar Kelimeler: Epizyotomi, Dana Dili Simülatörü, Simülasyon, Ebelik Öğrencileri, Beceri.

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INTRODUCTION

Episiotomy is to make a controlled incision in the perineum to enlarge the opening of the vagina during childbirth to reduce the incidence of third and fourth degree perineal tears. Ideally, an episiotomy would relieve pressure on the perineum resulting in an easily repairable incision when compared to uncontrolled perineal tears. The different types of episiotomy incisions include lateral, the modified-median, the midline, the mediolateral, J-shaped, anterior, and radical. Episiotomy repair can be applied as simple suturing, locking loop suturing and vertical matrix. (Barjon & Mahdy, 2022; Woretaw et al., 2021; Besen & Rathfisch, 2020; Besen & Ratfisch, 2019). Episiotomy is one of between 12% and 86% conducted surgical operations in the world among women (Besen & Rathfisch, 2020; Friedman, Ananth, Prendergast, D'Alton, & Wright, 2015; Trinh, Roberts, & Ampt, 2015; Silf et al., 2015; Franscisco et al., 2014). In cases where episiotomy is not practiced, serious perineal lacerations including the anal sphincter are some of the significant complications of vaginal birth. The incidence of serious perineal lacerations varies between 1.2% and 6% (Knobel, Volpato, Gervasi, Viergutz, & Júnior, 2018). In order to prevent such lacerations, episiotomy may be performed in cases where the perineum is stretched at the 2nd stage of delivery. As an episiotomy incision is a more regular cut, it can be repaired more easily than advanced lacerations, and this way, the sutured area is recovered more easily. In some countries, episiotomy may be applied routinely in all deliveries. However, the World Health Organization (WHO) recommends conducting selective episiotomy to prevent perineal lacerations in necessary cases in women who are giving spontaneous vaginal birth and for avoiding routine episiotomy operations. The WHO recommends an episiotomy rate of 10% for all normal deliveries. (WHO a, 2018; Junior & Júnior, 2016). Although there are uncertainties regarding the rate of episiotomy, the rate of episiotomy is reported to be 46% in low- and middle-income countries. Episiotomy rates by country are as follows; 100% in Taiwan, 100% in Guatemala, 98% in Pakistan, 75% in Cyprus, 63.3% in South Africa, 19.9% in France, 9.7% in Sweden, 3.7% in Denmark (Woretaw et al., 2021; Blondel et al., 2016). In our country, the rate of episiotomy is reported to be between 64% and 88% (Karaahmet & Yazıcı, 2017).

In episiotomy or laceration repairs, midwives need to have suturing skills. Effective teaching of obstetric surgery skills is vital for the training of midwives (Şen Aytekin et al., 2022; Besen & Rathfisch, 2020). Due to increased numbers of students in the field of midwifery, relatively lower numbers of educators and increased prevalence of malpractice lawsuits in the field of obstetrics, student practices cannot be sufficiently included in internship programs, and the skills of students are prevented from developing adequately (Koçak et al., 2017). Simulation is defined as "an interactive and occasionally immersive training technique that provides learning without subjecting someone to risks related to all or a part of clinical experiences" (Çalım & Öztürk, 2018; Terzioğlu et al., 2012). WHO recommends usage of simulation methods in midwifery training to increase students' knowledge, technical skills, motivation, satisfaction, self-esteem, patient safety, leadership, efficiency and productivity (WHO, 2009; WHO b, 2018). A previous study reported that nursing students are not able to sufficiently apply their theoretical knowledge and do not consider themselves adequate in terms of their clinical skills (Kapucu & Bulut, 2011). Therefore, training that is provided with simulators or inanimate models may improve obstetric surgery skills and performance of students by providing them with an interactive learning environment in the laboratory (Banks et al., 2006). Moreover, simulation-based training may direct students towards active participation in clinical practices by increasing their self-esteem (Lathrop, Winningham, & VandeVusse, 2007; Kordi et al., 2015; Nghitanwa, Endjala, & Hatupopi, 2019).

The model that is to be used in episiotomy repair training should ideally closely resemble human skin. The life-like nature of a simulation model allows better adaptation of the participants of the training, increasing their skills, achievement of a learning environment with less stress and more control and development of suturing skills before physical contact with patients (Çalım & Öztürk, 2018). Some training programs that achieved high levels of reality have developed virtual reality suturing simulators with advanced technology. However, most programs do not have the resources to provide these detailed instruments. To our knowledge, there are very few studies in the literature on episiotomy repair training with a calf tongue simulator. In these two studies, the students were not trained on different suture techniques in the repair of episiotomy on the calf tongue (Eston et al., 2020; Guler et al., 2018). However, in this study, students were given training on different suture techniques and the knowledge and skill levels of the midwifery students after the training were evaluated. The purpose of this study is to determine whether or not using a calf tongue simulator in episiotomy repair training increases the knowledge and skill levels of students.

MATERIALS AND METHODS

Design and location

The study was carried out as a single-group pretrial with "pretest and posttest" in April 2019 in the midwifery department of a state university in Turkey.

Sample

Second year students of the Department of Midwifery at the aforementioned university were included in the sample of the study. Two students who were absent on the day of data collection were not included in the

study. Sixty six students who agreed to participate in the study and filled out voluntary consent forms were included.

Data collection method and process

The data were collected by using a personal information form about the sociodemographic characteristics of the participants, as well as the Episiotomy Knowledge Levels Assessment Form and Episiotomy Repair Skill Levels Assessment Form. Students are included in the training program.

Assessment tools

Personal Information Form: The personal information which was developed by the researchers consisted of a total of 6 questions.

Episiotomy Knowledge Levels Assessment Form: The form that was developed by the researchers for the purpose of assessing the knowledge levels of students on episiotomy consisted of a total of 10 questions. The questionnaire form contained questions on what episiotomy is, on which muscle it is applied, whether or not it should be practiced routinely, types of episiotomy, recovery time and suturing materials (Guler et al., 2018; Karaahmet & Yazıcı, 2017; Illston, Ballard, Ellington, & Richter, 2017). The answers given by the participants to these questions were analyzed by the researchers as "adequate" or "inadequate". Adequate answers to the episiotomy knowledge questions were scored "1" and inadequate or unanswered questions were scored "0".

Episiotomy Repair Skill Levels Assessment Form: The form that was developed by the researchers in line with the literature for the purpose of assessing the skill levels of students on episiotomy consisted of a total of 10 statements (Guler et al., 2018; Illston, Ballard, Ellington, & Richter, 2017; Karaahmet & Yazıcı, 2017; Tokuhara, Boldt, & Yamamoto, 2004). The skill list on performing the episiotomy steps was developed-(Table 2). The form includes skills such as using a needle holder, simple suturing, locking loop suturing and vertical matrix suturing techniques. The levels of the participants in applying these techniques were analyzed by the researchers as "adequate" or "inadequate". Adequate application to the Episiotomy Repair Skill questions were scored "1" and inadequate or unanswered questions were scored "0".

Episiotomy and Episiotomy Repair Training Program: Three weeks before the training by author/authors, the participants were given theoretical information (face-to-face didactic lectures) about episiotomy and repairing episiotomy for 2 hours. The theoretical information was provided in the form of a slide show. Before starting the training program, the participants were given the Personal Information Form, Episiotomy Knowledge Levels Assessment Form and Episiotomy Repair Skill Levels Assessment Form. A calf tongue simulator was used for the program as it was the closes to human tissue (Eston et al., 2020; Guler et al., 2018). The materials were provided by the researchers. A calf tongue was fixed on a tray to prevent it from slipping, and a biconvex incision of 5 cm was applied on the model (Figure 1). After the incision, the model in the form of the vaginal wall, facia tissue and skin resembled an episiotomy (Guler et al., 2018; Illston, Ballard, Ellington, & Richter, 2017; Tokuhara, Boldt, & Yamamoto, 2004). Each student had one calf tongue simulator to work on. Since the calf tongue is too big, it was not given to the students as a whole. One calf tongue was divided into three equal parts. Information on episiotomy was provided in the training, and episiotomy suturing techniques were taught by demonstration. The students were shown the simple suturing, locking loop suturing and vertical matrix suturing techniques and given training about suturing materials, by following the skill list. The students were included in the training program one by one. The training was provided by the researchers who are midwives. The training process lasted for a total of 15 minutes per student. After the training, in line with the observations of the researchers, the students were ensured to practice on the calf tongue simulator for 2 hours. Since the researchers made observations, the students were not affected by each other. Later on, the students were tested with the Episiotomy Knowledge Levels Assessment Form and Episiotomy Repair Skill Levels Assessment Form again. The questions in these forms were asked to the students by the researchers. The skills in the forms were asked to be applied by the students and observed by the researchers. Filling out the forms took 15 minutes per student.

Data analysis

The data were analyzed using the SPSS 20.0 program. The analysis utilized means, standard deviations, minimum, maximum, frequencies and percentages. The Kolmogorov–Smirnov test was used to assess the normal distribution of data. Paired Sample T Test was used to determine the difference between the pretest and posttest scores of the participants' knowledge and skill levels.

Ethical considerations

For the study to be carried out, approval was received from the Clinical Research Ethics Committee of the Faculty of University (Date: 2019, Number: 2019/79) and the Faculty of Health Sciences (Number:04/04/2019-E17021). The students who agreed to participate in the study were informed about the objective of the study, explained that their personal information would be kept confidential, ensured that they were free to leave the study whenever they wanted, and their written consent was obtained by a Voluntary Information Form.

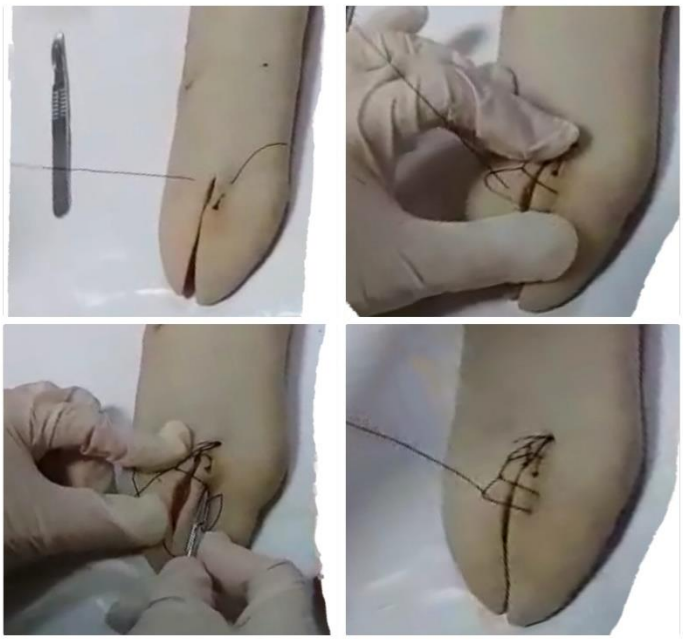

Figure 1. Calf Tongue Simulators
(Figure 1 was taken during the application. The suture in Figure 1 was performed by the researcher. Tweezers were not used to hold the tissue due to the hand habit of the researcher.)

RESULTS

The mean age of the participants was 20.30±2.23. In the study, 33.3% of the participants had degrees from vocational high schools of health, and 80.3% preferred the department willingly. In this study, 21.2% had previous experience in suturing, and among those who had this experience, 31.2% experienced episiotomy suturing (Table 1).

Table 2 shows the episiotomy knowledge and skill levels of the participants before and after the training program. After the training, the knowledge and skill levels of the students increased in comparison to their pre-training levels ($p<0.05$) (Figure 2, Figure 3).

Table 1. Distribution of the participants based on their descriptive characteristics (n=66).

Variables	**Mean±SD**	**Min-Max**
Age (Mean±SD)	20.30±2.23 (Min.18, Max.36)	
	n	**%**
Graduates of vocational high schools of health		
Yes	22	33.3
No	44	66.7
Selected the department willingly		
Yes	53	80.3
No	13	19.7
Reason for selecting the department (those unwilling)		
No responsive	1	7.7
Wishes of family	8	61.5
Abundant job opportunities	1	7.7
Placement test score was sufficient for the department	3	23.1
Previous experience in suturing		
Yes	14	21.2
No	52	78.8
Nature of previous suturing experience*		
Episiotomy suture	5	31.2
Suture on real tissue	8	50
Suture on model	3	18.8

* Multiple answers given (Fourteen students with previous experience in suturing).

Table 2. Episiotomy knowledge and skill levels of the participants before and after the training (n=66).

Episiotomy knowledge levels	**Before training Mean±SD**	**After training Mean±SD**	**t**	**p***
What is episiotomy?	0.98±0.12	1.00±0.00	1.000	0.321
On which muscle is episiotomy applied?	0.91±0.28	0.96±0.17	2.048	**0.045**
Should episiotomy be practiced routinely?	0.68±0.46	0.93±0.24	4.138	**<0.001**
Lateral episiotomy	0.75±0.43	1.00±0.00	4.561	**<0.001**
Mediolateral episiotomy	0.86±0.34	1.00±0.00	3.204	**0.002**
Median episiotomy	0.84±0.36	1.00±0.00	3.407	**0.001**
Type of episiotomy with the easiest wound recovery	0.43±0.50	0.91±0.28	6.805	**<0.001**
Type of episiotomy with the most complications	0.72±0.44	0.98±0.12	4.749	**<0.001**
Average recovery time for episiotomy	0.57±0.49	0.98±0.12	6.708	**<0.001**
Sutures most frequently used for episiotomy	0.71±0.45	0.93±0.24	3.549	**0.001**
Episiotomy repair skill levels				
Using a needle holder (portegue)	0.68±0.46	1.00±0.00	5.508	**<0.001**
Holding the suturing needle with a holder (portegue) from the right location	0.42±0.49	1.00±0.00	9.392	**<0.001**
Making the first loop suture correctly	0.01±0.12	0.96±0.17	36.946	**<0.001**
Making locking loop sutures	0.03±0.17	0.92±0.26	23.406	**<0.001**
Making the last loop suture correctly	0.04±0.20	0.80±0.40	14.252	**<0.001**
Simple suturing	0.22±0.42	0.96±0.21	13.166	**<0.001**
Vertical matrix suturing	0.00±0.00	0.84±0.36	19.079	**<0.001**
Cutting the suture to the correct length	0.30±0.46	0.91±0.28	10.000	**<0.001**
Applying the correct distance between two sutures	0.10±0.31	0.92±0.26	15.588	**<0.001**
Uniform connection of the ends of the wound after suturing	0.53±0.50	1.00±0.00	7.588	**<0.001**

*Paired samples t test.

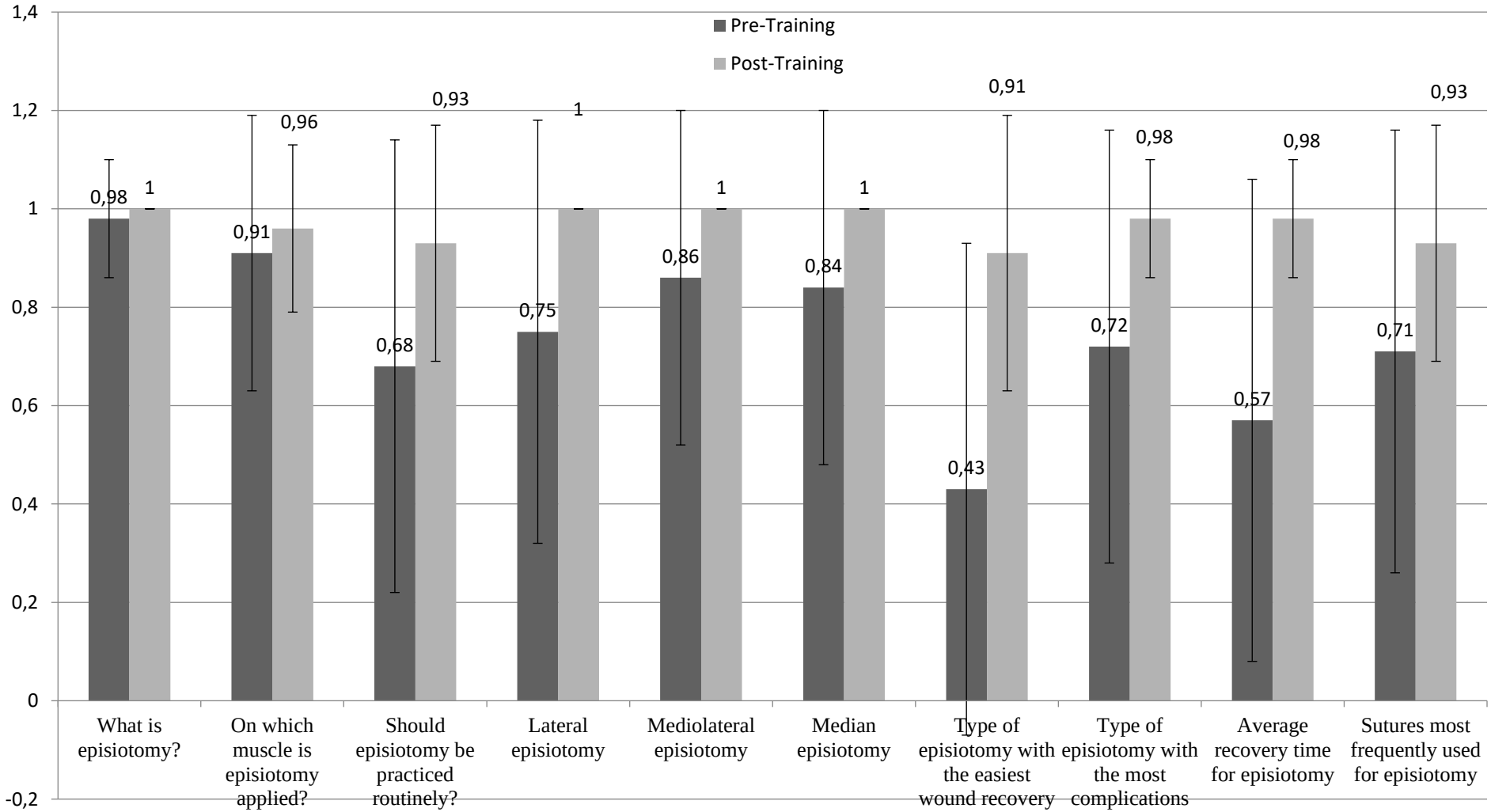

Figure 2. Knowledge levels of the participants in episiotomy repair.

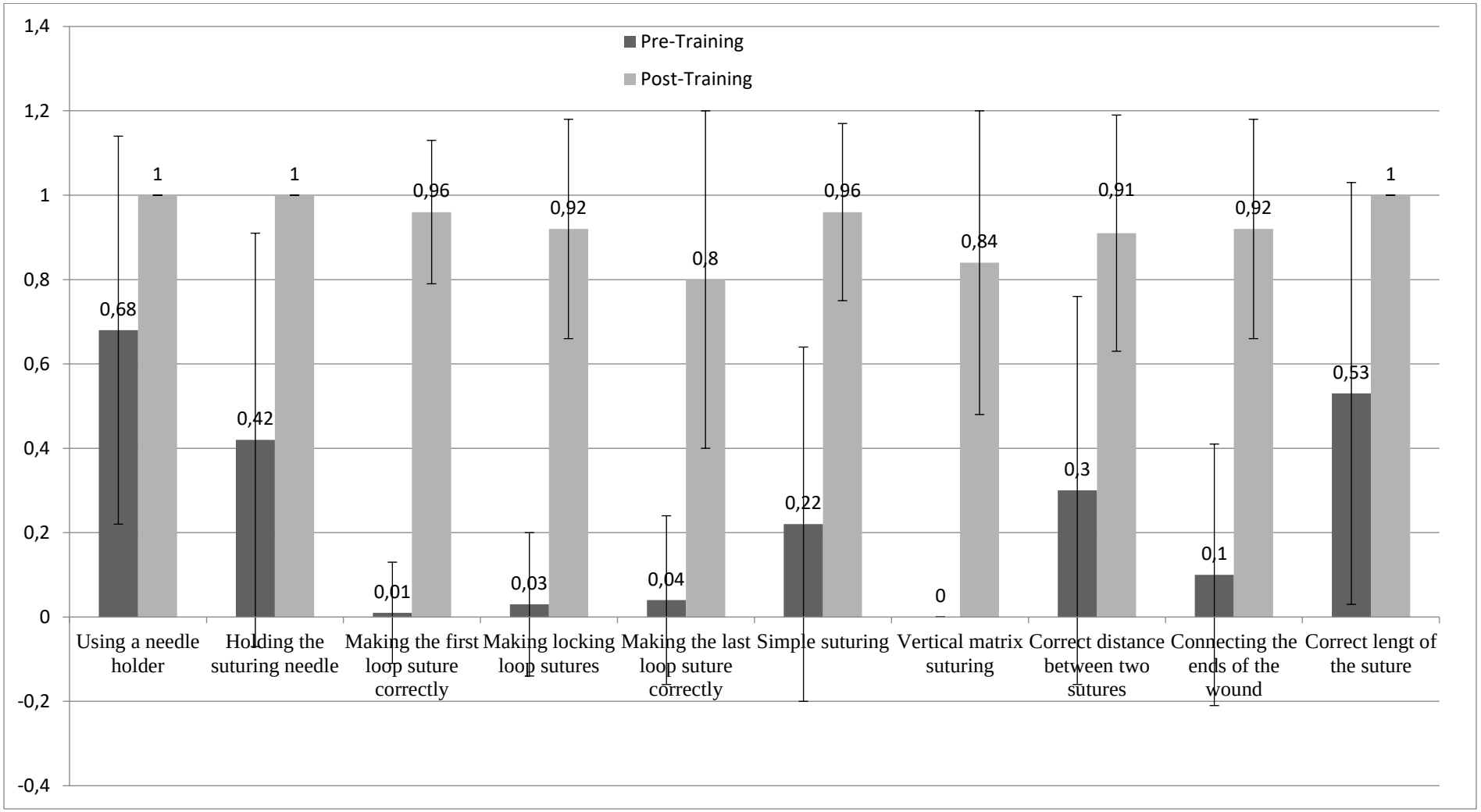

Figure 3. Skill levels of the participants in episiotomy repair (locking loop sutures).

Table 3. Episiotomy knowledge and skill levels of midwifery students with and without health vocational schools graduates before and after education.

Episiotomy knowledge levels	Graduates of Vocational High Schools of Health	Before Training Mean±SD	After Training Mean±SD	t	p**
What is episiotomy?	Yes (22)	1.04±0.21	1.00±0.00	1.000	0.329
	No (44)***	1.00±0.00	1.00±0.00		
On which muscle is episiotomy applied?	Yes (22)	1.04±0.21	1.00±0.00	1.000	0.329
	No (44)	1.11±0.32	1.04±0.21	1.774	0.033
Should episiotomy be practiced routinely?	Yes (22)	1.50±0.51*	1.04±0.21	4.183	**<0.001**
	No (44)	1.22±0.42*	1.06±0.25	2.201	**<0.001**
Lateral episiotomy	Yes (22)	1.13±0.35	1.00±0.00	1.821	0.083
	No (44)	1.29±0.46	1.00±0.00	4.246	**<0.001**
Mediolateral episiotomy	Yes (22)***	1.00±0.00*	1.00±0.00		
	No (44)	1.20±0.40*	1.00±0.00	3.325	**0.002**
Median episiotomy	Yes (22)	1.09±0.29	1.00±0.00	1.449	0.162
	No (44)	1.18±0.39	1.00±0.00	3.091	**0.003**
Type of episiotomy with the easiest wound recovery	Yes (22)	1.54±0.51	1.04±0.21	4.583	**<0.001**
	No (44)	1.56±0.51	1.11±0.32	5.120	**<0.001**
Type of episiotomy with the most complications	Yes (22)	1.36±0.49	1.00±0.00	3.464	**0.002**
	No (44)	1.22±0.42	1.02±0.15	3.325	**0.002**
Average recovery time for episiotomy	Yes (22)	1.36±0.49	1.00±0.00	3.464	**0.002**
	No (44)	1.45±0.51	1.02±0.15	5.717	**<0.001**
Sutures most frequently used for episiotomy	Yes (22)	1.31±0.47	1.00±0.00	3.130	**0.005**
	No (44)	1.27±0.45	1.09±0.29	2.233	**0.031**
Episiotomy repair skill levels					
Using a needle holder (portegue)	Yes (22)	1.13±0.35*	1.00±0.00	1.821	0.083
	No (44)	1.41±0.49*	1.00±0.00	5.456	**<0.001**
Holding the suturing needle with a holder (portegue) from the right location	Yes (22)	1.59±0.51	1.00±0.00	5.508	**<0.001**
	No (44)	1.56±0.50	1.00±0.00	7.522	**<0.001**
Making the first loop suture correctly	Yes (22)	1.95±0.21	1.00±0.00	21.000	**<0.001**
	No (44)	2.00±0.00	1.04±0.21	30.050	**<0.001**
Making locking loop sutures	Yes (22)	1.95±0.21	1.09±0.29	11.533	**<0.001**
	No (44)	1.97±0.15	1.06±0.25	20.736	**<0.001**
Making the last loop suture correctly	Yes (22)	1.86±0.35*	1.18±0.39	6.708	**<0.001**
	No (44)	2.00±0.00*	1.20±0.41	12.931	**<0.001**
Simple suturing	Yes (22)	1.68±0.47	1.00±0.00	6.708	**<0.001**
	No (44)	1.81±0.39	1.06±0.25	11.358	**<0.001**
Vertical matrix suturing	Yes (22)	2.00±0.00	1.04±0.21	21.000	**<0.001**
	No (44)	2.00±0.00	1.20±0.41	12.931	**<0.001**
Cutting the suture to the correct length	Yes (22)	1.68±0.47	1.09±0.29	5.508	**<0.001**
	No (44)	1.70±0.46	1.09±0.29	8.264	**<0.001**
Applying the correct distance between two sutures	Yes (22)	1.81±0.39*	1.09±0.29	6.197	**<0.001**
	No (44)	1.93±0.25*	1.06±0.25	16.503	**<0.001**
Uniform connection of the ends of the wound after suturing	Yes (22)	1.31±0.47	1.00±0.00	3.130	**0.005**
	No (44)	1.54±0.51	1.00±0.00	7.183	**<0.001**

*p<0.05 (Independent sample t test) **Paired samples t test
***The correlation and t cannot be because the standard error of the difference is 0.

In Table 3, episiotomy knowledge levels of students with and without health vocational high school are given before and after education. Significant differences were found between students with and without a health vocational high school before education in terms of should episiotomy be practiced routinely? (p=0.025), mediolateral episiotomy (p=0.022), using a needle holder (portegue) (p=0.025), making the last loop suture correctly (p=0.012), and applying the correct distance between two sutures (p=0.009). There is no difference between the two groups after the training (p>0.05).

DISCUSSION

By using simulation in healthcare training, technical skills, problem-solving and decision-making skills and communication skills may be developed (Sezer &Elcin, 2017; Scholes et al., 2012). In this study, it was determined that the hand skills of the students were insufficient before the training in terms of episiotomy repair techniques that they would use in clinical practice. Previous studies have shown the importance of simulation trainings in development of skills in training nurses and midwives (Şen Aytekin et al., 2022; Terzioğlu et al., 2012; Kempster,

McKellar, Steen, & Fleet, 2018; Smith, Gray, Raymond, Catling-Paull, & Homer, 2012; Fergusson & Shahtahmasebi, 2014). In the study, it was found that the episiotomy knowledge levels and episiotomy repair skill levels of the participants increased after the training. In the studies in the literature, similar to this study, it is reported that applied education provides an increase in the skill level. Banks et al. (2006) determined that the episiotomy repair skills of students increased significantly after the training they provided on episiotomy repair in the surgery laboratory. Similarly Knobel et al. (2018) reported an increase in the knowledge and skill levels of participants after providing a suturing techniques training with episiotomy simulation. Additionally, the participants in their study stated in 3-6 months following the training that they encountered severe lacerations in their practice, and the simulation training was useful for surgical repairs. The importance of simulation in applications requiring different skills apart from episiotomy repair is reported in studies in the literature. Kumar et al. (2018) stated that there was a significant improvement in the gynecologic bimanual examination skills of students of medicine and nursing after they were given simulation training. Lathrop et al. (2007) determined that there was an increase in the skills and self-esteem levels of midwifery and nursing students as a result of a simulation-based training program given with a shoulder dystocia learning module. The authors also stated that learning by simulation should be included in midwifery curricula. The importance of the learning technique used in applied education is inevitable in the improvement of student satisfaction, decrease in anxiety level and development of self-efficacy as well as skill increase. Terzioğlu et al. (2012) found that students found the skill development practices given to the in the laboratory and classroom environments before clinical practice useful. Lendahls and Oscarsson (2017) reported that most students thought simulation training is necessary, and it is safer and more encouraging to develop skills without fears about achieving patient safety. Demirel et al. (2020) determined that calf tongue episiotomy repair simulation training and application decreased students' anxiety levels and increased their self-efficacy levels. The results of other studies in the literature were similar to those in our study (Knobel, Volpato, Gervasi, Viergutz, & Júnior, 2018; Banks et al., 2006; Terzioğlu et al., 2012; Lathrop, Winningham, & VandeVusse, 2007; Kumar et al., 2018; Lendahls & Oscarsson, 2017). As simulation training requires one-to-one active participation, it is believed to be effective in development of students' cognitive, psychomotor and attitudinal skills in terms of episiotomy repairing. In the literature, there are studies on episiotomy skills in the form of comparison in simulators or pre-test and post-test. However, there is no detailed explanation about the suture techniques used. Only the change in skill level was evaluated in the studies. In this study, the skill level was determined in detail in the suture techniques used before and after the training. For this reason, the detailed findings of the research could not be discussed, but the general skill level was discussed.

A good learning involves meta-cognition, which means the skills of seeing oneself in the learning process and observing what is happening and which learning requirements exist in the process (Burke & Mancuso, 2012). In clinical practices, students may have low self-esteem due to their fears of making mistakes and be hesitant to ask questions to their mentors next to the patient during practice. This is why simulation training is indispensable in obstetrics in terms of pausing different events, discussion, multidisciplinary care models and quality care development (Lathrop, Winningham, & VandeVusse, 2007; Lendahls & Oscarsson, 2017). In this study, the pretest allowed determination of the objective of instruction activities, while the posttest allowed recognition of the achieved learning by students and its increase. Similarly Ruyak et al. (2018) argued that simulation will provide opportunity to practice the significance of focusing on skills of communication with other team members and clear transfer of responsibilities in high-stress situations. Simulation training also provides opportunities in terms of assessment of adequacy (Kumar et al., 2018). In the study, it was found that there was an increase in the students' ability to using a needle holder correctly and holding the suturing needle with a holder from the right location after the training compared to the pre-training. In Güler et al. (2018) study, it was determined that the students who practiced on the calf tongue had a significantly higher ability to use the needle holder correctly and holding the suturing needle with a holder from the right location than the students who practiced on the sponge. Yılar Erkek and Öztürk Altınayak (2021) found that midwifery students in the episiotomy repair model had higher Episiotomy Skill Assessment Form scores than students in the sponge group. It is thought that practicing with a simulator close to real tissue increases the skill level.

Studies have reported that simulation trainings provided with life-like materials allow students to develop their skills, make decisions and self-assessments (Brady, Bogossian, & Gibbons, 2015; Mckenna et al., 2011; Stitely, Cerbone, Nixon, & Bringman, 2011). In this study, the practice of learning episiotomy repair with a calf tongue simulator provided promising results in comparison to providing theoretical information. However, no comparison to another simulation model was made. In the literature, the skill levels of the students were compared using different simulators. Guler et al. (2018) compared episiotomy repair training programs with a sponge simulator and beef tongue simulator in

terms of the increases in students' skills, and they found that beef tongue model was found to be more successful regarding their self-confidence. Patel et al. (2010) investigated the feasibility of beef tongue model versus an instructional video increase their skills of fourth-degree laceration repair. The authors found that, instead of watching the instructional video, the beef tongue model was more advantageous. In the same, Dancz et al. (2014) compared episiotomy repair training programs with a sponge simulator and calf tongue simulator in terms of the increases in students' skills, and they found that all students preferred the calf tongue simulator although there was no statistically significant difference between the two models. Although both methods increase the student's confidence, working with the calf tongue simulator after the sponge simulator provided an additional increase in confidence. Similarly Cooper et al. (2012) found in their systematic review that learning midwifery skills by simulation improves practice, it is useful in rare practices, and it may reduce the time that is spent to reach adequacy. As simulation is becoming increasingly more important in midwifery training especially for repairing episiotomy and lacerations, calf tongues may be used as a learning instrument with perfect tactile accuracy and economical price. However, there is a need for further studies to confirm the advantages of its usage in midwifery training.

Limitations of Study

A limitation of this study was that the students were assessed right after the training program with calf tongue simulators. The results may be affected by "short-term memory" or "recalling." Not having assessed the clinical performances of the students was another limitation of the study. The inclusion of people with previous episiotomy experience and health vocational high school graduates is an important limitation. Another limitation is that it is conducted in a single university and there is no control group. Another limitation of the study is that tweezers are not used during the suture application. It is recommended to use tweezers in future studies. We recommend for future studies on assessment of simulation programs to also consider the factor of forgetting after a time following training while assessing skills and focus on the change in clinical performance.

CONCLUSION

Training midwifery students effectively and by protecting patient safety in terms of obstetric surgical skills is one of the greatest difficulties experienced by educators of midwifery. Simulation-based learning is a promising education methodology that has a large potential in overcoming these difficulties. As a result of the study, it was determined that the episiotomy repair training given to the participants with calf tongue simulators provided increases in the knowledge and skill levels of the students in comparison to theoretical training. Therefore, it is recommended to include learning by simulation in midwifery curricula in terms of developing skills.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: HT; **Material, methods and data collection:**HT, SKS; **Data analysis and comments:** HT; **Writing and corrections:** HT, SKS.

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The Impact of Job Satisfaction on Nursing Performance: The Moderating Effect of Job Stress

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ABSTRACT

Objective: The purpose of this study was to analyze the relationship between job satisfaction impact on nursing performance and to find out how the job stress play as a moderate variable effect on the relationship between job Satisfaction and nursing performance. **Materials and Methods:** To obtain information regarding demographic data, job performance, job satisfaction and job stress from participants, a survey questionnaire was conducted to nurses in one of the public hospital in the United Arab Emirates after taking the approval from hospital administration. Out of 120 nurses 111 have been participated in the current study. To test the hypothesis, two different statistical analyses were utilized, namely Pearsons correlation analysis and liner regression analysis. **Results:** The study finds that there is a positive correlation between nurses' job satisfaction and nursing performance. In addition, the job stress moderator negatively affected on the relationship between job satisfaction and nursing performance. **Conclusion:** In an atmosphere of pressure, tension and division of work, Nurses' performance is one of the most basic challenges that healthcare services face. The reason for this is that performance is linked to work satisfaction and stress on one hand, and management, funding, and organizational growth on the other. Furthermore, Nurse's performance is naturally connected to patient safety. This research useful to health care managements to develop and enhance polices and rules to increase satisfaction and decrease job stress to enhance the nursing performance.
Keywords: Job Satisfaction, Job Stress, Nursing Performance, United Arab Emirates.

İş Memnuniyetinin Hemşirelik Performansi Üzerindeki Etkisi: İş Stresinin Aracilik Etkisi

ÖZ

Amaç: Bu çalışmanın amacı, iş tatmininin hemşirelik performansı üzerindeki etkisini analiz etmek ve iş stresinin, iş tatmini ile hemşirelik performansı üzerinde nasıl bir aracılık rolü oynadığını bulmaktır. **Gereç ve Yöntem:** Birleşik Arap Emirlikleri'ndeki devlet hastanelerinden birindeki hemşirelere hastane yönetiminden onay alındıktan sonra anket uygulanmıştır. Bu anket ile katılımcılardan demografik veriler, iş performansı, iş tatmini ve iş stresi hakkında bilgi toplanmıştır. Hastane yönetimi, anketi doldurmaları için tüm hemşirelere bir bağlantı göndermiştir. Ankete toplam 120 hemşireden 111'i katılmıştır Hipotezi test etmek için Pearson korelasyon analizi ve liner regresyon analizi olmak üzere iki farklı istatistiksel analiz kullanılmıştır. **Bulgular:** Çalışma, hemşirelerin iş tatmini ile hemşirelik performansı arasında pozitif bir ilişki olduğunu bulmuştur. Ayrıca iş stresi moderatörü iş tatmini ile hemşirelik performansı arasındaki ilişkiyi olumsuz yönde etkilemiştir. **Sonuç:** Stress, gerilim ve işbölümü ortamında çalışan hemşirelerin performansı sağlık hizmetlerinin karşılaştığı en temel zorluklardan biridir. Bunun nedeni, performansın bir yanda iş tatmini ve stres, diğer yanda yönetim, finansman ve organizasyonel büyüme ile bağlantılı olmasıdır. Ayrıca, Hemşire'nin performansı doğal olarak hasta güvenliği ile bağlantılıdır. Bu araştırmanın sonuçları, hemşirelik performansının artırılması için, hemşirelerin iş memnuniyetini artırmak ve iş stresini azaltmaya yönelik politikalar geliştirilmesinde hastane yönetimlerine yardımcı olabilir.
Anahtar Kelimeler: İş Memnuniyeti, İş Stresi, Hemşirelik Performansı, Birleşik Arap Emirlikleri

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INTRODUCTION

Supplying hospital services and care giving delivery to patients necessitates several efforts by members of staff, specifically registered nurses (RNs), to provide personalized health care. Also from the opposite side, there is widespread concern and struggle regarding nurse shortages around the world. Nursing is a mission to care; nursing is the first employee in hospitals to care for patients 'needs, to keep patients happy with their cheerful and sympathetic touch and attention that the nurse delivers to the patient (Ramsay, 2005). Several factors and variables influence nurse satisfaction and performance, such as stress, workload, compensation, promotion, motivation and, others. Therefore, it is important to stabilize the nursing workforce, by giving for his job fulfilment and to give space for nurses to give all power to keep life and safety and excellent performance for the client. Job satisfaction is depicted as a nurse's passionate sensation or affective reaction to all aspects of his or her career (Smith et al., 1969). The Hospital of the current study is a general public hospital in the United Arab Emirates, where pleased nursing staff is required to increase service quality in the face of increasing hospital competition and an advanced burden of high-quality services for patients. The Hospital of the current study has had a decreased service quality for some years. It's crucial to look at this phenomenon and figure out what factors contributed to nurses becoming dissatisfied, as well as the impact on their works. Because no prior study has about these concerns, the effects of work satisfaction on nursing performance have yet to be determined. The study's goal is to see how job satisfaction correlated with nurses' performance and how job stress affects that relationship if entered as a moderator factor. One of the most crucial criteria for nurses in the system of health care is satisfaction with the task. Nurses are responsible for at least 50% of health services and above to 80% of health care in the countries. As a result, their contentment has an impact on the success and quality of health treatment (Farzianpour et al., 2016).

The research questions have been conducted as below:

- What is the relationship of job satisfaction on a nurse performance?
- What role does job stress play on the relationship between nursing performance and job satisfaction if entered as a moderating factor?

Performance on specific dimensions such as work quality and quantity is described as an individual's overall performance, task competency, or performance on specific dimensions such as work quality and quantity (Henriksen et al., 2017). The process through which managers of businesses evaluate employee act performance is known as performance assessment (Leineweber et al., 2016). For a nurse, a patient, a customer, and a hospital to survive, duty performance is critical. Patient safety, workers' productivity and performance, as well as care quality, retention and turnover, and commitment to the company may all be affected (Rothschild et al., 2005).

Job satisfaction in the life of medical staff is a major source of concern all over the world (Van der Doef et al., 2012). All hospitals and companies want employees and nursing staff that enjoy coming to work and interacting, with those who are enthusiastic about their employment. Furthermore, their job satisfaction is high. Because, they believe that they are treated equally at work and that their occupations provide them with chances such as variety, challenge, adequate compensation and benefits, autonomy, and helpful coworkers, among others. This emphasizes that employees who are satisfied at work will devote personal time to their works, will be imaginative and devoted, and will devise solutions to any problems that may develop (Keykaleh et al., 2018). The goal of the study was to discover the many components of occupational satisfaction, evaluate the relative importance of each component, and look into the impact of these components on worker productivity.

Stress increases people's quality of life and health up to a degree since it is healthy and necessary for them to face obstacles in their lives (Leineweber et al., 2016) but from other hand, if the pressure is too high, it loses its beneficial effects and becomes harmful (Dagget et al., 2016). Because it is a reaction that occurs when people are stressed or have a variety of demands placed on them, and it occurs when they are frightened that they will not be able to cope (Atkinson, 2004). The negative consequences of function stress are not restricted to the workplace and may be evident outside of it as well. According to the "American Institute of Stress (AIS)", stress is the root cause of over 80% of all workplace accidents and 40% of productivity deficits (Atkinson, 2004). Major investments are wasted as a result of employees' medical and mental illnesses, decreased productivity, act, leaving, and stress-related work changes (Zamanian et al., 2016). Career stress occurs in many occupations, but it appears that nurses suffer higher stress than other healthcare personnel (Dagget et al., 2016).

In the highlight of hospital services and patient care found that necessitates a variety of efforts from registered nurses (RNS) in order to deliver personalized health care, So, when the nurse in the hospital meets their peak results, they help the company reach its objectives and performance target. While also ensuring that all clients are pleased with the company operations, boosting the hospital's competitive advantages, and this is which is vital Like what, In Taiwan, the majority of nurses are employed by medical centers, Nurses are becoming an important part of a medical team as a result of evolving population dynamics and widespread diseases and the Nursing teams need stable, outstanding, and strong performance nurses to deliver health care services (Leineweber et al., 2016). Individuals with a high level of job contentment perform better for their employers than those with a low level of job satisfaction.

Meanwhile, as stated by (McCausland et al., 2005). According to previous studies, nurses' working day shifts were less vulnerable than those working at night shifts. Because evening shift workers are more probably to have negative emotional and behavioral impacts than day shift workers (Conway et al., 2008). As a result, of cyclic night and day shifts, circadian cycles are compromised and disrupt and increase stress (Brown et al., 2009). And from being worth noting as, patient safety is a vital component of health care quality, according to the authors, Nurses are the most common caregivers for patients, and teaching safe nursing techniques can help to minimize the number of events, injuries, morbidity, and death. This demonstrates that increased level job stress might lead to poor quality of nursing care provided (Keykaleh et al., 2018). Furthermore, providing patients with high-quality and safe nursing care leads to fewer referrals and readmissions, higher client satisfaction, and improved health and performance. (Farzianpour et al., 2016). The previous result of researchers all focuses on the many variables for job satisfaction and how the effect on nurse performance, some of the previous research finds positive relationship and others found negative relationship, but cannot find any research in UAE taking about this relationship between job satisfaction and nursing performance, how the job stress play role as moderating on the relationship, so the primary goal of this study is to further investigate the correlation between nurse job satisfaction and their nursing performance in the UAE, job stress effect as moderating, there was not much research that used statistic mathematics to ensure the relationship between variables and nurse jobs (Figure 1).

Hypotheses

H1: There is a positive relationship between job satisfaction and nursing performance among nurses.

H2: Job Stress will moderate the association between job satisfaction and nursing performance so that when job stress is low, the influence of job satisfaction on nursing performance is high, and when job stress is high, the impact of job satisfaction on nursing performance is low.

MATERIALS AND METHODS

Study type and sampling

This is survey type study that was conducted through distribution of questionnaires between nurses of a hospital in United Arab Emirates on December 2021. The sample hospital is a general public hospital in the United Arab Emirates, where pleased nursing staff is required to increase service quality in the face of increasing hospital competition and an advanced burden of high-quality services for patients. The Hospital has had a decreased service quality for some years. It's crucial to look at this phenomenon and figure out what factors contributed to nurses becoming dissatisfied, as well as the impact on their works. Because no prior study has about these concerns, the effects of work satisfaction on nursing performance have yet to be determined.

Data collection

The present research focuses on the nursing sector, which was done in the hospital, a public hospital in the United Arab Emirates. The respondents and the population for this study are nurses. The surveys were given to each nurse and were collected immediately after they were completed. Out of a whole of 120, 111 survey respondents were received from the hospital nurses.

Nurses' Job Performance Scale: The job performance scale developed by (Williams and Anderson1991), nurse performance is monitored by the nursing supervisor. The participants used a 5-point Likert- category scale to indicate their agreement (1=strongly disagree to 5= strongly agree). The Cronbach's Alpha was determined to be .727, which is a good level of internal consistency.

Job satisfaction Scale: The Scale Generic Job Satisfaction was applied to measurement job satisfaction at work in this study (MacDoald and Maclyntyre, 1997). The 5-Point Likert Scale was utilized on the work satisfaction section, and participants choose a number from 1 to 5 choices, with each number representing an expression (1=Strongly Disagree, 2=Disagree, 3=natural, 4=Agree, 5=Strongly Agree). High scores indicate a high level of job satisfaction, whereas low scores show a poor level of work satisfaction. Cronbach's alpha was found to be 0.947 which is a good level of internal consistency for the 10 work satisfaction items in our study.

Job stress Scale: The job stress scale questionnaire comprising of developed by (Parker and DeCotiis, 1983) contains from 13 items, also used the same scale above Likert scale for answered. The 5-Point Likert Scale was utilized on the work stress section, and participants choose a number from 1 to 5 choices, with each number representing an expression (1=Strongly Disagree, 2=Disagree, 3=natural, 4=Agree, 5=Strongly Agree). High scores indicate a high level of job stress, whereas low scores show a poor level of work stress. Cronbach's alpha was found to be 0.837 which is a good level of internal consistency.

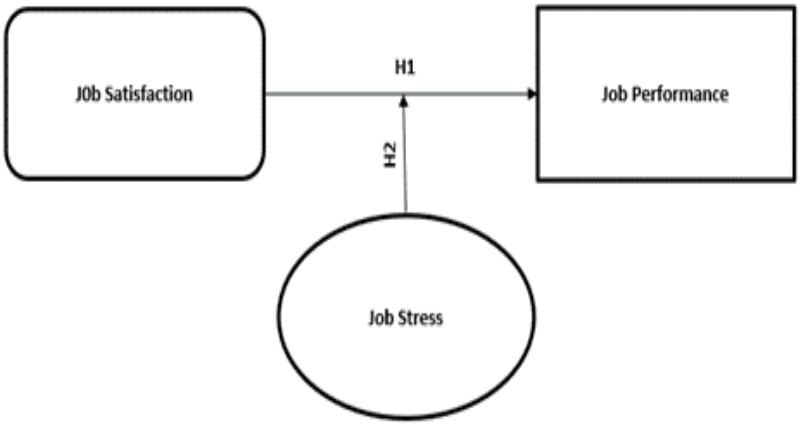

Figure 1. Conceptual framework of relationship between job satisfaction of nurses on their performance: moderating effects of job stress.

Ethical considerations

The Ethical Committee of the AL Dhafra Hospitals - Marfa - in the United Arab Emirates gave this study ethical approval, number (ADH-IREC-021-004). Each participant has provided information voluntary. To protect participants' anonymity, obtained data was masked so that no one could guess who they were.

RESULTS

Statistical analyses

The current study used Cronbach's Alpha for reliability analysis, applied correlation coefficient, and performed linear regression analysis to investigate the regression between independent, dependent and moderating variables. All the statistical analyses has been performed in SPSS program. Table 1 displays the correlation between job performance and job satisfaction, which are the independent, and dependent variables respectively. Table 2 demonstrates the result of testing the first hypothesis by regression analysis (the direct effect of job satisfaction on job performance). In addition, table 3 shows the result of testing the second hypothesis by regression analysis (the moderated effect of job stress on the relationship between job satisfaction and job performance).

Validity and reliability analysis

In the reliability of the study, the report results for reliability measure by SPSS using Cronbach's Alpha. Revealed that it indicates that the group of items is acceptable and reliable. Mean for nurse performance is reliable by 72.7 % for 21 items are represented, for job satisfaction, reliability represents 94.7 % for 10 items, and the last job Stress there is 13 items represent reliably 83.7%. That's mean my data is reliable (>0.70) for each constructed in the study. Pearson's product correlation coefficient and regression analysis were used to analyze the relationship between the independent and dependent variables. According to Table 1, the correlation coefficient is r= 0.540** which is a positive correlation. Also, it is significant as its p-value is .000 is less than the significance level (a=5%). Table 2 demonstrates the regression analysis for H1, in which the R square (R^2) value is .291, which means the job performance explained by job satisfaction represent by 29%, and can be concluded that the fitted model is significant F=44.810, p value <0.000 less than the significance level (5%), and the regression coefficient of nursing performance on job satisfaction is found .248 which implies that any increase in job satisfaction led to increasing in job performance by 248, Also, the regression coefficient is significant as p-value p<0.000 is less than significant level 5%. So, we accepted hypothesis H1. That's result indicates that if the nursing satisfaction is high the nursing performance will be high among nurses in The Hospital.

The moderation effect of job stress on relationship between job satisfaction and nursing performance

Linear Regression analysis was used to test affect job stress on the strength and direction association between nursing performance and job satisfaction, if adding as moderator variable on relationship. As it shown in Table 3, results revealed that the moderate effect of job stress (β=-0.093, Beta=-0.287, p<0.000) on the relationship between job satisfaction and nursing performance. The interaction between job satisfaction and job stress (β=0.086, beta, .287, p<0.000) as the constants was (B0=3.395, p<0.000) which result indicates that job stress is a negative moderator effect on the relationship between job satisfaction and nurse performance in The Hospital, which means that the hypothesis is accepted. These findings indicate that the relationship between job satisfaction and nurse performance effect becomes reduced with increased job stress. More specifically, the relation between job satisfaction and job performance tends to be stronger for employees with low job stress than for employees with high job stress. Likewise, performance is highest of all when high job satisfaction and job stress are low.

Table 1. Correlations between job satisfaction and nursing performance.

		Job Performance	Job Satisfaction
Job Performance	**r**	1	0.540**
	p		0.000
	n	111	111
Job Satisfaction	**r**	0.540**	1
	p		
	n	111	111

** Correlation is significant at the .01 level (2-tailed).

Table 2. Hypothesis (1) and regression results.

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	**Std. Error**	**Beta**		
1	**(Constant)**	2.483	0.139		17.856	<0.001
	Job Satisfaction	0.248	0.037	0.540	6.694	<0.001

a. Dependent Variable: Job Performance, R^2=.291, adjusted R^2=.285, F = 44.810, p=0.000

Table 3. Hypothesis (2) and moderated variable's regression result.

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	**Std. Error**	**Beta**		
1	**(Constant)**	3.398	0.025		13.816	<0.001
	Job Satisfaction	0.177	0.025	0.547	7.154	<0.001
	Job Stress	-0.090	0.025	-0.278	-3.636	<0.001
2	**(Constant)**	3.395	0.023		146.922	<0.001
	Job Satisfaction	0.184	0.023	0.567	7.896	<0.001
	Job Stress	-0.093	0.023	0-.287	-4.003	<0.001
	interact	0.086	0.022	0.287	3.998	<0.001

a. Dependent Variable: Job Performance.

DISCUSSION

Enhancing the efficiency of nursing care delivery for clients is a key issue and big defy for nurses and there are numerous factors that influence nurse job satisfaction and performance in hospitals, including stress, workload, motivation, job satisfaction, and others. However, job stress and job satisfaction in this situation are very important, where nurses are living with the transmitted disease and newly discovered diseases, and there is no study for these variables on nurses in the UAE. The significant findings of this present study reveal that there is a statistically relevant relationship positive relationship between job satisfaction and performance. That's result indicates that if the nursing satisfaction is high the nursing performance will be high among nurses in The Hospital. That's means, if a nurse is more job satisfied, nursing will work harder to attain goals and will work more to provide high-quality nursing care for the patient. The finding also revealed a partial negative moderation effect of job stress on the relationship between job satisfaction and nursing performance, in which high job stress led to decrease nursing performance. finally, if the job satisfaction and performance level are high, must be keep nursing in low job stress, This is an important result if increased job stress will be job performance will be decreased, as well as increased error, poor treatment, mortality, and morbidity. Based on the previous result, if the employees are satisfied and their stress levels are low, this will lead to maintaining levels of performance, productivity, and profit for the company, as well as increased customer satisfaction. As a result, decision-makers must do their best to create an environment and good working conditions that will increase employee job satisfaction, as well as ensure that their employees' stress levels remain low. As a consequence, the personnel's performance may be maintained and even improved.

Nursing is the pillar of the hospital, Nursing is a healthcare profession that focuses on the provision of healthcare services for individuals, families, and communities in order for them to reach, maintain, or enhance their optimal health and quality of life. Nurses are, after all, the most valuable asset in any hospital, thus it is critical that employers take them into account. Hospitals can only do so much with their staff if they understand the reasons for turnover and the factors that influence it. As a result, this may be accomplished through study, assessment, and policy change. 1. Decision-makers in hospitals must define and knows what makes their employees satisfied and alleviate stress by distributing opportunities to all nurses and without threatening job

terminations at all times. 2. Before making any decisions, there should be extensive dialogue and Workers should be allowed to share their opinions on topics that impact them. This will make it easier to fix issues and increase satisfaction. 3. Of those who are responsible, they should be able to distinguish stress elements and potential causes in the environment. 4. Allow time for employees to engage in another activity and spend time with his family. 5. Provide and expand the number of nurses to reduce stress and provide staff time to take on new responsibilities and be innovative in order to improve health care quality. 6. Interventional efforts are advised to boost job fulfilment among nurses through decision making, therapeutic approaches, and relationship skills improvement. Finally, the importance of employee happiness for the organization was to increase staff retention, increase production, raise customer satisfaction and training costs, and so on. There were fewer squanders and breakages, there will be fewer accidents, 43 absenteeism has dropped, loyalty and satisfaction has increased, employees are more engaged. The ability to operate as a team has increased. Higher-quality products and/or services are generated as a result of more knowledgeable and passionate staff. Enhances a company's image. Employee satisfaction, on the other hand, is critical because staff members will start believing that collaboration for the company will be rewarding in the long run, they will be focused on the quality of their job role, they will develop and produce growing patients value and they will be more invested in the institution. Employee satisfaction also benefits patients by improving care quality, decreasing mistakes, minimizing mortality, and reducing disease.

CONCLUSION

The outcomes of this study will certainly serve as a new addition to the reservoir of knowledge, the variation explained by the suggested model in the current study for nurses' performance rate at The Hospital in the United Arab Emirates. Especially that to the author's knowledge, this is the first study to look at the function of job stress as a moderating factor in the link between job satisfaction. According to the current study, job stress acts as a moderator in the association between job satisfaction and performance. As a result, this study provides empirical evidence for the theoretical importance of job satisfaction and job stress in predicting nursing performance among The Hospital nurses.

Furthermore, the new directions of the important results help not just The Hospital but also the local government authorities in the UAE. By incorporating the findings, a number of practical consequences were discovered, including increasing management behavior, job satisfaction, and decreased stress/workload, all of which led to improved job satisfaction and lower workplace stress, hence improving work quality. The important results, particularly the offered recommendations, are intended to aid in the support of The Hospital policy efforts, particularly to improve performance as part of the work at all levels of the hospital.

Nursing is the pillar of the hospital, Nursing is a healthcare profession that focuses on the provision of healthcare services for individuals, families, and communities in order for them to reach, maintain, or enhance their optimal health and quality of life. Nurses are, after all, the most valuable asset in any hospital, thus it is critical that employers take them into account. Hospitals can only do so much with their staff if they understand the reasons for turnover and the factors that influence it. As a result, this may be accomplished through study, assessment, and policy change. Decision-makers in hospitals must define and knows what makes their employees satisfied and alleviate stress by distributing opportunities to all nurses and without threatening job terminations at all times. Provide and expand the number of nurses to reduce stress and provide staff time to take on new responsibilities and be innovative in order to improve health care quality. Interventional efforts are advised to boost job fulfilment among nurses through decision making, therapeutic approaches, and relationship skills improvement.

Finally, the importance of employee satisfaction for the organization was to increase staff retention, increase production, raise customer satisfaction and training costs, and so on. There were fewer squanders and breakages, there will be fewer accidents, absenteeism has dropped, loyalty and satisfaction has increased, and employees are more engaged. The ability to operate as a team has increased. Higher-quality products and/or services are generated as a result of more knowledgeable and passionate staff. Enhances a company's image.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: AMF, MY; **Material, methods and data collection:** AMF; **Data analysis and comments:** NE; **Writing and corrections:** AMF, NE, MY.

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The Role of Tonsils in the Development of Covid-19 Pneumonia

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ABSTRACT

Objective: Despite extensive research, the physiopathology and clinical course of novel coronavirus disease 2019 (COVID-19) is still not fully understood. It is not known why some COVID-19 patients develop pneumonia while others are asymptomatic or have only mild upper respiratory tract symptoms. The tonsils are an element of the immune system that provide first-line defense against microorganisms entering the body via the upper respiratory tract. This study aimed to evaluate the role of tonsils in preventing the development of COVID-19 pneumonia. **Materials and Methods**: The study included 198 patients aged 20-40 years who presented to the pandemic outpatient clinic, had confirmed COVID-19 infection, and had no comorbidities. The relationship between lung involvement and history of tonsillectomy was analyzed. **Results:** Of the 198 patients in the study, 108 were male, 90 were female, and the mean age was 34.7 years. Eighty-three (41.9%) of the patients did not have lung involvement and 115 (58.1%) had lung involvement. Twelve (10.4%) of the patients with lung involvement and 3 (3.6%) of the patients without lung involvement had a history of tonsillectomy. The prevalence of pneumonia did not differ statistically between the groups (p>0.05). **Conclusion**: Although there was no statistically significant relationship between COVID-19 pneumonia and tonsillectomy in this study, we observed that pneumonia developed in 80% of the 15 patients who underwent tonsillectomy. This suggests that greater caution in terms of lung involvement may be warranted for tonsillectomized patients with COVID-19.

Keywords: Tonsillectomy, COVID-19, Pneuomonia, Immunity.

Covid-19 Pnömonisinin Gelişiminde Tonsillerin Rolü

ÖZ

Amaç: COVID-19 hastalığı fizyopatolojisi ve klinik seyri yapılan pek çok bilimsel araştırmaya rağmen henüz tam olarak çözülememiştir. Yeni tip coronavirüs pandemisinde neden bazı hastalarda pnömoni gelişirken, bazı hastalarda sadece üst solunum yolu bulguları ile hatta bazen asemptomatik seyrettiği bilinmemektedir. Bu klinik farklılığın sebeplerinin ortaya konabilmesi için çalışmalara ihtiyaç vardır. Bu çalışmada üst solunum yolu ile vücuda giren mikroorganizmalara karşı ilk savunmayı sağlayan, immün sistemin bir elemanı olan tonsillerin COVID-19 pnömonisi gelişimini önlemedeki rolünün araştırılması amaçlanmıştır.**Gereç ve Yöntem:** Pandemi polikliniğine başvuran, yeni tip koronavirüs ile enfekte, 20-40 yaş arası, ek hastalığı olmayan 198 hasta çalışmaya dahil edildi. Hastaların akciğer tutulumlarının olup olmadığı, tonsillektomi olup olmadığı incelenerek akciğer tutulumu ile tonsillektomi öyküsü arasındaki ilişki değerlendirildi. **Bulgular:** Çalışmaya dahil edilen 198 hastanın 108'i erkek, 90'ı kadın ve yaş ortalaması 34.73 idi. Hastaların 83'ünde akciğer tutulumu bulunmazken, 115'inde akciğer tutulu idi. Akciğer tutulumu olan hastaların 12'sinde tonsillektomi öyküsü mevcut iken, akciğer tutulumu olmayan hastaların 3'ünde tonsillektomi öyküsü mevcuttu. **Sonuç:** Pnomoni gelişmesi ve tonsillektomi arasında istatistiksel olarak anlamlı sonuç bulunamadı (p>0.05), ancak tonsillektomi olan 15 hastanın %80'inde pnömoni gelişirken %20'sinde gelişmediği görüldü. Bu nedenle tonsillektomi öyküsü olan hastalarda COVID-19 enfeksiyonu gelişmesi durumunda akciğer tutulumu açısından daha dikkatli olunmalıdır.

Anahtar Kelimeler: Tonsillektomi, COVID-19, Pnömoni, İmmünite.

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INTRODUCTION

Coronaviruses have an unsegmented, single-stranded, positive-sense RNA genome of approximately 30 kb, giving them the largest known RNA virus genomes. Coronaviruses are common among mammals and birds and cause a range of diseases that affect many organ systems.

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case was encountered in December 2019 in Wuhan city of the Hubei province of China. Since then, COVID-19 has continued to spread, causing a pandemic that continues to the present day. The first case in our country was reported on March 11, 2020.

The clinical presentation of COVID-19 infection ranges from asymptomatic to severe; symptoms usually include fever, myalgia, malaise, cough, and (in moderate to severe cases) shortness of breath. Despite many scientific studies, the physiopathology and clinical course of COVID-19 remains incompletely understood. It is still not known why some patients with COVID-19 develop pneumonia, while others have asymptomatic infection or develop only mild upper respiratory tract symptoms.

The tonsils are members of the Waldeyer ring, which forms the first line of defense against bacteria and viruses that enter the body by inhalation or ingestion (Suzumoto, 2006; Nave et al., 2001). Although the rate varies by country, tonsillectomy is one of the most frequently performed surgical interventions worldwide. The effects of tonsillectomy on immunity are still controversial. While some publications argue that both humoral and cellular immunity are adversely affected after tonsillectomy (Ogra, 1976; Cantani et al., 1986), some argue that it has no negative effects (Zielnik-Jurkiewicz et al., 2002; Kaygusuz et al., 2009). In this study we aimed to investigate the role of tonsils in the development of COVID-19 pneumonia.

MATERIALS AND METHODS

Procedures

The study included 198 patients who presented to the pandemic outpatient clinic and had confirmed COVID-19 infection (positive polymerase chain reaction test for SARS-CoV-2). All of those included in the study were patients between the ages of 20 and 40 without any comorbid diseases. Patients outside the specified age ranges, with any additional disease, and in need of intensive care due to cytokine storm were not included in the study. We determined the patients' age, gender, presence of pulmonary involvement, and tonsillectomy history and evaluated the relationship between lung involvement and history of tonsillectomy (table 1).

Statistical analysis

Statistical analyses were performed using SPSS version 23.0 software. Conformity of the variables to normal distribution was examined using visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk tests). Descriptive analyses were given using mean and standard deviation for normally distributed variables. Categorical data were evaluated with the chi-square test. A p-value less than 0.05 was considered statistically significant (table 2).

Ethical considerations

Ethics committee approval for the study was obtained from Ethics Committee (dated 21/01/2021, number 273).

RESULTS

Of the 198 patients included in the study, 108 were men, 90 were women, and the mean age was 34.7 years. Pulmonary involvement was detected in 115 of the patients, while 83 patients did not have lung involvement. A total of 15 patients had a history of tonsillectomy, 12 of whom had lung involvement and 3 of whom did not have lung involvement. The prevalence of pneumonia was 56.3% among patients with no history of tonsillectomy, compared to 80% among patients with a history of tonsillectomy. Although pneumonia tended to occur more often in patients with a history of tonsillectomy, the relationship did not show statistical significance in the chi-square test ($p>0.05$).

Table 1. Basic demographic and clinical characteristics of the patients.

		n	%
Gender	Male	108	54.55
	Female	90	45.45
Pneumonia	No	83	41.92
	Yes	115	58.08
Tonsillectomy	No	183	92.42
	Yes	15	7.58
Age Mean±SD		34.73±7.20	36.00

SD=Standard deviation.

Table 2. Comparison of COVID-19 pneumonia prevalence according to tonsillectomy history.

		Tonsillectomy				*p
		No		Yes		
		n	%	n	%	
Pneumonia	No	80	43.72	3	20.00	0.074
	Yes	103	56.28	12	80.00	

*Chi-Square test.

DISCUSSION

Tonsillectomy is one of the most common surgical interventions worldwide, although its frequency varies from country to country and even in different regions of the same country. In the United States, one-third of all surgical interventions performed in the 1930s were tonsillectomies, and in England 50-75% of children had their tonsils removed (Rosenfeld, 1990).

In Finland, the frequency of adenoidectomy in childhood has been reported as 24%, and the frequency of tonsillectomy has been reported as 8% (Mattila, 2001). A study conducted in Turkey demonstrated relatively low rates of tonsillectomy (4.9%), adenoidectomy (2.7%), and adenotonsillectomy (2.1%) compared to the literature. In our study, 15 of 198 patients (7.6%) had a history of tonsillectomy. The palatine tonsils are located in the oropharynx, which is the common entry site of the gastrointestinal and respiratory tracts. Thanks to this important position, they are one of the lymphoid organs that provide the first immune response against antigens that enter the body through the mouth and nose. Waldeyer first described the Waldeyer ring formed by the nasopharyngeal adenoid tissue, palatine tonsils, and lingual tonsils in 1884, and the main component of this ring is the palatine tonsils (Nave et al., 2001). There are various studies in the literature on the effects of tonsillectomy on the immune system, but these studies have yielded conflicting results. Böch et al. followed tonsillectomized patients for a mean of 6.6±2.1 years and reported that while the overall infection frequency did not increase, immunoglobulin A levels in tonsillectomized patients were significantly lower while immunoglobulin M and G levels did not change (Böch et al., 1994). Byars et al. evaluated the follow-up of children who underwent tonsillectomy at age 0-9 years until the age of 30 years and found that there was an approximately three-fold increase in upper respiratory tract infections and a 17% increase in infectious diseases (Byars et al., 2018). Kaygusuz et al. evaluated humoral and cellular immune parameters in 54 patients with tonsillectomy at postoperative 1 month and 54 months and reported that these parameters were normal in the long term after tonsillectomy, with no differences from a control group in the same age range (Kaygusuz et al., 2009). Yan et al. evaluated serum complement and immunoglobulin levels at postoperative 1 and 3 months to evaluate the effect of tonsillectomy on immunity in children under the age of 3 years. They reported that immunoglobulin A levels decreased in the early period but improved later, with no increase in the frequency of infection (Yan, 2019). Johansson and Hultcrantz compared 18 tonsillectomized patients at a mean of 20 years after tonsillectomy with age-matched non-tonsillectomized patients and observed no difference between the two groups in lower respiratory tract or other infectious diseases. They noted that the prevalence of chronic diseases was higher in patients with tonsillectomy, but they did not evaluate this as significant due to the small sample size (Johansson & Hultcrantz, 2003). In another cohort study, no increase was found in the frequency of acute upper respiratory tract infections in patients with tonsillectomy, but an increase in the frequency of asthma was reported (Song et al., 2021).

In our study, there was no significant difference in tonsillectomy rate between patients who developed COVID-19 pneumonia and those who did not, but the rate of pneumonia was higher in tonsillectomized patients. As in Johansson and Hultcrantz's study, the number of tonsillectomized patients in our study was small. Larger study groups may provide more meaningful results. The symptoms of COVID-19 range from asymptomatic disease to acute respiratory distress syndrome and multiorgan failure, which can end in death. It remains a mystery why the disease has such a wide spectrum of symptoms. The lungs are the most damaged organs, and the presence of pulmonary involvement is one of the main parameters used to define COVID-19 clinical severity. Various rates of lung involvement have been reported in the literature, including 43.7% in a study by Ozdemir et al. and 86.2% in a study by Guan et al. In our study, the prevalence of lung involvement was 58.1% overall, 56.6% in non-tonsillectomized patients, and 80% in tonsillectomized patients. Although the difference was not statistically significant, the rate of pneumonia development was higher in the tonsillectomy group. Studies on the localization of the sars cov-2 virus in the tonsils have also shown the presence of the virus in the tonsils of COVID-19 patients. Xu et al, in their study, using samples from 110 children undergoing tonsillectomy and adenoidectomy during the COVID-19 pandemic, they identified 24 samples with evidence of previous SARS-CoV-2 infection, and their results provide evidence for persistent tissue-specific immunity to SARS-CoV-2 in the upper respiratory tract of children after infection (Xu et al., 2022). Tan et al; concluded the tonsils are a secondary lymphoid organ that develop germinal center responses to SARS-CoV-2 infection and could play a role in the long-term development of immunity (Tan et al., 2022). These studies also report that the tonsils are among the organs that are effective in COVID-19 immunity, and they support the explanation of the high rate of pneumonia in patients with tonsillectomy in our study. In our literature search, we found two other studies on the clinical course of COVID-19 disease in tonsillectomized patients. In a study by Doblan and Doblan, no statistically significant difference was found between COVID-19 patients with and without a history of tonsillectomy in terms of age, gender, body mass index, comorbid diseases, or length of hospital stay, whereas the prevalence of symptomatic infection was significantly higher among tonsillectomized patients compared to non-tonsillectomized patients (Doblan, 2021). In addition, a multicenter study by Capriotti et al. evaluated whether there was a difference in symptoms in 779 COVID-19 patients with and without a history of tonsillectomy. While fever, chills, and fatigue were significantly more frequent in tonsillectomized patients, no difference was found

between the two groups in terms of length of hospital stay (Capriotti, 2021). Neither study provided information regarding the development of pneumonia, and to the best of our knowledge, our study is the first in the literature to evaluate this difference.

CONCLUSION

Although there was no statistically significant difference in the development of pneumonia based on tonsillectomy history, we observed that pneumonia developed in 80% of patients who underwent tonsillectomy compared to 56.3% of patients with no history of tonsillectomy. Therefore, greater caution in terms of lung involvement may be warranted for tonsillectomized patients with Covid-19.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: SBÇ, İÖ; **Material, methods and data collection:** MA, AK; **Data analysis and comments:** YK; **Writing and corrections:** SBÇ, İÖ.

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Nursing Students' Evaluation of the Omaha Care System

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ABSTRACT
Objective: The aim of the study is to determine the change in the level of care plan after the education of nursing students related to the Omaha classification system and to reveal their views on the Omaha care system. **Materials and Methods:** This research covers the qualitative part of a mixed-method intervention study. Students from the Faculty of Health Sciences, School of Higher Education, Bursa Uludağ University were interviewed for the study between June and July 2019. The population of the study consisted of 153 students taking public health nursing courses at Bursa Faculty of Health Sciences, Faculty of Health Sciences, and 52 students who agreed to participate in the study were sampled. Numbers, percentages, and a Wilcoxon sign test analysis were utilized to examine the data in the SPSS 23.0 program. To evaluate qualitative data, thematic analysis was employed. **Results:** The Omaha system total score ($p<0.001$), problem classification score ($p<0.001$), intervention scheme score ($p=0.016$), and problem assessment scale score ($p=0.006$) of the students after the training were higher and statistically significant compared to their pre-training scores ($p=0.05$). 95.3% of the students evaluated the Omaha system as a difficult, complex, time-consuming, different, important, professional system that allows evaluation of each stage and questioning of causality; while 4.7% of the students evaluated it as a system that they could not understand at all. **Conclusion:** As a result of the study, students' knowledge levels increased after the training.
Keywords: Omaha Care System, Nursing, Student, Public Health.

Hemşirelik Öğrencilerinin Omaha Bakım Sistemini Değerlendirmesi

ÖZ
Amaç: Çalışmanın amacı hemşirelik öğrencilerinin Omaha sınıflama sistemi ile ilişkili eğitimi sonrasında bakım planı bilgi düzeyindeki değişimi tespit ederek Omaha bakım sistemine ilişkin görüşlerini ortaya koymaktır. **Gereç ve Yöntem:** Bu araştırma karma yöntem ile yapılmış bir müdahale çalışmasının nitel bölümünü kapsamaktadır. Araştırma Haziran-Temmuz 2019 tarihleri arasında Bursa Uludağ Üniversitesi Sağlık Bilimleri Fakültesi öğrencileriyle görüşülerek yürütülmüştür. Araştırmanın evreni Bursa Uludağ Üniversitesi Sağlık Bilimleri Fakültesinde halk sağlığı hemşireliği dersi alan 153 öğrenciden oluşmaktadır. Araştırma sırasında evrenin tümüne ulaşılmaya çalışılarak, araştırmaya katılmayı kabul eden 52 öğrenci örneklemi oluşturmuştur. Veriler SPSS 23.0 programında çözümlenmiş; verilerin çözümlenmesinde sayı, yüzdeler, Wilcoxon işaret testi analizi kullanılmıştır. Nitel verilerin analizinde tematik analiz kullanılmıştır. **Bulgular:** Eğitim sonrası öğrencilerin Omaha sistemi toplam puanı ($p<0.001$) , problem sınıflama puanı ($p<0.001$), girişim şeması puanı ($p=0.016$), problem değerlendirme ölçeği puanı ($p=0.006$) eğitim öncesi puanlarına göre daha yüksek ve istatistiksel olarak anlamlı olduğu saptanmıştır ($p=0.05$). Öğrencilerin %95.3'ü Omaha sistemini zor, karmaşık, zaman alıcı, farklı, önemli, her aşamasında değerlendirme yapılabilmesine ve nedenselliğin sorgulanmasına olanak sağlayan profesyonel bir sistem olarak değerlendirirken; %4.7'si ise hiç anlayamayacakları bir sistem olarak değerlendirmiştir. **Sonuç:** Çalışma sonucunda öğrencilerin eğitim sonrası bilgi düzeyleri artmıştır.
Anahtar Kelimeler: Omaha Bakım Sistemi, Hemşirelik, Öğrenci, Halk Sağlığı.

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INTRODUCTION

Nursing is an applied science with its own principles and notions (Körpe et al., 2019). With the advancement of technology and globalization, nursing practices are evolving and becoming more professional. A unique classification system must be developed and put into place for nursing practices to be of the same caliber and intelligible throughout the world (İskender and Kaplan, 2019). By establishing a common language, it clarifies the outcomes of care, demonstrates the standard of care, standardizes, and professionalizes nursing practices, improves the objectivity of practices, and offers information management (Erdoğan et al., 2016; Karahan and Erdoğan, 2019; Önder, 2019). This consistent and trustworthy recording method is aided the universalization of the profession (Kulakçı and Emiroğlu, 2012). Which also enhances communication between nurses and other healthcare professionals (İskender and Kaplan, 2019). The American Nurses Association has identified 12 classification systems worldwide. One of these is the Omaha classification system (İskender and Kaplan, 2019; Körpe et al., 2019). This system has been in use since 1975 (İskender and Kaplan, 2019; Korkmaz Aslan and Emiroğlu, 2012), and its validity-reliability has been shown. The Omaha classification system was developed by the North American Visiting Nurses Association within the framework of Neuman's "Systems Model", Dreyfus' "Skill Development Model" and Donabedian's "Health Care Quality Model" in line with the problem-solving approach (Mutluay and Özdemir, 2014; Yılmaz et al., 2018). This system, which is used in 26 states of the United States of America, has been translated into the languages of Denmark, the Netherlands, Japan, China, Sweden, Korea, Slovenia, Spain, Turkey, Canada, Estonia, and Thailand, and used in the field of nursing and the education of students in various cultures (Öztürk, 2011). In addition to the nursing discipline, the Omaha system is also used by physicians, dieticians, pharmacists, public/community health workers, social workers, physiotherapists, speech and language therapists, and other health care professionals. The Omaha system is frequently used both electronically and manually in the documentation of services in many areas such as home care services, nursing centers, nursing schools, and school health programs, especially in community health areas (Erdoğan et al., 2016; Korkmaz Aslan and Emiroğlu, 2012). In our country, there are examples of the use of the system in home care, primary health care institutions, long-term elderly care, discharge planning, acute care, occupational health, and school health (Seçginli et al., 2014). The system is a comprehensive, valid, and reliable health care system that is frequently used in many areas and consists of the stages of investigating the health status of the individual, family, or community and determining the problems, if any; if not, increasing their health status, planning and implementing care interventions appropriate to this problem or situation and evaluating the results of care (Coşansu, et al., 2014). It defines health problems, interventions for problems, and the results of the care applied in line with the interventions with simple codes and provide a very suitable infrastructure for nurses in the documentation of the health services provided (Kaya, 2019).

Although the Omaha classification system is increasingly known and used worldwide, there are not many studies on its use in our country. The Omaha classification system was first adapted into Turkish by Erdoğan and Esin (2004) and took its place in the national literature. Afterward, studies on its use in various fields have been put forward in terms of its use as a classification system. Studies have shown that it is effective in early diagnosis, health protection, and development (Coşansu et al., 2014; Karahan and Erdoğan, 2019; Kaya, 2019; Kulakçı and Emiroğlu, 2012; Önder, 2019; Öztürk, 2011; Seçginli et al., 2014; Yılmaz, et al., 2018).

In our study, its use in the field of school health was addressed. Our aim in the study was to determine the change in the Omaha care plan knowledge level of the students after the training related to the Omaha classification system. Another aim of this study is to determine the views of nursing students on the Omaha system used in school health practice. In addition, this study aims to make a scientific contribution to the national literature. It is thought that the data to be obtained from the study will contribute to the education of students in addition to contributing to the national literature.

MATERIALS AND METHODS

Type of research

This research covers the qualitative part of a mixed-method intervention study.

Population and sample of the study

The population of the study consisted of the students of the public health nursing course in the spring semester of the 2018-2019 academic year, studying in the nursing department of Bursa Uludağ University Faculty of Health Sciences (n=153). The sample consisted of volunteer students who agreed to participate in the study and expressed that they had difficulty learning the Omaha system (n=52). The pre-test of the study was conducted with 52 students on June 17, 2019, and the post-test was conducted with 49 students after the students left the study 1 month after the training, and the data collection phase of the study was completed. Training is given at the end of the pre-test.

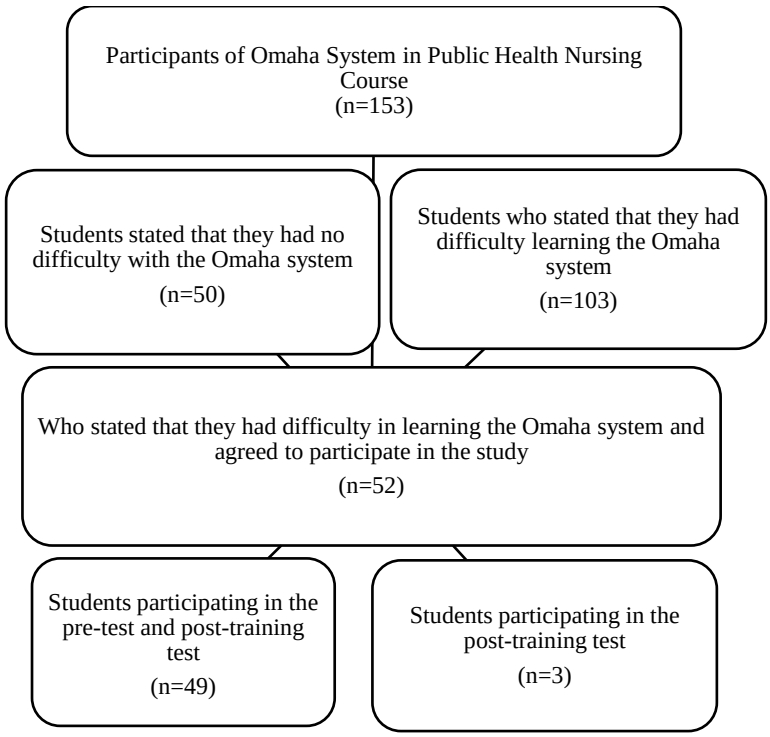

Figure 1. Flowchart.

Data collection tools

The research data were collected using the "Sociodemographic Data Form and Omaha System Information Form.

Sociodemographic Data Form: It was prepared by the researchers and included the questions of age, gender, and general academic grade point average (GPA) of the students.

Omaha System Information Form: It consists of 54 questions measuring the ability to use the components of the Omaha system.

Omaha System Learning Process Evaluation Form: It consists of 3 open-ended questions about the students' thoughts about the Omaha system, the techniques of learning the Omaha system, and the materials they used.

Research implementation process

Administering the Pre-Test

The students who stated they did not comprehend the Omaha system as it was explained in the public health nursing course and who consented to participate in the study and whose consent was obtained underwent the Omaha System Knowledge Test (pre-test). Additionally, a Socio-demographic Questionnaire was given to them (Omaha system Knowledge test First measurement).

Theoretical Education

The students who accepted to take part in the study were informed of the location and timing of the 135-minute session. With the aid of case studies, the Omaha system and its components were described (45 minutes). Students were instructed to create a care plan after receiving a case (45 minutes). The researcher then created the care plan in the classroom (45 minutes). It took 135 minutes in total to finish.

Implementation of the Final Test

One month after the implementation, the Omaha System Knowledge test (post-test) and Omaha System Learning Process Evaluation Form were applied. (Omaha System Knowledge test second measurement)

Data analysis

The statistical data analysis was performed using the Statistical Package for Social Sciences 23.0 statistical package program. The distribution of data was tested using the Shapiro–Wilk test. Also, descriptive statistical tests (mean, standard deviation, frequency, and percentage) and analytical statistics (Dependent-Samples T-Test, Pearson Correlation Test) were used. She was not aware of the allocation of students to the groups. The significance level was considered $p < 0.05$.

Qualitative data were evaluated by thematically categorizing the answers given by the students to the open-ended questions about their thoughts about the Omaha system, the techniques of learning the Omaha system, and the materials they used with the "Omaha System Learning Process Evaluation Form" and creating sub-themes. In the analysis of the data, experts in the field of public health nursing made separate evaluations and agreed on the classification of the data within the thematic grouping (Braun and Clarke, 2006).

Ethical consideration

Ethics committee permission dated May 29, 2019 and numbered 2019-6/18 was obtained from Bursa Uludağ University Health Research and Publication Ethics Committee for this study. Verbal consent was obtained from the students participating in the study.

RESULTS

The mean age of the students was 20.93±0.82 years, GPA was 2.92±0.46, 95.9% were female and 73.5% were graduates of Regular High School (Table 1).

Pre-test problem classification list score of female students (p=0.003); pre-test problem evaluation scale score (p<0.001) and pre-test total score (p=0.032) were higher than male students. Post-test initiative scheme score of male students is higher than female students (p=0.035). Pre-test problem evaluation scale score is higher in health high school students than regular high school student.

Table 1. Distribution of descriptive characteristics of students.

Characteristics	Mean±SD	n(49)	%
Age	20.93±0.82		
GPA	2.92±0.46		
Pre-test			
Problem Classification List Score	21.31±6.42		
Initiative Scheme	10.51±4.34		
Problem Evaluation Scale	2.51±1.21		
Total Score	34.33±10.42		
Post-test			
Problem Classification List Score	25.78±3.69		
Initiative Scheme	12.24±2.43		
Problem Evaluation Scale	3.10±1.27		
Total Score	41.18±5.44		
Gender			
Female		47	95.9
Male		2	4.1
School graduated from			
Health High School		13	26.5
Regular High School		36	73.5

Table 2. Distribution of the analysis of the descriptive characteristics of students with dependent variables.

Variables				
	Gender		**Test**	**p**
	Female	**Male**		
Pre-test Problem Classification List Score	47	2	3.134*	**0.003**
Pre-test Problem Evaluation Scale	47	2	9.046	**<0.001**
Pre-test Total Score	47	2	2.206	**0.032**
Post-test Initiative Scheme	47	2	2.173	**0.035**
	School graduated from			
	Health high school	**Regular high school**		
Pre-test Problem Evaluation Scale	13	36	2.659	**0.011**
GPA				
Pre-test Initiative Scheme				**r=0.319* p=0.025**
Pre-test Problem Classification List Score				**r=0.296* p=0.039**
Pre-test Problem Evaluation Scale				**r=0.488** p<0.001**
Pre-test Total Score				**r=0.371** p=0.009**
Post-test Problem Classification List Score				**r=0.416** p=0.007**
Post-test Total Score				**r=0.343* p=0.016**

**Pearson correlation.

A positive and significant relationship was found between the students' GPA score and pre-test initiative scheme score, pre-test problem evaluation scale score, pre-test total score, post-test problem classification list score, and post-test total scores ($p<0.05$) (Table 2).

Table 3. Distribution of students' scores before and after the training.

	Min-Max	Pre-test Mean±SD	Post-test Mean±SD	t	p
Problem Classification List Score	0-33	21.31±6.42	25.78±3.69	4.818	**<0.001**
Initiative Scheme	0-15	10.51±4.34	12.24±2.43	2.488	**0.016**
Problem Evaluation Scale	0-6	2.51±1.21	3.10±1.27	2.873	**0.006**
Total Score	0-54	34.33±10.42	41.18±5.44	4.593	**<0.001**

It was observed that the Omaha system total score ($p<0.001$), problem classification score ($p<0.001$), initiative scheme score ($p=0.016$), and problem evaluation scale score ($p=0.006$) of the post-training students were higher and statistically significant compared to their pre-training scores (Table 3).

What Do Students Think About the Omaha System?

The majority of the students defined the Omaha care system, which nursing students used in data collection and implementation of care plans during school health nursing practice, as a difficult, complex, time-consuming, different but important professional system.

"I met the Omaha care system in school health practice, it is different from the one I use in the clinic, it requires me to place my symptom findings under their components, to create a problem assessment scale, and to determine information, behavior, and situation, it requires me to constantly research and I have a lot of difficulty in doing so (P, 33)".

While some of the students found it fun, they emphasized that it was time-consuming to be manual, to define the case correctly to Omaha components, and to create problem evaluation scales.

"It is fun, but it is tiring and time-consuming to create the problem evaluation scales manually, it could be simpler if there was a computer system (P, 16)".

Some of the students evaluated it as a system that they could not understand.

"It would be better if it was not a system that I could not understand (P, 5)".

Some of the students stated that it should be made widespread because it allows each stage to be evaluated and causality to be questioned.

"While applying the problem I have determined in the Omaha system, I measure knowledge, behavior, and attitude at every stage, I proceed according to the existing cause, I re-evaluate as I progress, and I
make my interventions accordingly, I think it is very professional and dynamic (P, 27)".

The working methods used by the students to understand the Omaha system, which they encountered for the first time, were writing, reading, explaining it to others

"I encounter Omaha for the first time, there are components I don't know, and I have to learn them. To learn, I read, write, try to put it in place in the case (P, 21)".

While studying, students benefited from the textbook, lecture slides, website, articles, and advisor.

"To learn Omaha, I look at the slide in the lecture, I try to find the online system on the internet, I consult my advisor (P, 41)".

DISCUSSION

This study aimed to evaluate the students' post-Omaha system training scores on the overall Omaha scale, the problem classification scale, the initiative schema scale, and the problem evaluation scale. The students' post-training scores improved above their pre-training scores for the Omaha total score, problem classification score, initiative schema score, and problem evaluation scale score. According to studies that are comparable to this one, knowledge and skills improved as a result of quasi-experimental educational interventions in a variety of fields (Arslan et al. 2016; Çelikkalp et al., 2017; Jung, Park, Min and Ji, 2020; Kim et al., 2019; Seo and Cho, 2021; Shamsaee et al., 2021; Yılmaz and Özbek Güven, 2022). In our survey, 42.50% of the participants said they read about the Omaha system, while 37.50% said they used lecture notes or presentations to learn. Similar to our study, Turan's study from 2022, "Perceptions of Nursing Students Taking Pediatric Health and Diseases Nursing Course on Concept Map: A Metaphor Study," found that 47.17% of the students benefited from lecture notes and 79.24% of the students studied by writing. In the parts of our study where qualitative data were presented, students' opinions about the Omaha system after the training were evaluated. In similar studies in the literature, students stated that the Omaha system is inclusive, simple, and successful in questioning causality and should be expanded (Yılmaz et al., 2018).

Similar to our study, Radhakrishnan et al., (2016) study revealed similar results in both quantitative and qualitative evaluations. As a result, in light of our study, we contributed to the participants and the literature by increasing the level of knowledge of the students about the Omaha system and improving their ability to use the system. Therefore, it is appropriate to use the Omaha system as an active educational tool for public health and the training of public health nurses (Eardley et al., 2018; Erdoğan and Esin, 2004; Erdoğan et al., 2013; Radhakrishnan et al., 2016; Zhang et al., 2021).

Studies on the Omaha system in our country and various countries have often been carried out by trying to fix the system in various areas, and in light of the results; it has been revealed that it is inclusive in school health, community health, and nursing care services and provides systematic evaluations (Ateş and Ulus, 2019; Aylaz, et al., 2010; Coşansu et al., 2014; Erdoğan et al., 2013; Karahan and Erdoğan, 2019; Kaya, 2019; Köseoğlu et al., 2019; Kulakçı and Emiroğlu, 2012; Önder, 2019; Öztürk, 2011; Seçginli et al., 2014; Yılmaz, Özden and Gürol Arslan, 2018).

Limitations of the Study

This study shows the results of a sample of university students. The small sample size of this study limits its generalization. Even if many aspects of the system are expressed with the research, it is recommended to deepen and diversify with experimental studies to fully reveal and explore the potential.

CONCLUSION

The students' post-training scores improved above their pre-training scores for the Omaha total score, problem classification score, initiative schema score, and problem evaluation scale score. The Omaha method was rated by some students as a challenging, time-consuming, unique, significant, professional system that allowed review of each stage and causality inquiry, while it was rated negatively by others.

The students employed writing, reading, explaining it to others, and practicing it as study techniques to comprehend the Omaha system. Students benefited from the textbook, lecture slides, website, articles, and advisor while studying.

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Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: AO, SY; **Material, methods and data collection:** AO, SY; **Data analysis and comments:** AO, EU; **Writing and corrections:** AO, SY, EU.

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Effective Speaking Skills and Coping Attitudes of Pediatric Nurses

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ABSTRACT
Objective: This descriptive and cross-sectional study was carried out to analyse the effective speaking skills and coping attitudes of pediatric nurses. **Materials and Methods**: The population of the study consists of 251 nurses working in pediatric clinics of two hospitals in the eastern region of Turkey. The data in the study were collected with Descriptive Information Form, Effective Speech Skills Scale and Coping Attitudes Assessment Scale. **Results**: It was found that pediatric nurses had a mean effective speech scale total score of 50.96±16.92 and a mean coping scale total score of 157.75±26.69. Positive significant association was found between mean effective speech scale sub-dimension scores and total scores and between mean coping attitude scale sub-dimension scores and total scores. **Conclusions:** It was found that descriptive characteristics of pediatric nurses such as age, years of working as a nurse and weekly working hours were effective on their effective speech skills and coping attitudes. Effective speech skills of pediatric nurses were moderate. It was found that nurses used their coping attitudes effectively as their effective speech skills developed.
Keywords: Coping Attitudes, Effective Speech Skills, Pediatric Nurse.

Pediatri Hemşirelerinin Etkili Konuşma Becerileri ve Başa Çıkma Tutumları

ÖZ
Amaç: Tanımlayıcı ve kesitsel tipteki araştırma, pediatri hemşirelerinin etkili konuşma becerileri ve başa çıkma tutumunu incelemek amacı ile yapılmıştır. **Gereç ve Yöntem:** Çalışmanın evrenini Türkiye'nin doğusunda bulunan iki hastanesinin çocuk kliniklerinde çalışan 251 hemşire oluşturmuştur. Araştırma verileri Tanıtıcı Bilgi Formu, Etkili Konuşma Ölçeği ve Başa Çıkma Tutumları Değerlendirme Ölçeği kullanılarak elde edilmiştir. **Bulgular:** Pediatri hemşirelerin etkili konuşma ölçeği puan toplam ortalaması 50.96±16.92 ve başa çıkma ölçeği toplam puan ortalaması 157.75±26.69 olduğu bulunmuştur Etkili konuşma ölçeği alt boyutları ve toplam puan ortalaması ile baş çıkma ölçeği alt boyutları ve toplam puan ortalaması arasında pozitif yönde anlamlı bir ilişki olduğu saptanmıştır. **Sonuç:** Pediatri hemşirelerin yaşı, hemşire olarak görev yaptığı yıl ve haftalık çalışma saati gibi tanıtıcı özellikleri etkili konuşma becerilerinde ve başa çıkma tutumlarında etkili olduğu bulunmuştur. Pediatri hemşirelerini etkili konuşma becerilerinin orta düzeyde olduğu saptanmıştır. Etkili konuşma becerileri geliştikçe başa çıkma tutumlarını etkili kullandıkları belirlenmiştir.
Anahtar Kelimeler: Etkili Konuşma, Başa Çıkma Tutumu, Pediatri Hemşiresi.

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INTRODUCTION

As a being that affects the environment and that is affected by the environment, a human constantly communicates with the environment to meet emotional and physical needs (Kumcagiz et al., 2011). Communication is an individual and social tool that enables humans to convey their feelings, thoughts and experiences. Humans understand each other correctly, contact each other and shop through communication (Dilekman et al., 2008; Kumcagiz et al., 2011; Sahin and Ozdemir, 2015). In addition, human beings, who are social creatures, need to communicate in order to understand the social world, affect individuals around them and express themselves (Karadag et al., 2015). It is important for humans to have effective speech skill while performing the communication activity that is so important for them (Yildiz and Yavuz, 2012).

Effective speech is the harmony of physical and mental elements of speech (Yildiz and Yavuz, 2012). Grammar rules, social structure of language and discourse competence should be together in effective speech. Individuals who speak effectively communicate with a style that is self-confident, that assures the other person, uses body language well, has a good command on the subject they are talking about (Yildiz and Yavuz, 2012)

Nursing is a profession which requires continuous communication and interaction with both sick/healthy individuals and other team members (Karadag et al., 2015; Kumcagiz et al., 2011). The nurse should communicate effectively with the sick/healthy individual in the process of knowing the individual with a holistic approach, finding out the needs, providing an effective care and evaluating the care given. The most important condition to achieve this is for the nurse to have effective speech skill (Kumcagiz et al., 2011; Kucukoglu et al., 2018; Sahin and Ozdemir, 2015). In interpersonal relations theory, the nursing theorist Peplau stated that it was important for the nurse to develop "therapeutic nurse-patient relationship" to help people. A lot of nurses have stated that problems can be solved with human relationships (Pektekin, 2013). In the interpersonal communication theory, Travelbee stated that it is important for communication to get deeper and become human-to-human so that nurses, individuals, families or the society can deal with or prevent the disease. Travelbee also stated that nurses should use "human-to-human relationship" in helping individuals and alleviating their distress or pain (Travelbee, 1971).

Having effective speech skill is a characteristic that especially pediatric nurses should have as much as nurses working in all fields. Pediatric nurses have the responsibility to meet the health care needs of sick or healthy children between the ages of 0 and 18 and to help them deal with their problems (Ozakar and Gozen, 2013). In order to fulfil this responsibility, pediatric nurses communicate with the family and the child and communicate and interact with them during the process of understanding them, knowing their feelings and thought, planning, applying and evaluating their care together. The stronger and more effective this communication is, the more effective will be the care given by the nurse (Ozturk and Dijle, 2014). Studies conducted found that nurses increased patients' life quality, well-being, compliance with treatment, motivation to get well and patient satisfaction through effective communication skill (Kumcagiz et al., 2011; Kucukoglu et al.,2018; Sahin and Ozdemir, 2015). In a study conducted in our country, Kucukoglu et al. found that pediatric nurses had good effective speech skills (Kucukoglu et al., 2018). Effective communication skills can be affected by many characteristics of nurses. These are factors such as age, level of education, upbringing, working environment and level of stress (Karakas and Koc, 2014; Ozturk and Dijle, 2014). Stress is expressed as tension and strain that have a negative effect on the individual physically, mentally, socially and cognitively, resulting from the internal or external environment of the individual (Pargament, 2001). Studies conducted show that pediatric nurses experience stressful events due to many stressful reasons such as too much workload, low number of nurses, lack of personnel and material, having too much responsibility and working overtime (Cam and Buyukbayram, 2017; Ozturk et al., 2015). In the study of Demir Acar and Bulut, it was found that the communication-related problems of nurses and the difficulties brought by the workload negatively affected their motivatin (Demir Acar and Bulut, 2021). A nurse's having high stress management skill can have a positive effect on the communication with the family and the team as much as the sick child (Garli, 2018). For this reason, it is important for pediatric nurses to use effective coping techniques for stress management. Coping is defined as responding cognitively, emotionally and behaviourally in order to eliminate and control the needs and difficulties created by the person in his/her inner and outer world (Karakas and Koc, 2014). Coping attitudes vary depending on many factors such as the individual's upbringing style, parental attitudes, age, gender, education and cultural factors (Konkan et al., 2014). Individuals can use active or passive coping attitudes while coping with a problem. Active or problem focused coping attitude is defined as an adaptive, protective and developing behavioral or spiritual response that aims the stressor to be changed or eliminated by the individual. Passive or emotion focused coping is in the form of avoiding the stressors, and showing behavior that disrupts adaptation and prevents protection and development (Agargun et al.2005; Karakas and Koc, 2014). If coping attitude is used to solve problems, it is more adaptive, protective and developing. However, if it is emotion focused, it can disrupt harmony, prevent

protection and development (Sengul and Baykan, 2013).

In literature, it has been found that nurses use coping skills such as turning to religion, active planning, seeking outside help, avoidance and abstraction when confronted with a stressful event (Singh and Kohli, 2015). It is stated that nurses' using coping attitude positively increases the quality of nursing care, increases pscyhological resilience, decreases stress levels and is important in providing pscyhological first aid support to people experiencing negative situations such as disasters. In their study, Boga et al. stated that nurses' using coping mechanism effectively increases nursing care (Boga et al., 2019). Effective speech skill can affect pediatric nurses' coping attitude and stress management positively. However, this topic has not been researched in literature. This study was conducted to examine the effective speech skills and coping attitudes of pediatric nurses.

MATERIALS AND METHODS

Study type

This study was conducted as a descriptive study.

Study group

It was carried out with nurses working in neonatal intensive care, pediatric intensive care, pediatric emergency and other pediatric services of two hospitals, one university hospital and one state hospital, in the Eastern Anatolia region of Turkey between May and July 2020. The participants were informed about the aim of the study and their written and verbal consents were taken. Improbable sampling method was used in the study. 251 nurses who were working between the dates the study was conducted in and who agreed to participate in the study were included in the study. 5 nurses who did not agree to participate in the study and 9 nurses who were on leave were not included in the study.

Data collection

Descriptive Information Form: It consists of 9 questions such as nurses' age, marital status, hospital worked in, time worked as a nurse and level of education.

The Effective Speech Scale: The scale was developed in 2012 by Yildiz and Yavuz to find out the effective speech characteristics of individuals (Yildiz and Yavuz, 2012). The Likert type scale consists of 5 sub-dimensions as presentation (7 questions), sound (4 questions), style and statement (5 questions), focusing on speaking (4 questions) and paying attention to listeners (4 questions). One can get at least 1 point and at most 5 points from each item of the scale. In the scale, 20 items have positive statements and 4 have negative statements. The negative statements of the scale are reversely coded. One can get at least 24 points and at most 120 points from the scale. A high score from the scale shows high effective speech skill. Internal consistency Cronbach alpha value of the scale is 0.92, while it was found as 0.93 in our study.

COPE Scale: The scale was developed in 1989 by Carver et al. and its Turkish validity study was conducted in 2005 by Agargun et al. (Agargun, et al., 2005; Carver, Scheier, and Weintraub, 1989). The Likert type scale consists of 60 questions. The scale has 15 sub-dimensions as positive reinterpretation and growth (1-4), mental disengagement (5-8), focus on and venting emotions (9-12), instrumental social support (13-16), active-coping (17-20), denial (21-24), turning to religion (25-28), humor (29-32), behavioral disengagement (33-36), restraint (37-40), emotional social support (41-44), substance use (45-48), acceptance (49-52), suppression of competing activities (53- 56) and planning (57-60). Whichever of the sub-dimensions the individual gets a high score from, it means that the individual uses that coping attitude. Agargun et al. calculated the Cronbach alpha value of the scale as 0.79. In the present study, Cronbach alpha value of the scale was found as 0.94.

Statistical analysis

SSPS 22 program was used in data analysis with percentage, mean, standard deviation, independent groups t test, one way ANOVA, Pearson correlation analysis and advanced analysis of Bonferroni**.** Shapiro Wilk normality test was used to calculate the normality distribution of the data. The data were found to be normally distributed in the study ($p> 0.05$). $p<0.05$ was considered to be statistically significant in the study.

Ethical considerations

Before the study was started, written permissions were obtained from the nurses were to be included in the study's sample. Written approval was obtained from the author's Firat University Non-interventional Researches Ethics Committee (Approval no/date: 380996/2020).

RESULTS

It was found 46.2% of the nurses were between 20 and 38 years of age, 60.2% were married, 55.8% worked in pediatric service and 56.6% had children (Table 1).

Table 2 shows the descriptive characteristics of the nurses and their mean effective speech total scale and sub-dimension scores. The difference between nurses' age and mean presentation, sound, style and statement sub-dimension and total scale scores were found to be statistically significant. It was found that the difference between nurses' marital status and their mean style and statement level, the service nurses worked in, and their presentation mean scores and level of education and mean focusing on speaking scores was significant. It was found that the difference between the years nurses worked and weekly working hours and mean presentation, style and statement and sound sub-dimensions and total scores was statistically significant ($p<0.05$).

The difference between nurses' state of having children and mean effective speech scale total and sub-dimensions scores was not found to be statistically significant (Table 2, p>0.05

Table 1. The distribution of nurses' descriptive characteristics (n=251).

Descriptive characteristic	n	%
Age (year)		
20-28	116	46.2
29-37	54	21.5
38 and over	81	32.3
Marital status		
Married	151	60.2
Single	100	39.8
Have children		
Yes	142	56.6
No	109	43.4
Hospital		
State	126	50.2
University	125	49.8
Service		
Neonatal intensive care unit	43	17.1
Pediatric service	140	55.8
Pediatric emergency	44	17.5
Pediatric intensive care	24	9.6
Years working as nurse		
1-4	65	25.9
5-8	57	22.7
9-12	45	17.9
13 and over	84	33.5
Level of education		
Vocational health school	48	19.1
Two-year degree	49	19.5
Undergraduate	142	56.6
Post-graduate	12	4.8
Weekly working hours		
40 hours	176	70.1
41 hours and over	75	29.9

Table 2. Comparison of nurses' descriptive characteristics and mean effective speech scale scores.

Descriptive characteristics	Presentation	Sound	Style and statement	Focusing on Speaking	Paying attention to listeners	Total
Age (year)						
20-28 (1)	12.74±5.65	7.22±3.33	9.34±3.67	11.21±4.81	8.08±3.66	48.59±14.52
29-37 (2)	15.35±7.37	9.11±4.60	11.63±4.86	11.00±4.61	9.33±3.93	56.43±21.95
38 and over (3)	13.93±6.21	7.69±3.35	10.27±4.76	10.44±4.60	8.37±3.42	50.70±15.62
F	3.320	5.020	5.230	.638	2.208	4.067
p	**0.038**	**0.007**	**0.006**	0.529	0.112	**0.018**
Advanced analysis of Bonferroni	2>3 >1	2 >1,3	2 >3 >1			2 >3 >1
Marital status						
Married	14.30±6.52	8.04±4.05	10.61±4.83	10.91±4.60	8.60±3.68	52.45±18.04
Single	12.72±5.86	7.39±3.09	9.46±3.49	10.86±4.83	8.20±3.67	48.63±14.89
t	1.943	1.439	2.174	0.083	0.829	1.742
p	0.053	0.151	**0.031**	0.934	0.408	0.082
Have children						
Yes	14.14±6.45	7.89±3.92	10.59±4.84	10.82±4.44	8.73±3.97	52.16±18.32
No	13.19±6.09	7.71±3.41	9.58±3.70	11.15±4.99	8.06±3.24	49.69±14.93
t	1.172	0.379	1.800	-.543	1.417	1.142
p	0.242	0.705	0.073	0.588	0.158	0.254

Table 2 (continued). Comparison of nurses' descriptive characteristics and mean effective speech scale scores.

Descriptive characteristics	Presentation	Sound	Style and statement	Focusing on Speaking	Paying attention to listeners	Total
Service						
Neonatal intensive care unit (1)	15.58±8.38	8.81±4.19	9.72±4.16	11.48±4.42	8.60±3.56	54.21±20.11
Pediatric service (2)	13.85±5.61	7.74±3.50	10.36±4.09	10.86±4.45	8.72±3.42	51.54±15.30
Pediatric emergency (3)	13.50±6.54	7.64±4.23	10.07±5.65	11.27±5.59	7.95±4.79	50.43±19.53
Pediatric intensive care (4)	9.67±2.84	6.42±2.30	9.67±3.95	9.54±4.83	7.42±2.70	42.71±12.28
F	4.823	2.266	0.347	0.989	1.189	2.547
p	**0.003**	0.081	0.791	0.389	0.315	0.057
Advanced analysis of Bonferroni	1>2,3 >4					
Years working as nurse						
1-4 (1)	11.75±4.12	6.74±2.87	8.93±3.62	11.65±4.99	7.57±2.92	46.65±11.99
5-8 (2)	13.82±6.73	7.51±3.56	9.82±3.90	10.67±5.05	8.56±4.32	50.39±17.61
9-12 (3)	15.76±7.48	9.62±4.42	11.58±4.44	10.78±3.99	9.40±3.74	57.13±16.96
13 and over (4)	13.98±6.37	7.77±3.64	10.50±4.96	10.60±4.58	8.52±3.57	51.13±20.32
F	3.860	5.855	3.638	0.719	2.326	3.550
p	**0.010**	**0.001**	**0.013**	0.542	0.076	**0.015**
Advanced analysis of Bonferroni	3>2 >1	3>2 >1	3>2 >1			3>2 >1
Level of education						
Vocational health school (1)	13.02±5.24	7.65±3.25	9.77±3.45	9.13±3.54	8.17±2.68	47.73±13.66
Two-year degree (2)	13.82±4.58	7.76±2.59	11.06±4.13	11.06±4.65	8.59±2.99	52.29±10.40
Undergraduate (3)	13.73±7.15	7.81±4.20	10.07±4.75	11.46±4.83	8.53±4.12	51.61±19.91
Post-graduate (4)	15.25±5.59	8.00±3.36	8.58±4.01	11.00±5.98	7.92±4.06	50.75±9.63
F	0.433	0.038	1.356	3.066	0.224	0.751
p	0.730	0.990	0.257	**0.029**	0.880	0.523
Advanced analysis of Bonferroni				2,3,4 >1		
Weekly working hour						
40 hours	12.76±5.82	7.29±3.58	9.75±4.46	10.73±4.77	8.15±3.74	48.68±16.24
41 hours and over	15.82±6.91	8.82±3.74	11.00±4.12	11.28±4.54	9.10±3.42	56.01±17.46
t	-3.559	-3.008	-2.045	-.824	-1.861	-3.159
p	**0.000**	**0.003**	**0.042**	0.410	0.064	**0.002**

In the study, the difference between nurses' age and their mean coping scale mental disengagement, restraint, emotional social support and substance use sub-dimensions was found to be significant ($p<0.05$). The difference between nurses' state of having children and their mean restraint, suppression of competing activities sub-dimension scores and the service they worked in and their mean focusing on and venting emotions sub-dimension scores was found to be statistically significant ($p<0.05$). The difference between the number of years nurses worked and their mean mental disengagement, humor and substance use sub-dimension scores was found to be significant ($p<0.05$). The difference between nurses' marital status and level of education and their mean coping scale total and sub-dimension scores was not found to be statistically significant ($p>0.05$). The difference between nurses' weekly working hours and their mean positive reinterpretation and growth, focusing on and venting emotions, humor, behavioral disengagement and substance use sub-dimension scores was found to be significant (Table 3, $p<0.05$).

Table 3. Comparison of nurses' descriptive characteristics and mean COPE scores.

Descriptive characteristics	Positive reinterpretation and growth	Mental disengagement	Focus on and venting emotions	Emotional social support	Active-coping	Denial	Turning to religion	Humor	Behavioural disengagement
Age (year)									
20-28 (1)	11.76±2.11	11.41±2.13	8.59±3.52	10.76±2.57	11.46±2.49	9.62±2.92	9.65±2.41	11.09±2.44	9.95±2.80
29-37 (2)	12.00±2.65	10.22±2.13	8.44±2.74	10.74±2.37	11.37±2.38	9.35±2.07	9.60±2.28	10.85±2.90	9.28±2.02
38 and over (3)	11.41±2.65	10.38±2.44	8.60±2.90	10.00±2.68	11.09±3.12	9.41±2.66	9.36±2.74	11.10±2.78	9.10±2.84
F	1.06	7.59	0.43	2.37	0.43	2.67	0.336	0.172	2.721
p	0.35	**0.001**	0.96	0.96	0.64	0.79	0.715	0.842	0.068
Advanced analysis of Bonferroni		1 >2,3							
Marital status									
Married	11.55±2.44	10.67±2.20	8.73±2.99	10.61±2.54	11.43±2.60	9.72±2.63	9.77±2.53	11.15±2.74	9.64±2.71
Single	12.01±2.25	11.09±2.26	8.17±3.41	10.42±2.58	11.23±2.72	9.21±2.27	9.24±2.32	10.94±2.42	9.41±2.62
t	-1.494	-1.422	1.361	0.585	0.562	1.468	1.653	0.626	0.683
p	0.137	0.156	0.175	0.559	0.575	0.143	0.100	0.532	0.495
Have children									
Yes	11.81±2.44	10.71±2.31	8.44±2.91	10.53±2.53	11.59±2.56	9.73±2.53	9.74±2.44	11.33±2.50	9.63±2.54
No	11.62±2.36	11.04	8.64±3.47	10.53±2.64	11.09±2.71	9.23±2.84	9.33±2.52	10.76±2.75	9.49±2.83
t	0.620	1.110	-.493	-.011	1.494	1.464	1.305	1.699	0.417
P	0.536	0.268	0.623	0.991	0.136	0.144	0.193	0.091	0.677
Service									
Neonatal intensive care unit (1)	12.07±2.14	10.40±2.37	7.44±2.68	10.33±2.71	11.51±2.67	9.74±2.81	9.35±2.45	10.65±2.61	9.07±2.72
Pediatric service (2)	11.55±2.58	11.06±2.32	8.83±3.14	10.50±2.51	11.25±2.78	9.38±2.57	9.36±2.27	11.04±2.77	9.53±2.66
Pediatric emergency (3)	11.36±2.21	10.64±2.40	9.20±3.27	10.41±2.91	11.07±2.64	9.73±3.02	10.43±2.98	11.05±2.54	10.09±3.00
Pediatric intensive care (4)	12.54±2.11	10.54±1.61	7.29±3.20	11.08±2.12	11.88±2.23	9.33±2.33	9.29±2.51	11.71±2.16	9.33±2.11
F	1.788	1.238	4.168	0.490	0.574	0.752	2.375	0.815	1.103
p	0.150	0.296	**0.007**	0.690	0.633	0.388	0.074	0.487	0.349
Advanced analysis of Bonferroni			3 >2 >1,4						
Level of education									
Vocational health school	12.02±2.44	11.19±2.20	8.50±3.18	11.06±2.43	11.40±2.49	9.96±2.65	9.69±2.25	11.35±2.74	9.92±2.68
Two-year degree	11.67±2.16	11.02±2.04	8.43±2.74	10.43±2.86	11.24±2.80	9.00±2.83	9.61±2.93	10.65±2.55	9.14±2.68
Undergraduate	11.52±2.49	10.66±2.35	8.40±3.30	10.37±2.48	11.50±2.59	9.47±2.58	9.40±2.37	11.06±2.68	9.43±2.66
Post-graduate	12.67±2.23	10.50±2.88	10.17±2.89	10.33±3.11	9.25±3.41	10.00±3.05	10.33±2.74	11.08±2.47	10.75±2.90
F	1.187	0.838	1.170	0.918	2.673	1.195	0.625	0.574	1.570
p	0.315	0.474	0.322	0.433	**0.048**	0.312	0.599	0.632	0.197
Weekly working hours									
40 hours	11.93±2.31	10.92±2.12	8.77±3.36	10.61±2.64	11.43±2.56	9.67±2.66	9.60±2.48	11.25±2.64	9.77±2.79
41 hours and over	11.26±2.53	10.56±2.54	7.94±2.56	10.25±2.45	11.10±2.99	9.15±2.68	9.47±2.48	10.50±2.66	8.93±2.37
t	2.015	1.138	2.097	0.996	0.883	1.380	0.365	2.025	2.239
p	**0.045**	0.256	**0.037**	0.320	0.378	0.169	0.715	**0.044**	**0.026**

Table 3 (continued). Comparison of nurses' descriptive characteristics and mean COPE scores.

Descriptive characteristcs	Restraint	Emotional social support	Substance use	Acceptance	Suppression of competing activities	Planning	Cope Total
Age (year)							
20-28 (1)	10.47±2.24	12.03±2.25	11.81±2.11	10.39±2.25	10.16±2.90	11.36±2.08	160.41±26.52
29-37 (2)	9.83±1.93	10.94±2.42	12.11±2.60	10.39±1.66	10.50±1.97	10.81±2.33	156.44±22.19
38 and over (3)	10.86±2.38	11.35±3.02	10.72±2.73	10.33±2.53	10.47±2.36	10.65±2.66	154.83±29.50
F	3.480	3.534	6.844	0.016	0.486	2.448	1.128
p	**0.032**	**0.031**	**0.001**	0.984	0.616	0.089	0.325
Advanced analysis of Bonferroni	1,3 >2	1 >3 >2	2 >1 >3				
Marital status							
Married	10.64±2.32	11.54±2.70	11.38±2.55	10.41±2.26	10.52±2.47	11.05±2.50	158.81±25.89
Single	10.23±2.95	11.68±2.58	11.82±2.30	10.36±2.16	10.10±2.61	11.02±2.05	156.95±26.91
t	1.465	-.419	-1.388	0.176	1.276	0.085	0.546
p	0.144	0.675	0.166	0.860	0.203	0.933	0.585
Have children							
Yes	10.79±2.12	11.72±2.63	11.56±2.62	10.37±2.28	10.64±2.35	11.16±2.47	159±24.82
No	10.12±2.30	11.47±2.68	11.52±2.32	10.39±2.19	10.00±2.75	10.90±2.13	156.13±28.28
T	2.398	0.749	0.107	-0.081	1.993	0.891	1.079
p	**0.017**	0.454	0.915	0.936	**0.047**	0.374	0.282
Service							
Neonatal intensive care unit	9.91±2.09	11.58±2.42	11.63±2.47	10.23±1.93	10.12±2.13	1.72±2.15	154.74±26.64
Pediatric service	10.49±2.19	11.49±2.82	11.43±2.58	10.51±2.34	10.26±2.48	11.11±2.40	157.79±26.67
Pediatric emergeny	10.86±2.64	11.50±2.66	11.00±2.23	10.11±2.36	10.77±3.19	11.02±2.62	159.25±29.84
Pediatric intensive care	10.58±1.98	12.17±2.22	12.83±2.08	10.29±1.81	10.33±2.33	11.00±1.89	160.21±21.45
F	1.378	0.446	3.030	0.431	0.572	0.295	0.293
p	0.250	0.720	0.300	0.731	0.634	0.829	0.830

Table 3 (continued). Comparison of nurses' descriptive characteristics and mean COPE scores.

Descriptive characteristcs	Restraint	Emotional social support	Substance use	Acceptance	Suppression of competing activities	Planning	Cope Total
Years working as a nurse							
1-4 (1)	10.62±2.04	11.94±2.54	12.02±2.011	10.46±2.34	10.43±2.73	11.31±1.20	162.63±26.87
5-8 (2)	10.26±2.46	11.61±2.57	11.33±2.29	10.04±2.16	10.16±2.86	11.35±2.52	155.53±27.33
9-12 (3)	10.31±2.12	11.22±2.65	12.13±2.52	10.96±1.91	9.93±2.22	10.38±2.16	157±64.00
13 and over (4)	10.56±2.34	11.45±2.84	10.94±2.80	10.21±2.32	10.60±2.33	10.90±2.53	155±56.00
F	0.367	0.725	3.496	1.647	0.786	1.913	1.043
p	0.777	0.538	**0.016**	0.179	0.503	0.128	0.373
Advanced analysis of Bonferroni	1,3 >2,4						
Level of education							
Vocational health school	10.65±2.41	11.90±2.41	11.92±2.43	10.69±2.27	10.31±2.75	11.42±2.05	161.96±25.94
Two-year degree	10.59±2.38	11.98±2.50	11.43±2.19	9.98±2.18	10.31±3.06	11.43±2.29	156.92±28.27
Undergraduate	10.26±2.10	11.46±2.70	11.39±2.62	10.33±2.20	10.32±2.33	10.78±2.41	156.37±25.72
Post graduate	11.58±2.61	9.92±3.37	11.83±2.41	11.17±2.48	10.75±2.05	10.50±2.78	160.83±35.30
F	1.548	2.267	0.610	1.354	0.111	1.648	0.591
p	0.203	0.081	0.609	0.257	0.954	0.179	0.621
Weekly working hour							
40 hours	10.53±2.23	11.59±2.60	11.77±2.38	10.50±2.29	10.50±2.60	11.07±2.31	159.90±27.00
41 hours and over	10.32±2.32	11.54±2.87	11.03±2.61	10.10±2.10	10.03±2.38	10.94±2.47	153.13±25.59
t	0.652	0.137	2.182	1.281	1.324	0.375	0.070
p	0.515	0.891	**0.030**	0.201	0.187	0.708	1.821

Table 4 shows the association between nurses' mean effective speech scale sub-dimensions and total scale and mean coping scale sub-dimensions and total scale scores. The nurses' mean effective speech scale score was 50.96 ±16.92, their mean coping scale total score was 157.75±26.69 and a positive strong association was found between them (Table 4, p <0.05).

Table 4. Association between mean effective speech and COPE scores.

COPE Sub-dimensions and total score	Presentation	Sound	Style and statement	Focusing on Speaking	Paying attention to listeners	Total
Positive reinterpretation and growth	r=-0.127 **p=0.045**	r=-0.118 p=0.163	r=-0.137 **p=0.030**	r=-0.109 p=0.089	r=-0.142 **p=0.024**	r=-0.169 **p=0.007**
Mental disengagement	r=-0.058 p=0.358	r=-0.150 **p=0.017**	r=-0.141 **p=0.025**	r=-0.012 p=0.848	r=-0.056 p=0.377	r=-0.107 p=0.092
Focus on and venting emotions	r=0.094 p=0.138	r=-0.071 p=0.260	r=-0.057 p=0.366	r=0.146 **p=0.021**	r=0.100 p=0.114	r=-0.046 p=0.464
Emotional social support	r=-0.069 p=0.278	r=-0.094 p=0.139	r=0.122 p=0.098	r=0.052 p=0.408	r=-0.071 p=0.262	r=-0.072 p=0.256
Active-coping	r=-0.127 **p=0.045**	r=-0.139 **p=0.028**	r=-0.176 **p=0.005**	r=0.099 p=0.116	r=-0.153 **p=0.016**	r=-0.129 **p=0.042**
Denial	r=-0.093 p=0.141	r=-0.041 p=0.514	r=-0.024 p=0.702	r=0.126 **p=0.046**	r=-0.012 p=0.845	r=-0.018 p=0.781
Turning to religion	r=-0.156 **p=0.014**	r=-0.119 p=0.060	r=-0.100 p=0.113	r=0.035 p=0.583	r=-0.128 **p=0.043**	r=-0.128 **p=0.043**
Humor	r=-0.131 **p=0.038**	r=-0.105 **p=0.098**	r=-0.062 p=0.328	r=-0.042 p=0.511	r=-0.139 **p=0.028**	r=-0.106 p=0.093
Behavioural disengagement	r=-0.130 **p=0.040**	r=-0.087 p=0.168	r=-0.081 p=0.200	r=0.085 p=0.178	r=-0.121 p=0.055	r=-0.091 p=0.150
Restraint	r=-0.152 **p=0.016**	r=-0.174 **p=-006**	r=-0.091 p=0.150	r=0.011 p=0.859	r=-0.184 **p=0.003**	r=-0.155 **p=0.014**
Emotional social support	r=-0.070 p=0.273	r=-0.199 **p=0.002**	r=-0.135 **p=0.033**	r=-0.031 p=0.629	r=0.062 p=0.331	r=-0.126 **p=0.046**
Substance use	r=-0.086 p=0.176	r=-0.055 p=0.389	r=-0.092 p=0.148	r=-0.046 p=0.466	r=-0.057 p=0.572	r=-0.093 p=0.143
Acceptance	r=-0.039 p=0.536	r=-0.038 p=0.550	r=-0.101 p=0.110	r=0.112 p=0.076	r=-0.054 p=0.395	r=-0.030 p=0.640
Suppression of competing activities	r=-0.121 p=0.056	r=-0.180 **p=0.004**	r=-0.139 **p=0.028**	r=0.108 p=0.087	r=-0.196 **p=0.002**	r=-0.133 **p=0.036**
Planning	r=-0.125 **p=0.049**	r=-0.205 **p=0.001**	r=-0.135 **p=0.032**	r=-0.045 p=0.476	r=-0.121 p=0.056	r=-0.165 **p=0.009**
Cope Total	r=-0.150 p=0.017	r=-0.167 **p=0.008**	r=-0.148 **p=0.019**	r=0.059 p=0.349	r=-0.152 **p=0.016**	r=-0.147 **p=0.020**

DISCUSSION

Effective speech includes elements such as an individual's having self-confidence, giving confidence to the other person, using body language well, and explaining the subject with a suitable style (Yildiz andYavuz, 2012). Coping attitude, on the other hand, is the cognitive, emotional and behavioral response to events that will cause stress in the individual (Agargun et al., 2005). It is important for pediatric nurses to have effective speech skills and to use effective coping skills in showing a holistic approach to the child and the family and providing high quality care (Aydogan and Ozkan, 2020; Boga et al., 2019; Catak and Bahcecik, 2015; Dikmen et al., 2016). This study examines pediatric nurses' effective speech skills and coping attitudes. The result of our study effective speech skills of pediatric nurses were moderate. The results of our study show that having higher weekly working hours, being between 29 and 37 years of age and working as a nurse for 9-12 years had a significant effect on presentation, sound, style and expression development of effective speech. The fact that pediatric nurses had increased professional experience and awareness with their increasing age may have developed their skills of self-confidence and empathy and enabled them to have effective communication (Tutuk et al., 2002). Because they are new to the profession, nurses between 20 and 28 years of age and those older than 38 may have worked intensely and under difficult conditions. This situation may have negatively affected their effective communication as a result of professional burnout, stress and decreased power. Karadag et al. found that age and time in the profession were important in nurses' developing communicative skills (Karadag et al., 2015). In other studies, it was found that nurses who were between 36 and 43 years of age, those who had been working as nurse for 15 to 19 years and those who worked for 45 to 50 hours a week had better communicative skills (Kumcagiz et al., 2011; Sahin and Ozdemir, 2015). These results are in parallel with the results of our study. In this study, it was found that nurses' being married or working in neonatal intensive care unit had an important effect on their developing style and expression. Marriage can contribute to a person's individual development, self-expression, being patient and understanding the feelings and thoughts of others better (Ucar, 2018). At the same time, neonatal intensive care unit nurses' being able to apply their independent roles more when compared with other pediatric nurses, having higher cooperation in neonatal intensive care environment, and being in continuous communication with the parents may have developed their listening and speaking skills (Nacar, 2019). In the neonatal intensive care unit, being in constant communication with the parents during the mother-infant bonding process, preparing the baby

for care at home, and the mother's caregiver role requires being competent in empathy and communication skills (Demir Acar, Günay and Cevik Güner, 2018). In our study, it was found that the nurses who were undergraduates were better in focusing on speech when compared with nurses who were vocational health high school graduates. Nurses' making more use of resources and having more knowledge as their level of education increases and thus having more developed professional nursing skills may have affected their effective communicative skills positively. One of the most important characteristics of professional nurses is effective communication (Aydogan and Ozkan, 2020). It has been found in studies that nurses' having high level of education plays an important role in developing communicative skills (Aydogan and Ozkan, 2020; Karadag et al., 2015). Studies have also shown that nurses' professionalism increases as their level of education increases (Dikmen et al., 2016, Fisher, 2014). In our study, we found that age was important in determining which coping skills nurses used. The reason for this can be the fact that different dimensions of coping attitude develops with different experiences gained by nurses at different ages. In addition, the experiences gained in the profession with the increase in age may have caused developing behavioral and psychological responses in solving problems, using the existing resources and coping with stress positively (Catak and Bahcecik, 2015). Celikler (2017) found that nurses between 29 and 35 years of age used more effective coping methods when compared with nurses between 20 and 27 years of age, while Celmece ve Işiklar (2016) found that nurses 31 years of age and over used more effective coping methods when compared with nurses 29-30 years old (Celikler, 2017; Celmece and Işiklar, 2016). In this study, it was found that nurses working in pediatric emergency or pediatric service and those who had children had higher coping attitude when compared with the other nurses. In their study, Celmece and Işiklar stated that the service nurses worked in was effective in their coping attitude (Celmece and Işiklar, 2016). The reason for this may be the changes in the workload of nurses according to the units they worked in, differences in the communication they had with the patients and their relatives and insufficient personnel and material (Celmece and Işiklar, 2016). Having a child provides the mother with important attainments such as knowledge, skill, motivation, attention, patients, effort and taking responsibility. It can be said that nurses who are mothers develop the attitude of coping with negative situations thanks to these attainments (Yildiz, 2010). In our study, it was found that nurses who had been working for 1-4 years and those who were working for 40 hours had better coping attitude. Nurses are more likely to encounter unfamiliar situations in the first years of their profession. This situation may have caused nurses to explore different aspects of coping attitudes and to gain experience in the face of events. Study conducted has found that the number of years nurses worked and weekly working hour affected coping attitude (Karakas and Koc, 2014). In the study, positive significant association was found between nurses' mean effective speech scale sub-dimension scores and total scale scores and their mean coping attitudes scale sub-dimension scores and total scale scores. It can be seen that thanks to effective speech skills, nurses have higher self-confidence, they can attract attention and they use body language well. They also know their subject well, explain in an appropriate style and concentrate on finding a solution to the problem. They also handle the problem from a different aspect in order to see the more positive sides of the problem (Aydogan and Ozkan, 2020; Kumcagiz et al., 2011; Tutuk et al., 2002). It can also be seen that they do their best to get what they want and think about how they can solve the problem best. This situation shows that effective speech skill is important in using coping mechanism effectively.

Limitations of Study

The limitation of the study is the low number of nurses working in pediatric clinics of the hospitals that the study was conducted in.

CONCLUSION

It was found that descriptive characteristics of pediatric nurses such as age, service they worked in, the number of years they worked as nurse and weekly working hours were effective in effective speech skills and coping attitudes. It was found that their coping attitudes developed as their effective speech skills developed. As a conclusion, trainings should be given to nurses in hospitals with in-service training about how they can use effective speech and coping methods. More comprehensive training should be given in nurses' undergraduate education to develop their effective speech skills and coping attitudes. It is recommended to conduct studies comparing the effective speaking and coping attitudes of pediatric nurses and nurses working in other adult services.

Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: DCŞ, UG; **Material, methods and data collection:** DCŞ, UG; **Data analysis and comments:** DCŞ, UG; **Writing and corrections:** DCŞ, UG.

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Experiences of Intensive Care Nurses Caring for Covid-19 Patients: A Qualitative Study

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ABSTRACT

Objective: The aim of this study is to examine the experiences of intensive care nurses in the process of providing care to Covid-19 patients. **Material and Methods:** A qualitative descriptive design was used. Twenty intensive care nurses participated with the purposeful sampling method. The data was collected through semi-structured WhatsApp web video calls. The data were analyzed using thematic analysis. **Results:** Two main themes were obtained: (1) psychological impact; (2) physical impact. Fear, loneliness, stress, psychological fatigue, psychological fatigue, feeling of death sub-themes were obtained from the main theme of psychological impact, while working conditions, working with personal protective equipment sub-themes were obtained from the main theme of physical impact. **Conclusion:** Nurses who had to work during the Covid-19 pandemic were found to have psychological and physical impacts

Keywords: Covid-19, Intensive Care, Nurse, Experience, Qualitative Study.

Covid-19 Hastalarına Bakım Veren Yoğun Bakım Hemşirelerinin Deneyimleri: Niteliksel Bir Çalışma

ÖZ

Amaç: Bu çalışmanın amacı, yoğun bakım hemşirelerinin Covid-19 hastalarına bakım sağlama sürecinde yaşadıklarını incelemektir. **Gereç ve Yöntem:** Niteliksel tanımlayıcı tasarım kullanılmıştır. Amaçlı örnekleme yöntemi ile 20 yoğun bakım hemşiresi katılmıştır. Veriler, yarı yapılandırılmış soru formu ile WhatsApp web görüntülü görüşmelerle toplanmıştır. Veriler, tematik analiz kullanılarak analiz edilmiştir. **Bulgular:** Psikolojik ve fiziksel etkilenim olmak üzere iki ana tema elde edilmiştir. Psikolojik etkilenim ana temasından korku, yalnızlık, stres, psikolojik yorgunluk, ölümü hissetme alt temaları elde edilirken, fiziksel etkilenim ana temasından çalışma şartları, kişisel koruyucu ekipmanla çalışma alt temaları elde edilmiştir. **Sonuç:** Covid-19 salgınında çalışmak zorunda kalan hemşirelerin psikolojik ve fiziksel alanda etkilenimlerinin olduğu belirlendi.

Anahtar Kelimeler: Covid-19, Yoğun Bakım, Hemşire, Deneyim, Nitel Çalışma.

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INTRODUCTION

The new coronavirus disease (Covid-19), which first appeared in Wuhan, China, is an acute respiratory disease. The disease spread rapidly all over the world and was defined as a pandemic by the World Health Organization on March 11, 2020 (WHO, 2020). This highly contagious disease is transmitted by droplets and contact. While some people with Covid-19 show no symptoms or only mild symptoms of upper respiratory illness; some people develop serious complications such as severe pneumonia and acute respiratory distress. People with mild symptoms are treated out patiently, while those with moderate to severe symptoms are treated in hospitals (Singhal, 2020). There are currently in one year 756.581.850 million active cases in the world and 17.004.677 active cases in our country (February 17, 2022). 99.689 (0.5%) of infected patients worldwide, 633 (8%) in our country are treated in serious condition and intensive care units (Worldmeters, 2020). These increasing patient numbers put extraordinary pressure on healthcare systems around the World (Cadge et al., 2021). Some of the hospitals and especially intensive care units are customized for Covid-19 patients to meet the growing patient demand (Halaclı et al., 2020).

Nurses, the main protagonists of such an extraordinary outbreak, have been providing and continuing to provide care from the beginning of the outbreak to the very beginning with great responsibility in the preliminary stages to overcome this epidemic (Sun et al., 2020). Nurses have been exposed to various health risks such as fear of infection, stigma, personal equipment competence, increased workload, new workplace, high mortality rates in Covid-19 and similar Middle East respiratory syndrome (MERS) outbreaks and have been adversely affected physically, psychologically and socially in severe acute respiratory syndrome (SARS) outbreaks (Lai et al., 2020; Lee et al.,2018). Especially critical care nurses, emergency nurses and thoracic nurses experienced more intense symptoms such as psychological distress and mental health (Lai et al., 2020).

It has been reported that nurses, including those working in intensive care units, experience unpreparedness, social isolation, loneliness, conflict in professional roles, organizational expectations, obscurity, and fear of contamination (Muz & Erdoğan, 2021). This may affect the protection of health professionals and the provision of continuous and comprehensive patient care (Chen et al., 2020).

The number of Covid-19 patients continues to increase in many countries, and millions of nurses worldwide have been and will continue to be affected, both physically and psychologically. Because nurses in Turkey had little knowledge about their experiences during the Covid-19 pandemic. This study is aimed at determining what Covid-19 patients experience in intensive care units in the process of providing care.

MATERIALS AND METHODS

Design of study

An exploratory, qualitative method with a phenomenological design has been used (Polit & Beck, 2009). The Consolidated Criteria for Reporting Qualitative Research checklist was followed during the study (Tong et al., 2007).

Participants and recruitment

The study sample included nurses working in the Covid-19 intensive care unit of a tertiary training hospital. Purposive sampling method was used in the sample selection of the study. The sample size was determined to ensure data saturation. The first participants were known to the researchers and the other participants were reached using snowball sampling method. The criteria for inclusion were: a) volunteering to participate in the study, b) providing care in intensive care to patients with Covid-19. The sample size of the study was reached when the data were repeated and data saturation was reached. The study was completed with 20 nurses.

Participants were sent an e-mail to explain the purpose of the study and to obtain their oral and written consent. It was explained to all participants that participation is voluntary, WhatsApp web video calls and audio recordings will be made. The interview time was arranged with the nurses whose verbal and written consent was obtained.

Data collection

The data was collected between May and September 2020 using a semi-structured interview guide and introductory information form. The introductory information form contains questions about the age, gender and year of work of the nurses. The semi-structured interview guide consists of 2 basic open-ended questions developed by the authors after the literature has been scanned. The interviews were conducted by researchers who were trained in qualitative interviewing. The interviews were conducted via WhatsApp web video calls. Each participant was interviewed once. Each interview lasted an average of 40-60 minutes. Interviews were conducted in a quiet environment for both the participant and the researcher. During the interviews, “What have you experienced in the provision of health care since the day the Covid-19 pandemic alarm was issued, what were you affected by? “What are your feelings after these experiences?” After asking questions, they were asked to explain. They were encouraged to elaborate on the subject with questions such as "can you please provide more information on this subject?" All interviews were recorded, written word for word and checked for inaccuracy (Holloway & Galvin, 2016). The research team consists of a lecturer who has experience in intensive care nursing and trained in qualitative studies, an associate professor in public health nursing and a researcher who has training in qualitative studies, and a lecturer doctor with experience in emergency and disaster management.

Data analysis

The data were analyzed using the six-step thematic analysis method defined by Braun and Clark's (2006) (Braun & Clarke, 2006). No categories were defined beforehand as the study was based on an inductive methodology. The first stage consisted of transcribing the interviews, and the second stage consisted of determining the appropriate codes for the purpose of the study. In the third stage, sub-categories, categories and themes were created by grouping codes that express the same meaning. In the fourth stage, sub-themes and themes were revised and simplified. In the fifth stage, themes and sub-themes were defined by name. In the sixth stage, the results were converted into reports.

Validity and reliability

The reliability of the study was evaluated according to the criteria set by Guba and Lincoln (1985) (Lincoln & Guba, 1985). For reliability, data source triangulation was performed by comparing the views of nurses with different perspectives. Using peer inquiry, the two researchers discussed the codes they independently identified until they came to consensus and identified the most appropriate codes, categories and themes. Purposeful sampling method was used to ensure transferability. In addition, nurses were asked to explain in detail their experiences during the Covid-19 pandemic (Holloway & Galvin, 2016).

The query control method was used to ensure reliability. The themes were confirmed by the second researcher, who was not involved in the data collection and evaluation process. To improve validity, participants were asked to confirm after the data was summarized (Lincoln & Guba, 1985).

Ethical consideration

In order to carry out the study, the ethics committee dated April 15, 2020 and numbered 2020-6/41 was obtained from the Ethics Committee for Clinical Research at Uludağ University Faculty of Medicine.

RESULTS

Twenty (80% female, 20% male) intensive care nurses participated in the study. The nurses are a (minimum age of 22 and a maximum of 32 and have a bachelor's) degree. The working experience of the nurses ranged from 4.15±3.11 years. Demographic characteristics of nurses were given in Table 1.

As a result of the analysis, two main themes were developed. (1) psychological impact; (2) physical impact. Descriptions of all themes are presented in the following section.

Theme 1: psychological impact

This theme explains the psychological effects experienced by nurses caring for patients with Covid-19 in the intensive care unit, such as fear and anxiety, loneliness, stress and death.

Fear

Nurses were found to have different reasons for their fears. The nurse who experienced the first outbreak expressed her fear as follows;

"A Covid-19 intensive care team was established in our hospital before the cases started to be hospitalized. I was there for this team. I was so scared when I heard that. It's been a few years since I started nursing. It was the first time I'd encountered an epidemic (Nurse,2)."

Nurses were adversely affected by the clinical course of the disease when caring for patients with Covid-19 . While the nurses were expressing these feelings, they described it as a difficult situation to get out of. These feelings were expressed in different words by all participants.

"…Most of the patients were intubated and their condition was very bad. For this reason, their maintenance took a long time, the frequency of aspiration application was increasing. I was wondering if I was infected while I was caring for my patient (Nurse, 1)."

Nurses feared medical staff would be infected. They stated that they were afraid of being infected and transmitting the infection to their families.

"One day I could be infected too; I could infect my family without realizing it. I was so afraid of making my family sick, especially infecting my daughter (Nurse, 3)."

Loneliness

Nurses took isolation measures to avoid infecting their families. They indicate that this situation causes them to experience loneliness. They focused more on the lack of social support and the expressions of being away from family while expressing a sense of loneliness. Describing loneliness as a negative feeling, the nurses considered the health of their families as the positive side of this process. The nurses stated this as follows.

"I was living with my parents before the pandemic. I separated the houses in order not to carry the disease to them in the pandemic. I still live apart from my family and haven't seen them in 2 months. I feel so lonely and unhappy. I think I have to do this for their sake (Nurse, 4)."

Stress

Healthcare professionals, who have great responsibilities, are affected by the uncertainties in the care process. The nurse expressed that she was experiencing stress due to this influence with the following words.

"We have a great responsibility during the Covid-19 process. In fulfilling these responsibilities, was my care enough to combat the disease? The answers to such questions were unclear, which caused me stress (Nurse, 13)."

Table 1. The participants' demographic characteristics (n=20).

Variables	Mean±SD	Min.-Max.	n	%
Agel (years)	25.70±2.57	(22-32)		
Working experience (years)	4.15±3.11	(1-10)		
Gender				
Female			6	80
Male			4	20
Total			20	100

Min= Minimum, Max= Maximum, SD= Standard Deviation.

Emotional exhaustion

Nurses said they experienced emotional exhaustion while caring for patients. Here's how one of the nurses described what happened.

"Covid-19 patients were coming out of intensive care either recovering or getting worse and dying. Nurses witnessed this situation from beginning to end. I started to empathize uncontrollably with every patient in the intensive care unit. This situation began to consume me emotionally (Nurse, 11)."

Feeling death

Nurses said they were affected by the deaths of the young patients they cared for.

"The death of my young patients affected me a lot. That's when I felt death so close to me. I was young, too (Nurse, 9)."

Nurses explained that they were afraid of dying, especially dying alone as follows.

"If I got sick and didn't get over it, I wouldn't have seen my family for the last time. I was afraid of succumbing to sickness and dying all alone (Nurse, 16)."

Theme 2: physical impact

The second theme is the theme in which intensive care nurses describe the physical effects of working with the changing working order and personal protective equipment in the Covid-19 pandemic.

Working conditions

Institutions have changed their working patterns to reduce contact with patients during the pandemic. One change was to reduce the number of nurses on duty. The nurses stated that they were physically exhausted.

"The hospital management left nurses with a gap of 3 days after their 24-hour shifts. This was good practice to reduce contact but with the number of nurses present the intermittent shifts became a nightmare. Since the number of patients I was looking at was high, I was giving care to patients without a break. I was very tired when I got home from the shift (Nurse, 7)."

A large number of participants said that additional Covid-19 intensive care units were established as the number of patients increased. It was stated by a participant that the establishment of additional units without eliminating the lack of nurses was a physical burden.

"…The opening of a new unit without nurse reinforcements caused us to be on shifts every other day. I have not been infected by patients during the period I worked. But working conditions drained my strength and I started to feel physically unwell (Nurse, 14)."

Working with personal protective equipment

Nurses said they use personal protective equipment to protect themselves from Covid-19 infection. The nurses described the physical effects they experienced due to the use of personal protective equipment as follows.

"…The overalls I was wearing reduced my mobility, extended the duration of the nursing practices I did, made it difficult for me to do easy work and exhausted me. The goggles I was wearing got fogged up and narrowed my field of vision and distance. This has increased my potential for making mistakes (Nurse, 19)."

Nurses described the risks of being infected while removing PPE.

"Putting on and taking off PPE was like two sides of the coin. Before patient care to wear PPE prevents me from becoming infected and could save my life. After the maintenance, I could be infected and sick with a mistake I would make while removing it. So our lives depended on our attention in putting on and taking off PPE (Nurse, 10)."

Majority of nurses said that PPE caused health problems such as allergies, scars, wounds and redness on skin.

"Redness occurred where personal protective equipment came into contact with my skin. Mask, glasses and visor created redness and pressure sores on my skin (Nurse, 8)."

Words of the nurse who sweated a lot while working with KKE.

"When I was working in protective clothing, sweat was pouring out of my back like water… I didn't get Covid-19, but I had pneumonia (Nurse, 15)."

DISCUSSION

This study examined the effects of nurses who care for Covid-19 patients due to their experiences in intensive care with a qualitative descriptive approach. In this study, two main themes were identified: psychological and physical effects of nurses serving patients with Covid-19 in intensive care unit.

In this study, nurses experienced fear for different reasons. The reasons for their fear were that they encountered a disease for the first time, caregiving with close contact, death of young patients, being infected and infecting others. In different studies, the reasons for nurses to experience fear; being a new disease (Kim, 2018), unfavorable course of the disease, high morbidity and mortality (Neto et al., 2020), inexperience (Fan et al., 2020), caregiving with close contact, getting and transmitting (Kang et al., 2018), transmission to colleagues and deaths (Koh et al., 2012). These data are in agreement with our study data. This study showed that stress is experienced when the outcomes of care services are not clearly evaluated. In another study, fear of being infected, restrictions, inadequate personal protective equipment have been a source of stress in nurses (Arnetz et al., 2020). The main factors affecting the stress of nurses were their anxiety levels, weekly working hours, and having children (Lin & Zheng, 2021). During the Covid-19 pandemic, nurses had emotional empathy with their patients in intensive care enough to feel burnt out. This emotional empathy has been shown to be a crucial factor in psychological exhaustion over time (Correia & Almeida, 2020). Our study supports this data. In this study, young dying patients made young nurses feel death. In a different study, it was determined that the anxiety of the nurse who saw the death of his patient increased and they did not feel ready to communicate with the deceased patient's relatives (Galehdar et al., 2020). The findings suggest that health workers need actions to reduce their psychological impact and protect their mental health during and after the outbreak. In this study, the change in the working order to shorten the contact time increased the number of patients that nurses care for. Our current findings are similar to the problems experienced due to insufficient personnel as stated in the studies in the literature (Fernandez et al., 2020). It is important for nurses to work with acceptable shift duration and frequency for the continuity of patient care quality, and these should be paid attention to in the fight against the epidemic (Liu et al., 2020). Workforce safety is a high priority in the fight against the epidemic. In this study, it was mentioned that the duration of patient care with PPE is prolonged, nursing interventions became difficult and caused fatigue. Similarly, it has been determined that the use of PPE leads to various difficulties such as prolonging the duration of care, delaying nursing procedures, and making communication difficult (Sun et al., 2020). Various studies have mentioned a lack of personal protective equipment (Moradi et al., 2021; Sun et al., 2020). In this study, nurses evaluated PPE as a source of risk that should be considered in order not to become infected during wearing and removing. Similarly, it has been found that removing the PPE increased the risk of infection. In addition, it has been determined that the inappropriate size, design and use, quality and effectiveness of PPE contribute to this risk (Fan et al., 2020). These findings highlight the importance of equipment that is ergonomic, adequate, and marked to remind the put-on-off sequence. In this study, it was observed that Personal Protective equipment caused skin lesions such as allergies, scars, wounds, redness, and health problems such as sweating, pneumonia, and fluid loss. Similarly, Moradi et al. (2020) their study, showed that the physical weight of the personal protective equipment and the inability to change it, caused difficulties in eating, drinking and sink needs, and led to complications such as constipation, dehydration, urinary tract (Moradi et al., 2021). The present study involves certain limitations that must be considered. This study was conducted only with nurses working in one hospital's intensive care unit; therefore, the results cannot be generalized.

CONCLUSIONS

This study focuses on the impacts that intensive care nurses face based on their experiences during the Covid-19 pandemic. The findings of this study showed that intensive care nurses faced many physical and psychological effects. Health managers should be given financial support to establish a safe working environment and provide psychological support in order to minimize the physical and psychological effects for intensive care nurses, as well as increasing the number of nurses. Reducing nurses' anxiety and stress by informing them about the pandemic and patient care is important for them to provide quality care. In order not to decrease the quality of care provided by nurses during the pandemic, a cooperation triangle consisting of individuals, healthcare professionals and the government should be formed to ensure that health services are not interrupted through educating the public and raising public awareness.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

Plan, design: EU; **Material, methods and data collection:** EU, MOA, AÖ; **Data analysis and comments:** EU, MOA, AÖ; **Writing and corrections:** EU, MOA, AÖ.

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Depression Levels and Associated Factors in Individuals with Hereditary Neuromuscular Disease

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ABSTRACT

Objective: The purpose of this study was to determine depression and anxiety levels in individuals diagnosed with Hereditary Neuromuscular Diseases (HNMDs) with differing degrees of ambulation, and the factors affecting those levels. **Materials and Methods:** The study population in this descriptive study consisted of patients under follow-up with diagnoses of HNMD at the Gazi Yaşargil Education and Research Hospital muscular diseases clinic. One hundred fifty-nine patients with varying degrees of ambulation were included. The study data were collected using a sociodemographic data form, the Beck Depression Inventory (BDI), the Beck Anxiety Inventory (BAI), and the Functional Ambulation Classification (FAC). **Results:** The participants' mean age was 21.03±9.35 years, and 55.3% were male. Physical ambulation levels were nonfunctional in 24.5% of participants, dependent on supervision in 15.7%, and independent in 59.7%. A significant part of the participants had moderate or severe anxiety levels. The general BAI score was 20.44±10.25, and the general BDI score was 21.03±9.35. Mild and severe depressive symptoms were present in 76.1% of the participants. Advanced age ($p<0.05$) and high physical dependence levels ($p<0.05$) emerged as significant variables adversely affecting depression and anxiety levels. **Conclusion:** It was concluded that especially advanced age and dependent physical ambulation level are important risk factors.

Keywords: Anxiety, Depression, Neuromuscular Disease.

Genetik Geçişli Nöromüsküler Hastalığı Olan Bireylerin Depresyon Düzeyi ve İlişkili Faktörler

ÖZ

Amaç: Bu çalışmanın amacı, farklı ambulasyon düzeylerine sahip Genetik Geçişli Nöromüsküler Hastalığı (GNMH) olan bireylerin depresyon ve anksiyete düzeyinin belirlenmesi ve etkileyen faktörlerin tespit edilmesidir. **Gereç ve Yöntem:** Tanımlayıcı olarak tasarlanan çalışmanın evrenini Gazi Yaşargil Eğitim Araştırma Hastanesi Kas Hasatlıkları kliniğinde GNMH tanısı ile takip edilen hastalar oluşturmaktadır. Farklı ambulasyon seviyelerindeki 159 hastanın dahil edildiği çalışmanın verileri sosyodemografik veri formu, Beck Depresyon ölçeği (BDÖ), Beck Anksiyete ölçeği (BAÖ) ve Fiziksel Ambulasyon Skalası (FAS) aracılığı ile toplanmıştır. **Bulgular:** Çalışmaya katılanların yaş ortalaması 21.03 ± 9.35 ve %55.3'ü erkektir. Katılımcıların %24.5'i fonksiyonel olmayan, %15.7'si gözetimli bağımlı, %59.7'si tam bağımsız seviyesinde fiziksel ambulasyon düzeyine sahiptir. Çalışmaya katılanların önemli bölümü orta ve şiddetli düzeyde anksiyete seviyesine sahip olup, genel BAÖ puan ortalaması 20.44±10.25' tir. Katılımcıların BDÖ genel puan ortalaması 21.03±9.35'tir. Hafif ve ileri düzey depresyon belirtisi gösterenlerin oranı ise %76.1'dir. GHMH tanılı bireylerde ileri yaş ($p<0.05$) ve fiziksel bağımlılık düzeyinin yüksek olması ($p<0.05$) depresyon ve anksiyete düzeyini olumsuz etkileyen önemli değişkenler olarak tespit edilmiştir. **Sonuç:** Özellikle ileri yaş ve bağımlı fiziksel ambulasyon seviyesinin önemli birer risk faktörü olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Anksiyete, Depresyon, Nöromüsküler Hastalık.

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INTRODUCTION

There are several types of hereditary neuromuscular disease (HNMD) (Dahlqvist et al., 2020; Deenen et al., 2015). Recent studies from the UK and Norway have reported HNMD prevalences of approximately 120 and 112/100,000, respectively (Carey et al., 2021; Müller et al., 2021). In some of these, patients are physically independent, but may be bed-bound in others. However, HNMD causes long-term function losses in almost all patients, even those with independent ambulation levels (Dahlqvist et al., 2020). Several cardiological, respiratory, and physical complications are known to occur in severe HNMD progressing with motor weaknesses (Finder, 2021). From that perspective, despite the rarity of HNMDs, they still represent an important public health problem by causing a rise in the dependent population. According to World Health Organization data, the global prevalence of depression is 4.4%, but can be as high as 5%, particularly in Africa (WHO, 2023). Chronic and physical diseases are risk factors affecting depression in addition to various sociodemographic variables such as sex and economic status (Bogdan et al., 2020; Liu & Tang, 2018; WHO, 2017). A study of patients with different HNMDs reported a prevalence of depression of 32.5% (Mori-Yoshimura et al., 2019), while a meta-analysis reported a depressed rate of 18% and an anxiety disorder rate of 24% (Pascual-Morena et al., 2022). However, while this can emerge in association with long-term therapeutic processes, it can also derive from patients' individual and environmental differences. In both cases, depression can adversely affect prognosis in patients with chronic disease and can also reduce therapeutic success (Aytap & Özer, 2021). This will impact on the treatment and rehabilitation of patients with HNMDs requiring long-term treatment and care. Determining the prevalence of depression and anxiety in HNMDs and factors associated with severity is therefore important in terms of the prognosis of HNMDs. The evaluation of several risk factors potentially associated with depression in individuals with HNMDs will contribute to their prolonged treatment and care. The HNMDs included in this study are rare entities. Studies have investigated diagnostic groups such as Duchene and Limb Girdle, which are relatively more common. However, in addition to these diagnostic groups, all seven diagnostic groups in the HNMD classification were included in the present study. This research is important in terms of identifying determinants of depression in patients with HNMDs, in whom depression is frequently observed.

MATERIALS AND METHODS

Study type

This was a descriptive study.

Place and time of research

This study was performed with adults with HNMD under follow-up at the Health Sciences University Gazi Yaşargil Education and Research Hospital (HSUGYERH) muscular diseases clinic, Turkey. Research data were collected between 15.07.2021 and 05.05.2022.

The population / sample of the research

Patients aged 18 or over, diagnosed with HNMD and with no mental, visual, or hearing problem representing a difficulty to understanding, evaluating, or answering the questions in the research were included in the study. Epi Info software (7.4.2.0) was used to determine the sample power. Post power analysis based on the depression rate showed that 159 individuals would be representative at an 86% confidence interval a 5% margin of error (alpha: 0.05). The study population consisted of 304 individuals diagnosed with HNMD under follow-up at the HSUGYERH muscular diseases clinic. The authors aimed to contact all the study population, with no sampling being performed. Sixty-two of the patients under follow-up were excluded due to being younger than 18, and another 26 due to having disabilities representing an obstacle to communication. Data were finally collected from 159 of the 216 individuals meeting the inclusion criteria, a participation rate of 73.6%.

Variables

Independent variables of the study Functional Ambulation Classification (FAC) and sociodemographic characteristics; Dependent variables are The Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI).

Data collection tools

A sociodemographic data form, BAI, BDI, and the FAC were employed for data collection. The questionnaire employed in the research consisted of 54 questions, six investigating sociodemographic characteristics, 21 each for the BAI and BDA, and six evaluating the FAC.

Sociodemographic Data Form: This form, developed by the authors in line with the literature, investigated characteristics such as marital status, sex, age, and education, together with information concerning height and weight (Darmahkasih et al., 2020; Mori-Yoshimura et al., 2019; Pascual-Morena et al., 2022).

Beck Anxiety Inventory (BAI): The BAI evaluates the frequency of experienced anxiety symptoms and was developed by Beck et al. in 1988 (Beck et al., 1988). This Likert-type self-report scale consists of 21 items scored between 0 and 3. Higher total scores indicate higher levels of anxiety. The validity and reliability of the scale in Turkey were studies by Ulusoy et al., with a Cronbach alpha reliability coefficient of 0.807 being determined (Ulusoy et al., 1998). The Cronbach alpha reliability coefficient in the present measurement, applied to determine the degree of emotional tension such as anxiety and worry in individuals with HNMD, was 0.821.

Functional ambulation classification (FAC)

This scale applied by the authors to determine participants' functional abilities was developed at the

Massachusetts General Hospital, USA. The six-point scale evaluates how much assistance the individual requires from a device or other person during ambulation. Scoring is from 0 to 5. At level 0 the individual is unable to walk (non-functional) or requires a parallel bar or the assistance of several people to do so. At level 1, the individual is ambulated with the assistance of another person and walks with another person taking his weight on a flat surface. At level 2, the individual is ambulated with the occasional assistance of another person but not such as to take the patient's weight. At level 3, the individual can ambulate on a flat surface under the visual supervision of another person but without their physical support. At level 4, the patient can ambulate on a flat surface but not at all speeds, and not on stairs etc. At level 5, the individual can walk on all surfaces at a sufficient speed (Akdeniz et al., 2015).

Beck Depression Inventory (BDI): This self-report scale is the most frequently employed tool for measuring physical, emotional, and cognitive symptoms seen in depression in research and the clinical setting. It consists of 21 items, each scored between 0 and 3. Total possible scores range between 0 and 63 and show the severity of depression. The BDI was developed by Beck et al., with validity and reliability study for Turkey being conducted by Hisli (Bats & Brown, 1996; Hisli, 1989). Scores of 1-9 indicate minimal depression, 10-16 mild depression, 17-29 moderate depression, and 30-63 severe depression (Bats & Brown, 1996). The Cronbach alpha reliability coefficient in the Turkish-language validity and reliability study was 0.782, and 0.733 in the present study (Hisli, 1989).

Data collecting

The research data were collected by the researchers using the data collection form, face-to-face with the patients diagnosed with HNMD, at the HSUGYERH Muscular Diseases Polyclinic Muscle Diseases outpatient clinic.

Statistical analysis

Frequency, percentage, arithmetic mean, and standard deviation were used as descriptive methods in the data analysis. The Kolmogorov-Smirnov test was applied to determine whether variables were normally distributed. The independent samples t test wand One-Way Analysis of Variance (ANOVA) were applied to examine the change caused by independent variables in dependent variables. Turkey's test was applied to identify the source of significance in ANOVA tests yielding significant results. Spearman's correlation was used to determine correlations between total BAI and BDI scores and other numerical variables. p values lower than 0.05 were regarded as statistically significant.

Ethical considerations

Approval was received from the Batman University non-interventional clinical research ethical committee before commencement (No:2021/02-10 dated 28.05.2021). Written informed consent was obtained from all participants.

RESULTS

The largest proportion (30.2%) of participants in this study completed with 159 individuals were those diagnosed with limb-girdle muscular dystrophy (LGMD). Myotonic dystrophy (MD) was present in 34 participants, congenital myopathy in 23, and facioscapulohumeral muscular dystrophy (FSHM) in 26. The remaining less common HNMDs are shown in Table 1. In this study, 64.8% of participants were single, their mean age was 21.03 ± 9.35, and 55.3% were male. Thirty-nine percent of participants were educated to high school or university level, while 24.5% were illiterate. Participants physical dependence was evaluated using the FAC. The results showed that 24.5% were non-functional, 15.7% were supervision-dependent, and 59.7% were either independent on a flat surface or completely independent in terms of ambulation (Table 1).

A significant proportion of the participants in this study had moderate or severity anxiety. The mean general BAI score was 20.44±10.25. The participants' mean general BDI score was 21.03±9.35.

Table 1. Sociodemographic characteristics (n=159).

Descriptive characteristic	n	%
Sex		
Male	88	55.3
Female	71	44.7
Marital status		
Single	103	64.8
Married	56	36.2
Education level		
No formal education	39	24.5
Elementary-middle school	58	36.5
High school-university	62	39.0

Table 1 (continued). Sociodemographic characteristics (n=159).

Diagnosis		
	n	**%**
Duchenne/Becker Muscular Dystrophy (DMD/BMD)	3	1.9
Limb-Girdle Muscular Dystrophy (LGMD)	48	30.2
Facioscapulohumeral Muscular Dystrophy (FSHM)	26	16.4
Myotonic Dystrophy (MD)	34	21.4
Congenital Myopathy (CM)	33	20.8
Other Myopathies	5	3.1
Hereditary Polyneuropathy (HP)	10	6.2
FAC		
Non-functional (FAC score: 0 and 1)	39	24.5
Supervision-dependent (FAC score: 2 and 3)	25	15.8
Independent on a Flat Surface and Completely Independent (FAC score: 4.5)	95	59.7
BAI		
Minimal (<7)	16	10.1
Mild (8-15)	40	25.2
Moderate (16-25)	57	35.8
Severe (>26)	35	28.9
BDI		
Minimal (<9)	38	23.9
Mild (10-16)	37	23.3
Moderate (17-29)	51	32.1
Severe (>30)	33	20.7

Mild or severe depressive symptoms were determined in 76.1% of the participants. Relationship between sociodemographic characteristics and various risk factors and mean BDI scores are shown in Table 2. No statistically significant relationship was found between sex and severity of depression in individuals with HNMD (p=0.483). However, women had significantly higher anxiety levels than men (p=0.018). No significant association was also found between participants' marital status, level of education, or body mass index and mean BDI or BAI scores. Mean BAI levels were significantly higher among individuals with HNMD aged 36 or over compared to those aged 18-24 (p=0.040). Analysis revealed a significant association between physical dependency and mean BDI (p=0.007) and BAI (p=0.001) scores. At post hoc analysis mean BDI and BAI scores were significantly higher in the non-functional group (FAC score:0 and 1) compared to the independent on a flat surface and completely independent group (FAC score: 4 and 5), while no association was determined between the other groups. Weak negative correlation was detected between participants' physical ambulation levels and total BAI and BDI scores (0.150< r<0.350; p<0.005). Weak positive correlation was observed between the age of patients with HNMD and total BAI scores (0.150< r<0.350; p<0.005), while no correlation was found between BDI scores and age (-0.150< r<-0.150; p>0.005). No correlation was found between total BAI and BDI scores and the other parameters of Body Max Index (BMI), age at diagnosis, or number of siblings (-0.150< r<-150; p>0.005) (Table 3).

Table 2. Correlations between sociodemographic characteristics and various risk factors and mean BDI Score (n=159).

Variables	**Groups**	**n**	**BDI**		**BAI**		**Test/p values**	
			Mean	**SD**	**Mean**	**SD**	**BDI**	**BAI**
Sex	Male	88	20.56	9.19	18.72	9.18	t:-0.703 p:0.483	t:-2.389 p:0.018
	Female	71	21.61	9.58	22.57	11.13		
Marital status	Single	103	21.23	9.37	21.27	10.45	t:0.558 p:0.578	t:-1.579 p:0.116
	Married	53	20.35	9.05	18.54	9.70		
Age	18-25[A]	54	20.38	8.46	18.03	8.66	F:3.544 p:0.031 C>B	F:3.293 p:0.040 C>A
	26-35[B]	44	18.63	7.97	20.06	11.17		
	Above 36[C]	61	23.34	10.56	22.85	10.47		

Table 2 (Continued). Correlations between sociodemographic characteristics and various risk factors and mean BDI Score (n=159).

Education	No formal education	39	23.07	8.92	20.71	9.56	F:1.25 p:0.289	F:2.118 p:0.124
	Elementary-middle school	58	20.55	9.66	22.32	11.02		
	High school or university	62	20.20	9.28	18.51	9.72		
Body mass index (kg/m^2)	>18.5	19	21.94	8.43	24.89	11.21	F:0.658 p:0.579	F:2.425 p:0.068
	18.5-24.99	86	20.98	8.72	19.46	9.49		
	25-24.99	39	21.84	10.20	21.87	10.77		
	< 25	15	18.06	11.78	16.73	10.45		
FAC	(FAC: 0-1)[A]	39	24.94	10.77	25.10	10.82	F:5.166 p:0.007 A>C	F:7.454 p:0.001 A>C
	(FAC:2-3)[B]	25	21.24	8.84	22.16	10.42		
	(FAC:4-5)[C]	95	19.37	8.43	18.08	9.28		

Table 3. Factors associated with BDI and BAI (n=159).

Variables	**FAC**		**BMI**		**Age**		**Age at Diagnosis**		**Number of Siblings**	
	r	**p**	**r**	**p**	**r**	**p**	**r**	**p**	**r**	**p**
BAI	-0.283	0.029	-0.029	0.719	0.175	0.027	-0.023	0.467	0.092	-0.248
BDI	-0.232	0.003	0.022	0.782	0.099	0.219	0.058	0.773	-0.017	0.836

DISCUSSION

A large part of the individuals diagnosed with HNMDs in this research (32.1%) exhibited moderate depression levels. Similarly, a study of patients with different HNMDs reported a prevalence of depression of 32.5% (Mori-Yoshimura et al., 2019), while a meta-analysis reported a depressed rate of 18% and an anxiety disorder rate of 24% (Pascual-Morena et al., 2022). Another study involving 47 patients diagnosed with muscular dystrophy (spinal muscular atrophy, LGMD, and FSHM) reported mild depression (32%) in a large proportion of participants, while a few exhibited moderate depressive symptoms (Winblad et al., 2010). Comparable research in the literature have also reported widespread occurrences of depression in such different HNMDs as LGMD (Peric et al., 2018), myasthenia gravis (MG) (Parada et al., 2014), and multiple sclerosis (Feng et al., 2020; Ozer et al., 2010). A meta-analysis of 38 studies of patients with MG determined a depression rate of 36% and an anxiety rate of 33% (Nadali et al., 2023). A study of patients with Duchene muscular dystrophy observed emotional/behavioral disorders at a rate of 38.7% (Darmahkasih et al., 2020). In another study, 23% of patients with LGMD and asymptomatic hyperckemia met the criteria for major depressive disorder (Feng et al., 2020). This and other studies indicate a high prevalence of depression in individuals with HNMDs. This makes it essential to prioritize interventions aimed at depression in psychological support activities specific to individuals with HNMD. Moderate (35.8%) or severe (28.9%) levels of anxiety were observed in the majority of individuals diagnosed with HNMD in the present study. Similarly, an anxiety rate of 40.0% and a depression rate of 25.2% were reported in patients with spinal muscular atrophy (Yao et al., 2021). Research from Turkey determined a prevalence of trait anxiety of 20.5% in BMD, FSHM, LGMD, and MD (Ozer et al., 2010). High levels of anxiety can adversely affect individuals' psychological health by over-rising their adaptive coping mechanisms. Another finding of the present study, and one supported by the literature is the positive association (Parada et al., 2014) between anxiety and depression, showing that depression and anxiety are psychological disorders that should be considered together in psychological support studies for individuals with HNMDs. The sociodemographic variable of age groups was found to affect both depression and anxiety levels in individuals with HNMD in the present study. However, no relationship was found between anxiety and depression levels and education level, marital status, or body mass index. Similarly, only the age variable has been found to be associated with DM2, HMSN-I and amyotrophic lateral sclerosis has been shown to decline with age (Feng et al., 2020; Peric et al., 2018; Winter et al., 2010). Research has emphasized the link between depression and decreased quality of life in HNMDs (Feng et al., 2020; Messina et al., 2016; O'Dowd et al., 2021). This research shows that prognosis varies among the different disease groups in the study. For example, while prognosis is poor in patients with LGMD, there were also diseases with a better course in the study group, such as MD. However, subsequent function loss associated with muscle weakness applies in all HNMDs (Dahlqvist et al., 2020). During this process, complications or various negativities related to HNMD may be expected to occur with increasing age. Decreased quality of life with advancing age and increased disability due to the progressive nature of the disease may account for inadequacy of the individual's

current coping resources, and the increase in depression and anxiety. Women diagnosed with HNMDs had higher levels of anxiety than men in the present study. However, while mean depression levels were also higher among women, this was not statistically significant. Similar research confirms that anxiety and depressive disorders are more frequent among women in chronic diseases such as MG (Parada et al., 2014). The researchers suggested that women exposed to such chronic diseases also had a higher probability of reporting depression (Darmahkasih et al., 2020; Nadali et al., 2023). Even in the absence of any chronic disease, women's biology, psychological characteristics, methods of coping with problems, and societal and cultural position all make them more susceptible to depression. Susceptibility to depression and anxiety in such chronic diseases, particularly among women, must therefore be prioritized. Another important finding of the present study is that functional ambulation levels are a significant factor affecting depression and anxiety levels in patients with HNMDs. Hypotheses suggesting that the progressive nature of the illness contributes to the depressive state support the findings of the present study (Darmahkasih et al., 2020; Nadali et al., 2023). Several studies of both healthy individuals and various disease groups have shown that physical activity impacts positively on depression (Feng et al., 2020; Parada et al., 2014). A meta-analysis involving a large sample group with more than one chronic disease showed that physical health is a factor affecting depression levels (O'Dowd et al., 2021). From that perspective, depression and anxiety are an important risk factor, especially in individuals with HNMD who experience severe physical dependence (FAC: 0-1). No correlation was found between age at diagnosis of HNMD and anxiety or depression. Similarly, no relationship has been determined between age at diagnosis and anxiety or depression scores among patients with LGMD (Peric et al., 2018). However, in contrast to these findings, an association between age at onset and depression in patients with LGMD and asymptomatic hyperckemia (Feng et al., 2020). Another study reported negative correlation between age at diagnosis and anxiety levels in patients with MG, but no association was observed with depression (Parada et al., 2020). Research has produced inconsistent findings concerning age at diagnosis and depression and anxiety. More specific research is therefore needed to elucidate the effect mechanism of age at onset.

Limitations and Strengths of the Study

The important finding of the present study is that functional ambulation levels are a significant factor affecting depression and anxiety levels in patients with HNMDs. The inability to reach sufficient samples from some subgroups of HNMDs in this study is an important limitation. In addition, due to the cross-sectional nature of the study, it was not possible to comment on the anxiety and depression levels of patients with HNMDs over time. Future research might usefully consider the effects of HNMDs in the long term. In addition, studies involving more samples from different HNMD subgroups may provide useful information about the rates of depression and anxiety among different groups.

CONCLUSION

The fact that the level of physical ambulation is an important determinant of depression in patients with HNMDs indicates that individuals with HNMDs who have physical limitations should be followed closely. It is important to follow the medical treatment at the primary and secondary prevention level in HNMDs patients who do not have physical limitations yet. When the loss of physical ambulation is irreversible in HNMDs patients, rehabilitation and psychosocial support for HNMDs patients with increased physical limitations may provide support in controlling depression. In addition, it may be a precaution to employ HNMDs whose physical ambulation level has reached the level of addiction in a profession they can carry out in order not to be separated from the society and to gain a place in the society. The physical therapy process of patients who have reached the level of physical addiction and informing their caregivers are important issues that should be done at the tertiary prevention level.

Conflict of Interest

The author declares no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: AT, HB, FA; **Material, methods and data collection:** AT, HB, FA; **Data analysis and comments:** AT, HB, FA; **Writing and corrections:** AT, HB, FA.

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Evaluation of the Relationship between Oral Care Practices, Food Consumption, and Dental Caries in Young Adults

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ABSTRACT

Objective: Dental caries is an important public health problem that affects the majority of the world's population. In this study, it was aimed to evaluate the relationship between oral care practices, food consumption and DMFT (D: decayed, M:missing, F: filled, T: teeth) index in young adults. **Material and Methods:** The general characteristics of individuals, oral care practices, anthropometric measurements and food consumption frequencies were questioned with the questionnaire form. The DMFT index was calculated by questioning the number of decayed, missing and filled teeth of the individuals. **Results:** The mean DMFT index of females was 2.5±1.6, and the mean of DMFT index of males was 2.0±1.6, and a significant difference was determined between the sexes in terms of mean DMFT index ($p<0.05$). According to linear regression analysis, age, sex, frequency of tooth brushing, having a dental examination and smoking status were effective on DMFT index ($R^2=0.098$; $p<0.001$). A positive statistically significant correlation was found between the frequency of consumption of cariogenic foods such as honey, jam, molasses, pastry desserts, sugar added tea/coffee, fruit juices, acidic beverages, alcoholic beverages and packaged foods and the DMFT index ($p<0.05$). **Conclusion:** Nutritional habits are as important as oral care practices in the prevention of dental caries.

Keywords: Anticariogenic Foods, Cariogenic Foods, DMFT Index, Karyostatic Foods, Oral Care.

Genç Yetişkinlerde Ağız Bakımı Uygulamaları, Besin Tüketimi ve Diş Çürükleri Arasındaki İlişkinin Değerlendirilmesi

ÖZ

Amaç: Diş çürükleri dünya nüfusunun büyük bir bölümünü etkileyen önemli bir halk sağlığı sorunudur. Bu çalışmada genç yetişkinlerde ağız bakımı uygulamaları, gıda tüketimi ve DMFT (D: çürük, M: eksik, F: dolgulu, T: diş) indeksi arasındaki ilişkinin değerlendirilmesi amaçlanmıştır. **Gereç ve Yöntem:** Anket formu ile bireylerin genel özellikleri, ağız bakım uygulamaları, antropometrik ölçümleri ve besin tüketim sıklıkları sorgulanmıştır. Bireylerin çürük, eksik ve dolgulu diş sayıları sorgulanarak DMFT indeksi hesaplanmıştır. **Bulgular:** Kadınların ortalama DMFT indeksi 2.5±1.6, erkeklerin 2.0±1.6 olup, ortalama DMFT indeksi açısından cinsiyetler arasında anlamlı fark saptanmıştır ($p<0.05$). Lineer regresyon analizine göre yaş, cinsiyet, diş fırçalama sıklığı, diş muayenesi olma ve sigara içme durumu DMFT indeksi üzerinde etkilidir ($R^2=0.098$; $p<0.001$). Karyojenik besinlerden bal, reçel, pekmez, hamur işi tatlılar, şeker eklenmiş çay/kahve, meyve suları, asitli içecekler, alkollü içecekler ve paketli gıdalar tüketim sıklığı ile DMFT indeksi arasında pozitif yönde istatistiksel olarak anlamlı korelasyon saptanmıştır ($p<0.05$). **Sonuç:** Diş çürüğünün önlenmesinde ağız bakım uygulamaları kadar beslenme alışkanlıkları da önemlidir.

Anahtar Kelimeler: Antikaryojenik Besinler, Karyojenik Besinler, DMFT İndeksi, Karyostatik Besinler, Ağız Bakımı.

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INTRODUCTION

Dental caries, which is among the oral health problems, is an important public health problem affecting 80% of the world population. Oral health is an integral part of general health. In terms of health services, the treatment of dental caries is costly and adversely affects the quality of life of individuals when left untreated (Baniasadi et al., 2021; P. Moynihan, 2016). Today, the relationship between nutrition and many communicable and non-communicable diseases has been revealed, and the role of nutrition is also important in preventing dental caries, which is the most common oral health problem. The teeth are exposed to local chemical and mechanical effects when the foods consumed in the diet come into contact with the teeth. Dental caries occurs as a result of the fermentation of the consumed carbohydrate source foods and the demineralization of the organic acids produced by the bacteria in the dental biofilm. Initial carious lesions without cavitation on the tooth surface can be remineralized with a low cariogenic diet and good oral hygiene practices. However, once the tooth surface is fractured and cavitation occurs, restorative dental treatment is required as remineralization is no longer possible (Imfeld, 2008).

Oral care practices and nutrition are effective in the development of dental caries (AM & Nieto, 2013; Pyle & Stoller, 2003). The type of food consumed and the frequency of consumption are important in protecting oral and dental health (Cascaes et al., 2022; Sanz et al., 2013). Unhealthy eating habits cause an increase in the incidence of dental caries and the DMFT (D: decayed, M:missing, F: filled, T: teeth) index value, which is the sum of the average number of decayed, missing and filled permanent teeth and shows the severity of dental caries (Moradi et al., 2019). Foods are classified as cariogenic, anticariogenic and karyostatic according to their potential to cause dental caries. Cariogenic foods are foods that contain carbohydrates that can be fermented by microorganisms and accelerate the decay process. With the consumption of these foods, microorganisms in the mouth cause organic acid formation, causing the pH of saliva to fall below 5.5 and caries formation. Candies, confectionery, foods containing sugar (cake, pastry, cookies, etc.), honey, jam, molasses, pastry desserts, milk desserts, beverages with added sugar are among the cariogenic foods. Anticariogenic foods are foods that increase salivary pH to alkaline levels, promote enamel reminalization, and reduce the rate of tooth decay. Milk and dairy products (cheese, yogurt, etc.) are anticariogenic. Karyostatic foods are foods that do not contribute to dental caries and are not metabolized by microorganisms. Eggs, fish, meat, poultry, raw vegetables, seafood and oilseeds are karyostatic (Galhotra et al., 2014; Liliana et al., 2019).

The effect of nutrition on the dental health of individuals was investigated in various age groups. Studies on this subject, especially in children (Murshid, 2014; Ruottinen et al., 2004; Zahara et al., 2010) and elderly individuals (Kazemi et al., 2011; Tsai & Chang, 2011; Walls & Steele, 2004), are included in the literature.

The number of studies that associate nutrition with dental health in adults is limited (Ceylan et al., 2004; Koletsi-Kounari et al., 2011). Young adults can show unhealthy eating habits for various reasons. It has been determined that the consumption of sugar-added beverages and foods containing sugar is high in these individuals (Kim et al., 2017; Lula et al., 2014; Shetty, 2021). Dietary sugars are the most important risk factors for dental caries (P. Moynihan, 2016; P. Moynihan et al., 2018). In this study, it was aimed to evaluate the relationship between oral care practices, food consumption and DMFT index (dental caries) in young adults.

MATERIALS AND METHODS

Study type

This descriptive and cross-sectional study was conducted to evaluate the relationship between oral care practices, food consumption and dental caries in young adults.

Study group

The study was conducted with 525 adults aged 18-23 years in Turkey between 5 October and 10 November 2022. Research data were collected with the help of a web-based questionnaire. Researchers create data collection tools through google surveys. The sample size was not calculated as the researchers attempted to reach the maximum study size. The sample of the study was formed by the individuals who ticked the 'I consent to participate in this study voluntarily' tab at the beginning of the form and filled out the questionnaire completely.

Dependent and independent variables

The independent variables of this research are sex and age. The dependent variables are body mass index (BMI), DMFT index, smoking status, oral care practices and frequency of food consumption.

Procedures

Research data were collected with the help of a web-based questionnaire. The general characteristics of individuals, oral care practices, anthropometric measurements (body weight and height) and food consumption frequencies were questioned with the questionnaire form. The DMFT index was calculated by questioning the number of decayed, missing and filled teeth of the individuals.

DMFT Index: The DMFT index is defined as the total number of decayed, missing and filled teeth. According to the World Health Organization, this index, which is used to evaluate dental caries, is evaluated as 'very low' if <5.0, 'low' between 5.0-8.9, 'moderate' between 9.0-13.9, and 'high' if >13.9 (Petersen et al., 2005).

The number of decayed, missing and filled teeth (DMFT index) was recorded as self-report. In previous dental health studies, it was stated that self-report was similar to the results obtained by clinical and radiographic examination (Levin et al., 2013; Kazemi et al., 2016; Myers-Wright et al., 2018).

Anthropometric Measurements: Height and body weight measurements were taken based on the self-reports of individuals. Individuals were Height and body weight measurements were taken based on the self-reports of individuals. Individuals were informed about

how to take anthropometric measurements in the questionnaire form. The BMI value was calculated by dividing the body weight by the square of the height. Body mass index below 18.50 kg/m^2 was classified as underweight, between 18.50–24.99 kg/m^2 as normal, between 25.0–29.99 kg/m^2 as overweight, and above 30.0 kg/m^2 as obese (Gibson, 2005).

Frequency of Food Consumption: The frequency of anticariogenic (cheese, milk, yoğurt), cariogenic (eggs, red meat, chicken, fish, raw vegetables, oilseeds) and karyostatic food (honey, jam, molasses, milk desserts, pastry desserts, chocolate, sugar added tea/coffee, fruit juices, acidic beverages, alcoholic beverages, packaged foods) consumption of individuals was questioned with the questionnaire created by the researchers. Consumption 3 times a week or more is classified as 'very often', consumption 1-2 times a week as 'frequent', consumption once in 15 days and once a month as 'rarely' and no consumption as 'never'.

Statistical analysis

The Statistical Package for the Social Sciences (version 22.0) software was used for all analyses. Student's t test was used for the methods suitable for normal distribution in comparison of paired groups. Categorical variables were evaluated using the Chi-square test. Relationships between numerical variables are given by Pearson correlation coefficient. The factors affecting the DMFT index were estimated using a linear regression model. The results were evaluated at the 95% confidence interval, statistically at $p<0.05$ significance level.

The G* Power program (version 3.1.9 Universität Düsseldorf, Düsseldorf, Germany) was used for post-hoc power analysis. The results of the "Multiple Regression Analysis" (Table 6) conducted to test the primary hypothesis of the study were used in the post-hoc power analysis. When the statistical significance of alpha was 5%, R^2 was 0.146, the number of predictor variables was 9, and the sample size was 525, it was seen that the post-hoc power (1-β) exceeded 99.9%.

Ethical considerations

Before starting the study, ethical approval with the decision number 19/20 dated 03.10.2022 from Trakya University Faculty of Medicine Dean's Office of Ethics Committee for Non-Invasive Scientific Research. All procedures in the study were carried out in accordance with the Declaration of Helsinki. The individuals who ticked the 'I consent to participate in this study voluntarily' tab at the beginning of the form were included in the study.

RESULTS

The study was completed with 525 adult individuals. The mean age of the individuals was 20.8±1.3 years, and the mean BMI was 21.6±2.83 kg/m^2. 76.6% of the individuals were normal weight, 9.1% were overweight and 2.1% were obese. 25.1% of the individuals were smoking (Table 1).

19.4% of the individuals stated that they brush their teeth once a day, 62.9% twice a day, and 17.1% three times a day or more. 54.3% of individuals were not using dental floss. While 22.5% of the individuals had regular dental examination, 60.0% had a dental examination when there was a problem, and 17.5% did not have any dental examination. There was a statistically significant difference between the sexes in terms of tooth brushing, flossing and having a dental examination ($p<0.05$). The mean DMFT index of female individuals was 2.5±1.6, and the mean of DMFT index of male individuals was 2.0±1.6, and a significant difference was determined between the sexes in terms of mean DMFT index ($p<0.05$). There was no significant difference between the sexes according to the DMFT index classification ($p>0.05$) (Table 2).

Table 1. General characteristics of individuals.

Variables	n(%)
Sex	
Female	421(80.2%)
Male	104 (19.8%)
BMI classification	
Underweight (<18.50 kg/m^2)	64 (12.2%)
Normal (18.50-24.99 kg/m^2)	402 (76.6%)
Overweight (25.00-29.99 kg/m^2)	48 (9.1%)
Obese (≥30.0 kg/m^2)	11 (2.1%)
Smoking status	
Yes	132 (25.1%)
No	393 (74.9%)
	$\bar{X}$±SD
Age (years)	20.8±1.3
BMI (kg/m^2)	21.6±2.83

BMI= Body Mass Index, $\bar{X}$±SD= Mean±Standart Deviation.

According to linear regression analysis, age, sex, frequency of tooth brushing, having a dental examination and smoking status were effective on DMFT index ($R^2=0.098$; $p<0.001$) (Table 3).

There was a statistically significant negative correlation between the frequency of consumption of cariogenic foods such as eggs, red meat, chicken and raw vegetables and the DMFT index; a positive statistically significant correlation was found between the frequency of consumption of cariogenic foods such as honey, jam, molasses, pastry desserts, sugar added tea/coffee, fruit juices, acidic beverages, alcoholic beverages and packaged foods and the DMFT index ($p<0.05$). There was a statistically significant negative correlation between BMI and the frequency of consumption of cheese, milk, eggs, red meat and chicken; a statistically significant positive correlation was found between the frequency of consumption of cariogenic foods such as pastry desserts, sugar added tea/coffee, fruit juices, acidic beverages and packaged foods and BMI ($p<0.05$) (Table 4).

A statistically significant difference was found between the sexes in terms of consumption frequency of milk desserts, pastry desserts, chocolate, fruit juices, acidic beverages, alcoholic beverages and packaged foods ($p<0.05$) (Table 5).

According to the linear regression analysis, the frequency of cariogenic food consumption was effective on the DMFT index ($R^2=0.146$; $p<0.001$) (Table 6).

Table 2. Evaluation of oral care practices of individuals.

	Total	Female	Male	p value
	n(%)	n(%)	n(%)	
Brushing teeth				
Once a day	102(19.4)	54(12.8)	48(46.2)	$\chi2$=79.709
Twice a day	330(62.9)	280(66.5)	50(48.1)	**p<0.001***
Three times a day or more	90(17.1)	87(20.7)	3(2.9)	
Never	3(0.6)	-	3(2.9)	
Using dental floss				
Everyday	23(4.4)	18(4.3)	5(4.8)	$\chi2$=14.469
Sometimes	217(41.3)	191(45.4)	26(25.0)	**p=0.001***
Never	285(54.3)	212(50.4)	73(70.2)	
Having a dental examination				
Regular dental examination When there	118(22.5)	99(23.5)	19(18.3)	$\chi2$=26.229
was a problem	315(60.0)	266(63.2)	49(47.1)	**p<0.001***
Never	92(17.5)	56(13.3)	36(34.6)	
DMFT index	2.4±1.6	2.5±1.6	2.0±1.6	**p=0.001*[a]**
DMFT index classification				
Very low (<5.0)	423(80.6)	336(79.8)	87(83.7)	$\chi2$=0.787
Low (5.0-8.9)	102(19.4)	85(20.2)	17(16.3)	p=0.375

DMFT=Decayed, M=missing, F=filled, T= teeth, [a]Student's t test, other tests Chi-square test, *p<0.05.

Table 3. Regression model for the DMFT index according to demographic characteristics and oral care practices.

	DMFT index					
Model	**Unstandardized B**	**Coefficients Std. Error**	**Standardized Coefficients Beta**	**95.0% Confidence Interval for B**	**p value**	**VIF**
Age (years)	0.212	0.053	0.171	0.107-0.317	**<0.001***	1.064
Sex	-0.756	0.201	-0.186	-1.151--0.361	**<0.001***	1.396
BMI (kg/m^2)	0.040	0.027	0.090	0.054-0.113	0.058	1.287
Frequency of tooth brushing	-0.493	0.120	-0.189	-0.728--0.257	**<0.001***	1.210
Frequency of use of dental floss	-0.170	0.126	-0.061	-0.416-0.077	0.156	1.158
Having a dental examination	-0.172	0.118	-0.100	-0.403--0.058	**0.046***	1.193
Smoking status	0.309	0.097	0.139	0.119-0.500	**0.001***	1.084
	R^2=0.098; p<0.001					

Sex '0' female , '1' male
Status of having a dental examination '0' no, '1' yes
Smoking status '0' no, '1' yes
M=missing, F= filled, T= teeth, BMI= Body Mass Index, VIF= Variance Inflation Factor, *p<0.05.

Table 4. Evaluation of the relationship between the frequency of food consumption and the DMFT index and BMI.

	DMFT index	BMI (kg/m^2)
Anticariogenic foods		
Cheese	r=-0.021	r=-0.164
	p=0.636	**p<0.001***
Milk	r=-0.036	r=-0.131
	p=0.409	**p=0.003***
Yogurt	r=-0.021	r=-0.025
	p=0.636	p=0.567
Karyostatic foods		
Eggs	r=-0.085	r=-0.213
	p=0.043*	**p<0.001***
Red meat	r=-0.179	r=-0.093
	p<0.001*	**p=0.032***
Chicken	r=-0.335	r=-0.088
	p<0.001*	**p=0.044***
Fish	r=-0.069	r=-0.028
	p=0.112	p=0.528
Raw vegetables	r=-0.115	r=0.081
	p=0.008*	p=0.064
Oilseeds	r=-0.010	r=-0.080
	p=0.814	p=0.067

Table 4 (continued). Evaluation of the relationship between the frequency of food consumption and the DMFT index and BMI.

	r /p	r /p
Cariogenic foods		
Honey	r=0.107 **p=0.014***	r=0.060 p=0.172
Jam	r=0.112 **p=0.011***	r=0.056 p=0.201
Molasses	r=0.126 **p=0.004***	r=0.047 p=0.278
Milk desserts	r=0.049 p=0.261	r=0.058 p=0.188
Pastry desserts	r=0.172 **p<0.001***	r=0.091 **p=0.037***
Chocolate	r=0.020 p=0.644	r=0.049 p=0.263
Sugar added tea/coffee	r=0.096 **p=0.024***	r=0.102 **p=0.024***
Fruit juices	r=0.136 **p=0.002***	r=0.094 **p=0.030***
Acidic beverages (cola, soda)	r=0.144 **p=0.001***	r=0.109 **p=0.013***
Alcoholic beverages	r=0.122 **p=0.005***	r=0.068 p=0.118
Packaged foods (chips, crackers, biscuits, cakes, etc.)	r=0.110 **p=0.012***	r=0.085 **p=0.046***

Pearson correlation coefficient, *p<0.05.
M=missing, F=filled, T=teeth, BMI= Body Mass Index.

Table 5. Evaluation of the frequency of cariogenic food consumption by sex.

	Female	Male	p / test value
	n(%)	n(%)	
Honey			
Very often	111(26.4)	23(22.1)	$\chi2$=2.594 p=0.459
Frequent	103(24.5)	33(31.7)	
Rarely	145(34.4)	35(33.7)	
Never	62(14.7)	13(12.5)	
Jam			
Very often	84(20.0)	23(22.1)	$\chi2$=2.189 p=0.534
Frequent	92(21.9)	28(26.9)	
Rarely	119(28.3)	28(26.9)	
Never	126(29.9)	25(24.0)	
Molasses			
Very often	89(21.1)	21(20.2)	$\chi2$=2.011 p=0.570
Frequent	47(11.2)	15(14.4)	
Rarely	151(35.9)	41(39.4)	
Never	134(31.8)	27(26.0)	
Milk desserts			
Very often	55(13.1)	9(8.7)	$\chi2$=15.063 p=**0.002***
Frequent	143(34.0)	29(27.9)	
Rarely	202(48.0)	50(48.1)	
Never	21(5.0)	16(15.4)	
Pastry desserts			
Very often	24(5.7)	13(12.5)	$\chi2$=9.071 p=**0.028***
Frequent	106(25.2)	33(31.7)	
Rarely	239(56.8)	48(46.2)	
Never	52(12.4)	10(9.6)	
Chocolate			
Very often	219(52.0)	41(39.4)	$\chi2$=45.749 p=**<0.001***
Frequent	147(34.9)	25(24.0)	
Rarely	55(13.1)	32(30.8)	
Never	-	6(5.8)	
Sugar added tea/coffee			
Very often	115(27.3)	32(30.8)	$\chi2$=4.453 p=0.217
Frequent	103(24.5)	18(17.3)	
Rarely	118(28.0)	37(35.6)	
Never	85(20.2)	17(16.3)	

Table 5 (continued). Evaluation of the frequency of cariogenic food consumption by sex.

	n(%)	n(%)	p / test value
Fruit juices			
Very often	43(10.2)	9(8.7)	$\chi2$=8.467 p=**0.037***
Frequent	145(34.4)	24(23.1)	
Rarely	182(43.2)	34(32.7)	
Never	51(12.1)	37(35.6)	
Acidic beverages			
Very often	51(12.1)	19(18.3)	$\chi2$=8.386 p=**0.039***
Frequent	143(34.0)	12(11.5)	
Rarely	46(10.9)	21(20.2)	
Never	181(43.0)	52(50.0)	
Alcoholic beverages			
Very often	1(0.2)	4(3.8)	$\chi2$=24.191 **p<0.001***
Frequent	18(4.3)	13(12.5)	
Rarely	144(34.2)	24(23.1)	
Never	258(61.3)	63(60.6)	
Packaged foods			
Very often	72(17.1)	12(11.5)	$\chi2$=36.844 p=**<0.001***
Frequent	152(36.1)	21(20.2)	
Rarely	148(35.2)	46(44.2)	
Never	49(11.6)	25(24.0)	

Chi-square test, *p<0.05.

Table 6. Regression model for DMFT index according to frequency of cariogenic food consumption.

	DMFT index					
Model	**Unstandardized B**	**Coefficients Std. Error**	**Standardized Coefficients Beta**	**95.0% Confidence Interval for B**	**p**	**VIF**
Honey	0.202	0.051	0. 236	0.043-0.461	**<0.001***	1.541
Jam	0.125	0.073	0.096	0.018-0.268	**0.046***	1.467
Molasses	0.206	0.048	0.241	0.191-0.591	**<0.001***	1.284
Pastry desserts	0.256	0.036	0.287	0.105-0.492	**<0.001***	1.293
Sugar added tea/coffee	0.271	0.073	0.216	0.128-0.415	**<0.001***	1.453
Fruit juices	0.196	0.090	0.179	0.157-0.530	**0.001***	1.749
Acidic beverages	0.132	0.076	0.121	0.049-0.236	**0.005***	1.418
Alcoholic beverages	0.497	0.100	0.211	0.101-0.693	**<0.001***	1.079
Packaged foods	0.328	0.101	0.176	0.130-0.526	**0.002***	1.029
	R^2=0.146; p<0.001					

M=missing, F=filled, T=teeth, VIF=Variance Inflation Factor, *p<0.05.

DISCUSSION

Oral health is an integral part of general health and is closely related to health status. Today, it is known that nutrition is very important in the protection, development and improvement of oral and general health. Oral health problems are especially associated with excessive and frequent sugar consumption, unhealthy (poor) diet, tobacco and alcohol use, and poor oral hygiene, that is, improper oral care practices (Mohan, 2015; Peres et al., 2019). In this study, it was aimed to evaluate the relationship between oral care practices, food consumption and DMFT index (dental caries) in young adults with a high incidence of dental caries among oral health problems.

Oral and dental health studies carried out in Turkey are limited in number (Gökalp et al., 2006; Sağlık Bakanlığı, 2021). Individuals of various ages and age groups are included in the DMFT index recommended by the World Health Organization (Petersen et al., 2005). In this study, young adults between the ages of 18-23 were included and the number of decayed, filled and missing teeth, nutritional habits and oral care practices were questioned. According to the results of the Turkey Oral and Dental Health Profile 2004 (TADSAP-2004) and 2018 (TADSAP-2018) studies conducted throughout the country, in which adult individuals' oral care practices and their use of health services for oral health are evaluated, the rate of not going to a dentist has increased over the years (TADSAP-2004: 4.9%; TADSAP-2018: 6.1%) (Gökalp et al., 2006; Sağlık Bakanlığı, 2021). In the results of this study, it was determined that 17.5% of the individuals did not go to the dentist and did not have any dental examination. It has been stated in the Turkey Oral and Dental Health Profile studies that the habit of brushing teeth, which has an important place in oral care practices, has increased over the years (TADSAP-2004: 22.1%; TADSAP-2018: 25.1%) (Gökalp et al., 2006; Sağlık Bakanlığı, 2021). In this study, it was determined that more than half of the individuals (62.9%) brushed their teeth twice a day.

The DMFT index is the most commonly used index in dental caries epidemiology worldwide. The index is also very useful in monitoring the course of dental caries (Worthington & Craven, 1998). In this study, the DMFT index values of the individuals were calculated, the mean DMFT index of female individuals was 2.5±1.6, and the mean DMFT index of male individuals was 2.0±1.6, and a significant difference was determined between the sexes in terms of mean DMFT index ($p<0.05$). According to the World Health Organization DMFT index classification, the degree of dental caries was found to be low in both female and male. According to the results of the Turkey Oral and Dental Health Profile studies, when 2004 and 2018 were compared, it was stated that the DMFT index value was higher in female than in male in both studies, and the mean DMFT index of individuals decreased from 11.2 to 8.8. One of the most important reasons for this decrease is the increase in awareness in oral care practices and the widespread use of these practices (Gökalp et al., 2006; Sağlık Bakanlığı, 2021). As a result of this study, it was determined that sex, frequency of tooth brushing and having a dental examination were effective on the DMFT index. Studies revealing the relationship between obesity and oral health problems and dental caries have been carried out especially in the pediatric population (Costacurta et al., 2011; Kesim et al., 2016). It is thought that the relationship between DMFT and BMI is weak because the sample in this study was adult individuals and the number of obese and overweight individuals in the study was low. The reason for the increase in dental caries, which is among the oral health problems, is the increase in the consumption frequency and amount of fermentable carbohydrates (Lagerweij & van Loveren, 2020). It is stated that there is a positive correlation between the consumption of cariogenic foods with high fermentable carbohydrate content and the increase in the prevalence of dental caries. In addition, the frequency and amount of simple carbohydrates consumed in the diet plays a fundamental role in the etiology of dental caries. Consumption of foods/beverages with added sugar and foods high in simple carbohydrates increase the incidence of dental caries (Chi & Scott, 2019; P. J. Moynihan & Kelly, 2014). In the results of this study, a positive statistically significant correlation was found between the frequency of consumption of cariogenic foods such as honey, jam, molasses, pastry desserts, sugar added tea/coffee, fruit juices, acidic beverages, alcoholic beverages and packaged foods and the DMFT index ($p<0.05$). According to the linear regression analysis, the frequency of cariogenic food consumption has an effect on the DMFT index ($R^2=0.146$; $p<0.001$). In addition, the frequency of consumption of milk desserts, chocolate, ready-made fruit juices, acidic beverages and packaged foods was higher in female than male, and accordingly, the mean DMFT index of female was found to be higher than male ($p<0.05$). In order to prevent dental caries in individuals, consumption of foods with high simple carbohydrates content should be avoided. The World Health Organization has recommended that the daily consumption of simple carbohydrates be reduced, and even that the energy from simple carbohydrates should ideally not exceed 5% of the total daily energy intake for the reduction of dental caries throughout life (World Health Organization, 2017). In order to protect oral health and prevent dental caries, it is important for individuals to consume anticariogenic and karyostatic foods that increase saliva pH to alkaline level, support enamel reminalization and reduce the rate of dental caries, as well as reduce the frequency and amount of simple carbohydrates consumption. These foods have preventive properties in the formation of dental caries because they are not metabolized by microorganisms in the mouth and can increase the oral pH value by increasing the salivary flow rate (P. Moynihan et al., 2018). In this study, a statistically significant negative correlation was found between the frequency of consumption of eggs, red meat, chicken and raw vegetables, especially among the karyostatic foods, and the DMFT index ($p<0.05$).

Limitations of Study

The first limitation of this study is that only individuals who could be reached online participated in the study. The second imitation of the study was that the DMFT index was calculated by questioning the number of decayed, missing and filled teeth of the individuals. Another limitation of the study is that education level and income status, which are possible factors related to nutritional status, were not questioned in the study.

CONCLUSION

Nutritional habits are as important as oral care practices in the prevention of dental caries, which we encounter as an important public health problem throughout the society. It is necessary to improve preventive health services throughout the society, and regular oral examinations should be carried out. In addition, it is important to develop nutritional strategies for dental health within the scope of preventive health services. In line with the recommendations of the World Health Organization, the frequency and amount of consumption of foods with a high content of simple carbohydrates should be limited. Individuals should include foods with high anticariogenic and karyostatic effects in their diets more frequently.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: ÖMÇ, SD; **Material, methods and data collection:** ÖMÇ, SD **Data analysis and comments:** ÖMÇ, MŞKE, SD, EMŞ **Writing and corrections:** ÖMÇ, MŞKE, SD, EMŞ.

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Determining Opinions of Individuals About Covid-19 Pandemic and Vaccines and Evaluation of Covid-19 Phobia

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ABSTRACT

Objective: To determine the opinions of individuals about the Covid-19 disease and vaccines and to evaluate the Covid-19 phobia. **Methods**: This is a cross-sectional and descriptive study. The data of the study were collected online using the snowball sampling technique between February and March 2021 (n=530). Data collections tools were Participant Information Form and Covid-19 Phobia Scale. **Results:** It was determined that 17% of the participants had Covid-19 disease, and 40.8% saw themselves at a moderate risk in terms of getting Covid-19. It was determined that 56.1% of those who were not diagnosed with Covid-19 and 52.2% of those who were diagnosed with Covid-19 were slightly afraid of getting Covid-19. It was determined that 44.7% of the participants were indecisive about being vaccinated and 50.2% of these people stated that they were indecisive because the side effects of the vaccines were unknown. There was no statistically significant difference between the total and sub-dimensions mean scores of the Covid-19 Phobia Scale among those who answered yes, no and indecisive about vaccination. A statistically significant difference was found between the fear of catching Covid-19 for the first time and the total and sub-dimension mean scores of the Covid-19 phobia scale ($p<0.05$). **Conclusion:** Our study showed that individuals were afraid of getting Covid-19 and most people were indecisive about being vaccineted due to the unknown side effects.

Keywords: Covid-19 Phobia, Covid-19 Disease, Covid-19 Vaccine.

Bireylerin Covid-19 Hastalığı ve Aşıları Hakkındaki Görüşlerinin Belirlenmesi ve Covid-19 Fobisinin Değerlendirilmesi

ÖZ

Amaç: Bu çalışmanın amacı, bireylerin Covid-19 hastalığı ve aşıları hakkındaki görüşlerinin belirlenmesi ve Covid-19 fobisinin değerlendirilmesidir. **Yöntem:** Bu çalışma, kesitsel ve tanımlayıcı bir araştırmadır. Araştırmanın verileri, Şubat-Mart 2021 tarihleri arasında kartopu örnekleme tekniği kullanılarak çevrimiçi olarak toplanmıştır (n=530). Veri toplama araçları Katılımcı Bilgi Formu ve Covid-19 Fobi Ölçeği'dir. **Bulgular:** Katılımcıların %17'sinin Covid-19 hastalığını geçirdiği, %40.8'inin Covid-19'a yakalanma açısından kendilerini orta dereceli riskli gördüğü belirlenmiştir. Covid-19 tanısı almayanların %56.1'inin; Covid-19 tanısı alanların ise %52.2'sinin covid-19'a yakalanmaktan biraz korktukları saptanmıştır. Katılımcıların %44.7'sinin aşı olma konusunda kararsız olduğu belirlenmiş olup; bu kişilerin %50.2'si aşıların yan etkileri bilinmediği için kararsız olduğunu ifade etmiştir. Aşı olma konusunda evet, hayır ve kararsızım yanıtlarını verenlerin Covid-19 Fobisi Ölçeği toplam ve alt boyutları puan ortalamaları arasında istatiksel olarak anlamlı bir fark bulunmamıştır. Covid-19'a ilk kez yakalanma korkusu ile Covid-19 fobi ölçeği toplam ve alt boyut puan ortalamaları arasında istatiksel olarak anlamlı fark bulunmuştur ($p<0.05$). **Sonuç:** Çalışmamız bireylerin Covid-19'a yakalanma korkusu yaşadıklarını ve çoğu kişinin aşıların yan etkilerinin bilinmemesinden dolayı aşı olmak konusunda kararsız olduklarını göstermiştir.

Anahtar Kelimeler: Covid-19 Fobisi, Covid-19 Hastalığı, Covid-19 Aşısı.

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INTRODUCTION

The Covid-19 epidemic, which was declared as a pandemic by the World Health Organization (WHO) on March 12, 2020, greatly affected the lives of all people (Hui et al., 2020). It has caused psychological, social, political and economic problems in the society due to the constant exposure of people to the news of the virus, the fear of catching the virus, the important effects of the virus on human life, as well as high mortality rates (Hui et al., 2020; Vindegaard and Benros 2020). In this process, individuals experienced feelings of fear, panic and anxiety, which are the most important psychological effects of the pandemic (Arpaci et al., 2020; Kim and Song 2017). In a study conducted in China (n=1210); while 53.8% of the participants evaluated the psychological impact of the pandemic as moderate or severe; 16.5% reported moderate to severe depressive symptoms, 28.8% moderate to severe anxiety, and 8.1% of the people stated as moderate to severe stress (Wang et al., 2020). Because of the seriousness and effects of the pandemic, the most common emotion is fear and phobia. When the fear of catching the virus and infecting others becomes uncontrollable, it turns into a phobia. Phobias are the state of extreme fear of something negatively affecting the daily life of the individual. The constant and extreme fear against the Covid-19 virus and the negative impact of this situation on the person's life are defined as Covid-19 phobia (Arpaci et al., 2020). Covid-19 phobia affects the attitudes of individuals towards the virus, precautions taken and vaccines developed against the virus. In controlling infectious diseases, which are the biggest cause of illness and death of people from past to present; improved environmental conditions as well as immunization services made the biggest contribution (Ketrez et al., 2020). Vaccines developed against the Covid-19 virus (Chinese vaccine, Biontech vaccine, etc.) have become the most important subject of our daily life. In this process, the society has been constantly exposed to news about Covid-19 disease and vaccines on television, newspapers and social media platforms. The fact that many of the social media posts contain false information has negatively affected the opinions of individuals, especially about the vaccine, and has increased their Covid-19 phobias. The success of the Covid-19 vaccination program depends on the public's willingness to be vaccinated.

The aim of this study; to determine the opinions of individuals about the Covid-19 disease and vaccines and to evaluate the Covid-19 phobia.

MATERIALS AND METHODS

Study type

This research was conducted as a cross-sectional.

Study group

This research was carried out with the participation of people living at various city in Turkey. The data of the study were collected online using the snowball sampling technique between February 1 and March 1, 2021. Inclusion criteria in the study were volunteering to participate in the research, using a smartphone and being over 18 years of age. The exclusion criteria from the sample were to have any psychological illness. The link of the questionnaire form prepared in Google Forms was shared on WhatsApp, Facebook and Instagram with the people and they were allowed to answer the questions after obtaining informed consent.

The G Power 3.1.9.6 program was used to calculate the sample size. Previous studies (Deniz et al., 2021) were reviewed and the expected confidence intervals of the "Covid-19 Phobia Scale" were determined, confidence interval α=0.05, power of the test (1-β) 0.80, effect size dz=0.2714367 while it was calculated as 338 people in total. 530 individuals who met the criteria for inclusion in the study constituted the sample of the study. As a result of the study, the power of the test was found to be 96%.

Dependent and independent variables

The independent variables of this research are gender, age, marital status, education status, employment status, occupation, cronic diseases presence, Covid-19 infection status, fear of getting infected with Covid-19, decision to get vaccinated, the dependent variable is Covid-19 phobia.

Procedures

Data collection tools were "Participant Information Form" and "Covid-19 Phobia Scale". In the Participant Information Form, there were 16 questions that determine the sociodemographic information of the individuals participating in the research, such as gender, age, occupation, marital status, education status, as well as the presence of chronic diseases, fear of contracting Covid-19, and their attitudes towards Covid-19 and vaccines.

Covid-19 Phobia Scale (C19P-S) is a 5-grade Likert-type self-assessment scale developed by Arpacı et al., to measure the phobia that can develop against coronavirus. There are 20 items in the scale. Scale items are evaluated between 1 "Strongly Disagree" and 5 "Strongly Agree". While Items 1st, 5th, 9th, 13th, 17th and 20th measure Psychological Sub-Dimension, Items 2nd, 6th, 10th, 14th, and 18th Somatic Sub-Dimension, Items 3rd, 7th, 11th, 15th, and 19th Social Sub-Dimension, 4th, 8th, 12th and 16th items measure the Economic Sub-Dimension. Sub-dimension scores are obtained by the total score of the answers given to the items of that sub-dimension, while the total corona-phobia score is obtained by the sum of the sub-dimension scores and varies between 20 and 100 points. High scores indicate the high sub-dimensions and high corona-phobia. The internal consistency coefficient of the scale was calculated as 0.925 Arpaci et al 2020. In this study, the internal consistency coefficient of the scale was calculated as 0.944.

Statistical analysis

The data of the study were analyzed in the SPSS 23.0 statistics software. Among the descriptive statistics, number, percentage, mean, standard deviation and one-way analysis of variance were used. Skewness and Kurtosis values (+1.500 and -1.500) were taken into account in the assumption of normality (Tabachnick and

Fidell 2013). The internal consistency coefficient (Cronbach Alpha) was calculated to evaluate the reliability of the scales. T-test, Kruskal Wallis, One Way Anowa and Mann Whitney-U test were used to determine whether there was a difference between participants' Covid-19 phobia scale total and sub-dimension mean scores in terms of sociodemographic characteristics, presence of chronic disease, and opinions on Covid-19 disease and vaccines.

Ethical considerations

Prior to the study, the ethical approvals were obtained from Usak University Clinical Research Ethics Committee (Date: 03.02.2021, Issue: E-38824465-020-7046, Decision No: 12). Participants were informed about the research and their approval for the Voluntary Information Form was obtained. Volunteer participants were included in the study.

RESULTS

Among the individuals participating in the study, 72.3% were women (n=383), 54.9% were between the ages of 18-30 (n=291), 43.8% were married (n=232), 39.4% had bachelor's degree (n=209), 49.2% were working (n=261) and 38.1% were public employees (n=202). Moreover, 11.9% of them had chronic diseases (n=63) (Table 1).

Table 1. Sociodemographic characteristics of participants and presence of chronic disease (n=530).

Variables	n	%
Gender		
Woman	383	72.3
Man	147	27.7
Age		
18-30 years old	291	54.9
30-49 years old	224	42.3
50 years and older	15	2.8
Marital status		
Married	232	43.8
Single	298	56.2
Education status		
Literate/elementary school	27	5.1
Secondary education/high school	78	14.7
Associate's degree	149	28.1
Bachelor's degree	209	39.4
Postgraduate	67	12.6
Employment status		
Yes	261	49.2
No	269	50.8
Occupation		
Health employee	45	8.5
Public employee	202	38.1
Self-employment	63	11.9
Student	168	31.7
Housewife	52	9.8
Chronic disease presence		
Yes	63	11.9
No	467	88.1

According to the data in Table 2, it was determined that 17% (n=90) of the individuals who participated in the study were infected with Covid-19 disease and that their fear of catching the virus for the second time was high in 34.4% (n=31) while a little in 52.2% (n=47). It was found that 83% of the participants (n=440) were not infected with Covid-19 before; and 23.4% (n=103) of these individuals were very afraid of Covid-19 and 56.1% (n=247) were a little afraid. It was also determined that 40.8% (n=216) of all participants were seeing themselves at a moderate risk in terms of infecting with Covid-19 (Table 2). Moreover, 24.3% (n=129) of the participants answered the question of would you like to be a Covid-19 vaccine as yes, 30.9% (n=164) of them as no, while 44.7% (n=237) of them said that they were indecisive. It was determined that while 59.4% (n=76) of those who answered yes, stated as "I think vaccines will control the pandemic", 67.3% of those who answered no (n=164), stated as "I do not find the vaccines safe because they are newly developed", and 50.2% (n=119) who answered as I am indecisive, stated as "I am indecisive, as I do not know about the side effects" (Table 2).

Table 2. The status of participants about Covid-19 with and their opinions on Covid-19 disease and vaccines (n=530).

Variables	n	%
Covid-19 infection status		
Yes	90	17
No	440	83
Risk of getting infected with Covid-19		
Yes, I think I am very risky.	89	16.8
Yes, I think I am at a moderate risk.	216	40.8
Yes, I think I am less risky.	140	26.4
No.	85	16
Fear of getting infected with Covid-19 for the first time (n=440)		
Yes, I am so scared.	103	23.4
Yes, I am a little scared.	247	56.1
No, I am not scared.	90	20.5
Fear of getting infected with Covid-19 for the second time (n=90)		
Yes, I am so scared.	31	34.4
Yes, I am a little scared.	47	52.2
No, I am not scared.	12	13.3
Decision to get vaccinated		
Yes	129	24.3
No	164	30.9
I am indecisive	237	44.7
If the decision to be vaccinated is "YES", the reason is;		
I believe vaccines will end the pandemic.	18	14.1
I think vaccines will control the pandemic.	76	59.4
I think vaccines will protect against the disease.	34	26.6
If the decision to be vaccinated is "NO", the reason is;		
I do not believe vaccines will end the pandemic.	6	3.7
I think vaccines will not be enough to control the pandemic.	6	3.7
I do not find vaccines safe as they are newly developed.	109	67.3
I think vaccines will not protect against the disease.	11	6.8
I am afraid of the side effects.	30	18.5
If the decision to be vaccinated is " I AM INDECISIVE", the reason is;		
I am indecisive because I am not in the risk group	10	4.2
Since I have had the disease before, I am not sure whether I will need to be vaccinated.	9	3.8
I am indecisive because of the negative news I heard about the vaccine on social media.	25	10.5
I am indecisive, as I do not know about the side effects.	119	50.2
I am indecisive as it is a newly developed vaccine.	74	31.2

The average scale score obtained for the Covid-19 phobia scale of the participants was found to be 47.87±16.46 (Table 3). Covid-19 phobia scale total and sub-dimensions mean scores of women were found to be higher than that of men ($p < 0.001$; Table 4).

Table 3. Participants' Covid-19 phobia scale total scores, standard deviations, minimum and maximum values.

Scale	Item number	Mean±SD	Values that can be taken from scales		Values of participants	
			Minimum	Maximum	Minimum	Maximum
Covid-19 Phobia Scale	20	47.87± 16.46	20	100	20	100

SD=Standard deviation.

It was determined that the average score of the psychological sub-dimension of the Covid-19 phobia scale of the self-employed people was statistically high. No statistically significant difference was found between the total and sub-dimension mean scores of the Covid-19 phobia scale according to marital status, age groups, employment status, education status and the presence of chronic disease ($p>0.05$; Table 4). It was determined that there was no statistically significant difference between the sub-dimensions of the Covid-19 phobia scale and the total score averages of individuals who decided to be vaccinated yes, no and indecisive ($p>0.05$; Table 4). Covid-19 phobia scale somatic ($p=0.005$) and economic sub-dimensions ($p=0.032$) mean scores of individuals infected with Covid-19 were determined to be statistically high ($p<0.05$). Covid-19 phobia scale total and sub-dimensions mean scores of individuals who had not had Covid-19 before and who stated that they were very afraid of getting Covid-19 were found to be statistically high ($p<0.05$).

Moreover, it was found that the Covid-19 phobia scale total and psychological, social, economic sub-dimensions (p=0.001, p=0.023, p=0.036, respectively) mean scores of the individuals who stated that they were very afraid of getting Covid-19 for the second time were statistically high (p<0.05). It was also observed that Covid-19 phobia scale total (p=0.000), psychological (p=0.000) and social (p=0.000) sub-dimensions mean scores of people who stated their risk perception of getting Covid-19 as "I think I am moderately risky" were statistically high (p<0.001; Table 4).

Table 4. Comparison of the mean scores of the Covid-19 phobia scale total and sub-dimensions according to the sociodemographic characteristics of the participants, their views on Covid-19 disease and vaccines.

Descriptive Characteristics		C19P-S (X±SD)				
		Psychological	**Somatic**	**Social**	**Economic**	**C19P-S total score**
Gender	Woman	18.33±6.57	9.93±4.22	13.57±5.15	8.43±3.52	50.28±16.76
	Man	14.88±5.97	8.46±3.60	11.07±4.17	7.16±2.97	41.58±13.85
	Test value and p	t=5.550 **p=0.000***	Z=-4.064 **p=0.000***	t=5.757 **p=0.000***	Z=-4.119 **p=0.000***	t=6.090 **p=0.000***
Marital status	Married	16.92±6.48	9.37±4.10	12.6±4.93	7.75±3.35	46.65±16.58
	Single	17.73±6.67	9.65±4.11	13.09±5.09	8.33±3.46	48.81±16.33
	Test value and p	Z=-1.463 p=0.143	Z=-0.991 p=0.322	Z-1.050 p=0.294	Z=-1.908 p=0.056	Z=-1.563 p=0.116
Age groups	18-30 years old	17.85±6.55	9.76±4.23	13.19±5.00	8.38±3.47	49.19±16.25
	30-49 years old	16.72±6.53	9.10±3.74	12.42±4.93	7.64±3.19	45.90±15.99
	50 years and older	18.00±7.74	11.33±6.00	13.53±6.39	8.80±5.04	51.66±24.10
	Test value and p	F=1.941 p=0.145	X^2=3.772 p=0.152	F=1.597 p=0.204	X^2=5.561 p=0.062	F=2.959 p=0.053
Employment status	Yes	16.86±6.49	9.45±3.86	12.69±5.03	7.86±3.29	46.88±16.26
	No	17.88±6.66	9.60±4.34	13.05±5.01	8.29±3.53	48.83±16.63
	Test value and p	Z=-1.683 p=0.092	Z=-0.073 p=0.942	Z=-0.830 p=0.406	Z=-1.401 p=0.161	Z=-1.359 p=0.174
Education status	Literate/Elementary School	17.88±6.53	8.92±2.14	12.66±4.18	7.77±2.04	47.25±13.02
	Secondary Education/High School	15.83±7.27	9.96±3.72	12.44±5.33	8.43±2.95	46.67±16.72
	Associate's degree	17.49±6.20	9.18±3.71	12.54±4.42	8.07±3.19	47.30±14.59
	Bachelor's degree	17.59±6.59	9.72±4.53	13.13±5.22	8.17±3.83	48.64±17.69
	Postgraduate	18.04±6.52	9.41±4.55	13.4±5.61	7.50±3.53	48.37±17.66
	Test value and p	F=1.355 p=0.248	X^2=3.058 p=0.548	F=0.641 p=0.634	X^2=5.806 p=0.214	F=0.284 p=0.888
Occupation	Health employee	15.75±5.96	9.15±2.29	11.8±3.83	7.44±1.65	44.15±10.92
	Public employee	17.04±6.44	9.17±4.05	12.90±5.28	7.82±3.54	46.95±17.00
	Self-employment	17.44±6.61	10.49±4.07	13.03±4.96	8.39±3.40	49.36±16.97
	Student	18.54±6.58	9.73±4.63	13.20±4.95	8.55±3.68	50.03±16.66
	Housewife	16.26±7.27	9.40±3.66	12.50±5.20	7.63±3.08	45.86±16.52
	Test value and p	F=2.515 **p=0.041***	X^2=8.704 p=0.069	F=0.781 p=0.538	X^2=7.118 p=0.13	F=1.789 p=0.13
Chronic disease presence	Yes	18.34±6.78	9.53±4.31	13.46±5.32	8.03±3.38	49.38±17.68
	No	17.25±6.56	9.52±4.08	12.8±4.98	8.08±3.43	47.66±16.30
	Test value and p	Z=-1.197 p=0.231	Z=-0.103 p=0.918	Z=-0.978 p=0.328	Z=-0.101 p=0.92	Z-0.801 p=0.423
Covid-19 infection status	Yes	17.45±5.97	10.31±3.85	12.71±4.31	8.5±3.15	48.97±14.79
	No	17.36±6.72	9.37±4.14	12.91±5.16	7.99±3.47	47.64±16.79
	Test value and p	Z=-0.204 p=0.838	Z=-2.830 **p=0.005***	Z=-0.072 p=0.943	Z=-2.139 **P=0.032***	Z=-1.101 p=0.271
Fear of getting infected with covid-19 for the first time	Yes, I am so scared	22.19±6.97	12.14±4.84	16.79±5.72	9.92±4.27	61.05±18.97
	Yes, I am a little scared	16.97±5.78	8.61±3.11	12.36±4.16	7.49±2.66	45.46±12.60
	No, I am not scared	12.90±5.18	8.25±4.39	9.97±4.34	7.15±3.64	38.28±15.16
	Test value and p	F=59.29 **p=0.000***	X^2=63.349 p=**0.000***	F=56.47 **p=0.000***	X^2=34.890 p=**0.000***	F=62.62 **p=0.000***
Fear of getting infected with covid-19 for the second time	Yes, I am so scared	19.51±6.51	11.41±4.68	14.06±5.35	9.48±3.67	54.48±17.83
	Yes, I am a little scared	17.46±5.43	9.82±3.19	12.46±3.48	8.17±2.92	47.93±12.23
	No, I am not scared	12.08±2.46	9.33±3.49	10.16±2.97	7.25±1.76	38.83±8.67
	Test value and p	F=7.705 **p=0.001***	X^2=2.183 p=0.336	F=3.930 **p=0.023***	X^2=6.632 p=**0.036***	F=5.610 **p=0.005***
Decision to get vaccinated	Yes	17.18±6.24	9.70±4.53	12.77±4.77	8.04±3.45	47.71±16.33
	No	17.14±6.67	9.33±4.16	12.53±5.11	8.23±3.65	42.25±17.30
	I am indecisive	17.65±6.74	9.56±3.82	13.17±5.09	7.99±3.25	48.38±15.99
	Test value and p	F=0.368 p=0.692	X^2=1.008 p=0.604	F= 0.813 p=0.444	X^2=0.181 p=0.914	F=0.239 p=0.788

DISCUSSION

In our study, it was determined that the fear of catching Covid-19 for the first time was very much in 23.4% of the participants, a little in 56.1%, and the fear of catching Covid-19 for the second time was very much in 34.4% and a little in 52.2% of the participants. Covid-19 has caused significant changes in work, school and social life in many countries after the WHO declared it as a pandemic. These sudden and major changes made to prevent the spread of the disease (social isolation, closure of schools and most businesses, lockdown, etc.) have caused feelings of fear and anxiety in people (Doğan and Düzel, 2020). Moreover, the fact that Covid-19 is a newly defined disease, the lack of precise information about its treatment, the increasing number of cases and mortality rates, the continuing uncertainty about the process has further increased the fear of getting Covid-19 in individuals and the psychological reactions to the disease (Bakioğlu et al., 2020; Mertens et al., 2020; Rodríguez-Hidalgo et al., 2020; Torales et al., 2020; Wang et al., 2020). In a study conducted with 1210 participants in China, 53.8% of the participants evaluated the psychological impact of the pandemic as moderate or severe, and 75.2% stated that they were afraid that their family members infect with Covid-19 (Wang et al., 2020).

In this study, 24.3% of the individuals who participated in the research answered to the question of would you like to be a Covid-19 vaccine as yes, 30.9% of them said no and 44.7% of them said that "I am indecisive". Most of the respondents who responded “I am indecisive” stated that they did not know the side effects of vaccines and that they were indecisive because the vaccines were newly developed. Vaccination is a reliable, effective and inexpensive method to gain community immunity in controlling Covid-19. It is stated that the vaccine should be accepted by at least 55% of the society in order to gain herd immunity in society, and it is thought that this rate may rise to 85% depending on the country and the course of the disease (Kwok et al., 2020; Sanche et al., 2020). In our study, 24.3% of the participants stated that they would accept vaccination; this value is quite lower than the vaccination rate that should be required to gain community immunity. Public acceptance of vaccines is important for the Covid-19 vaccination program to be successful. The situation that the vaccine was newly developed, lack of information about vaccines, misinformation on social media platforms about the disease and vaccines (the disease being a conspiracy, the vaccine has a chip inside of it, the vaccine is a biological weapon, etc.) negatively affects the vaccine decision of the society (Bell et al., 2020; Loomba et al., 2021; Sallam et al., 2021). In a study conducted with the participation of 1066 people in Poland, it has been shown that 28% of adults will not have the covid-19 vaccine. In addition, the majority of these people (51%) stated that they would not change their minds even if they were given information about vaccine safety and effectiveness or were threatened with heavy fines (Feleszko et al., 2020). In a study conducted in June 2020, 38% of the people surveyed in the United Kingdom and 34.2% in the United States (USA) stated that they would agree to have the COVID-19 vaccine (Mcandrew and Allington 2020). In a study conducted in September 2020 with 4000 participants in the UK and 4001 in the USA, it was predicted that 54.1% of the participants in the UK and 42.5% of the participants in the USA would definitely accept vaccination. The majority of the participants stated that they would accept vaccination to protect their family and close relatives (Loomba et al., 2021).

The average scale score obtained for the Covid-19 phobia scale of the participants was found to be 47.87 (SD: 16.46) below the midpoint. Covid-19 phobia is defined as the constant and excessive fear experienced by the individual against the virus negatively affecting the person's life (Arpaci et al., 2020). In a study, it was shown that individuals who did not leave the house except for essential needs during the three-month restriction period within the scope of Covid-19 measures had higher levels of Covid-19 phobia than individuals who had to go to work during this period. This has been associated with increased anxiety levels and social media exposure (Celenay et al., 2020).

It was found that there was no statistically significant difference between the sub-dimensions of the Covid-19 phobia scale and the total score averages of individuals who decided to be vaccinated yes, no and indecisive. However, in our study, it has been shown that women, who have not infected with Covid-19 before and who stated that they were very afraid of getting Covid-19 had high mean scores on the Covid-19 phobia scale total and sub-dimensions. The increased fear of Covid-19 turns into corona-phobia. Many studies have found that women have higher fear of covid-19 (Andrade et al., 2020; Bakioğlu et al., 2020; Rodríguez-Hidalgo et al., 2020). These findings support that corona-phobia levels may be higher in women. Continuous exposure to news about Covid-19, high mortality rates and severe cases of many patients may cause high corona-phobia levels of individuals who have not had Covid-19 before. It has been determined that as the exposure to social media increases, the psychological effects of the pandemic increase (Celenay et al., 2020; Mertens et al., 2020).

The mean score of the psychological sub-dimension of the self-employed people; somatic and economic sub-dimensions score means of individuals previously infected with Covid-19; total, psychological, social and economic sub-dimensions mean scores of individuals who were very afraid of getting Covid-19 for the second time, were found higher. In our study, most of the self-employed individuals work with the minimum wage and they continued to go to work even in times of restrictions. The thought that their economic problems will increase in the event of the disease may cause them to be more psychologically affected by the pandemic Both in individuals caught with Covid-19 and in individuals who express that they were very afraid of getting Covid-19 for the second time; the effects of the disease on their bodies,

the pathological symptoms they experienced, the economic difficulties during and after the disease were effective in high corona-phobia levels. One of the most negative effects of the pandemic is the economic problems experienced by individuals. During the pandemic period, a ban on dismissal was imposed in Turkey, but a large number of people, especially those working on the minimum wage, have not received their full salaries for a long time. The economic difficulty caused the psychological effects to be experienced more heavily. In a study conducted in India, the causes of 69 suicide cases were identified as fear of catching covid-19 (n=21), economic crisis (n=19), loneliness, quarantine pressure and social boycott, work stress due to the COVID-19, respectively (Dsouza et al., 2020).

CONCLUSION

Our study showed that individuals experienced fear of getting Covid-19 and covid-19 phobia, and most people were undecided about being vaccines due to the unknown side effects. Analyzing the effects of the pandemic on society and determining the opinions of individuals about covid-19 vaccines is very important in the Covid-19 pandemic crisis. The success of the vaccination program depends on increasing the population acceptance of vaccines. It is important to eliminate the concerns of society about vaccines and to inform them correctly in controlling the pandemic. Moreover, measures to reduce the psychological effects of the pandemic on individuals (phone counseling, economic support, etc.) should be increased.

Limitations of Study

The study has limitations. This study presents some new results about Covid-19 vaccines, as well as results that support previous studies. However, limitations of the study should be noted while interpreting the results of the study. The limitation of this study is the small sample size and the majority of the participants are likely to be female. Moreover, the participants are users of a network, which implies that the data obtained comes from a sample with internet access and social media users, not representing a population without these characteristics.

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Conflicts of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: ÇK, EB, PS; **Material, methods and data collection:** ÇK, EB, PS; **Data analysis and comments:** ÇK, EB; **Writing and corrections:** CK, EB, PS.

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Kadınların Vulva Sağlığı ile İlgili Bilgi ve Davranışları

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ÖZ

Amaç: Kadınların vulva sağlığı ile ilgili bilgi ve davranışlarını belirlemek ve bunu etkileyen faktörleri saptamaktır.
Gereç ve Yöntem: Analitik-kesitsel tipte olan çalışma Temmuz 2019-Şubat 2020 tarihleri arasında, Aydın ilindeki bir kamu hastanesinin jinekoloji polikliniğine başvuran 421 kadın ile yürütülmüştür. Veriler araştırmacılar tarafından literatüre göre hazırlanan soru formu ile toplanmıştır. Verilerin değerlendirilmesinde tanımlayıcı istatistikler ve ki-kare testi uygulanmıştır.
Bulgular: Kadınların çoğu vulvada gözlenerek saptanabilecek durumun kızarıklık olduğunu ve vulvar hastalıklardan korunmak için vulva bölgesinin temizliğine dikkat etmenin gerektiğini belirtmiştir. Kadınların büyük bir kısmının kendi kendine vulva muayenesini duymadığı, vulva bölgesini muayene/kontrol etmediği ve herhangi bir şikâyeti olmadığı sürece doktora gitmediği belirlenmiştir. Kadınların büyük bir kısmının vajinal duş yapmama ve iç çamaşırını her gün değiştirme gibi durumlara dikkat ettikleri saptanmıştır. Yaş grubu 30-39 arasında, üniversite ve üzeri eğitime sahip olanların vulva bölgesini muayene/kontrol etme durumunun daha fazla olduğu belirlenmiştir ($p<0.05$). **Sonuç:** Kadınların vulva sağlığı ile ilgili farkındalıklarının olduğu fakat istenen düzeyde olmadığı görülmüştür. Özellikle vulva bölgesini muayene/kontrol etmeyenlerin oranının fazla olduğu saptanmıştır. Sağlık profesyonelleri vulva sağlığını en üst düzeye getirecek uygulamalara ilişkin eğitim ve danışmanlık hizmetleri sunarak kadınların farkındalığını arttırmalıdır.
Anahtar Kelimeler: Kendi Kendine Muayene, Vulva, Bilgi, Davranış, Kadın Sağlığı.

Women's Knowledge and Behaviors about Vulva Health

ABSTRACT

Objective: To determine the knowledge and behaviors of women about vulvar health and to determine the factors affecting it. **Materials and Methods:** The study, which is analytical-cross-sectional type, was conducted with 421 women who applied to the gynecology outpatient clinic of a public hospital in Aydın between July 2019 and February 2020.The data were collected by the researchers with a questionnaire prepared according to the literature. Descriptive statistics and chi-square test were used to evaluate the data. **Results:** Most of the women stated that the condition that can be detected in the vulva is redness and that it is necessary to pay attention to the cleanliness of the vulva area in order to prevent vulvar diseases. It was determined that most of the women had not heard of vulva self-examination, did not examine/control the vulva region, and did not go to the doctor unless they had any complaints. It has been determined that most of the women pay attention to situations such as not having a vaginal shower and changing their underwear every day. It was determined that the examination/control status of the vulva region was higher in the age group of 30-39, those with university or higher education. **Conclusion:** It has been observed that women have awareness of vulva health, but not at the desired level. It was determined that the rate of those who did not examine/control the vulva region was particularly high. Health professionals should provide training and consultancy services on practices that will maximize vulvar health, and raise awareness while providing these services.
Keywords: Self-examination, Vulva, Knowledge, Behavior, Women's Health.

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GİRİŞ

Vulva sağlığı, kadın ürogenital organlarının bütünlüğünün korunması, sürdürülmesi, geliştirilmesi ve sağlıklı olmasıdır. Vulva, dış ortamla teması olmayan kapalı bir alan olduğundan vücudun en sıcak ve en nemli ortamlarından birini oluşturmaktadır. Çeşitli vücut atıklarının (ter, idrar vb), deri katları ve kıvrımları arasında birikmesi vulva bölgesini mikroorganizmaların yerleşip çoğalması için elverişli bir ortam haline getirmektedir. Üretra, anüs ve vajinanın anatomik yakınlığı ve yanlış hijyen alışkanlıkları nedeni ile mikroorganizmalar anüsten vajina ve/veya üretraya kolaylıkla taşınarak ürogenital enfeksiyonlara neden olabilmektedir. Vulvada, herpes simpleks virüsü ve human papilloma virüsünün yol açtığı hastalıklar, deri hastalıkları, vulvitis ve bartolinitis gibi enfeksiyon hastalıkları, hemoroidler, varisler, benign ve malign oluşumlar (vulva kanseri) görülebilmektedir (Arslan Özkan, 2019; Cymerman ve ark., 2017; Sand ve Thomsen, 2017; Simpson ve Nuns, 2017; Taşkın, 2019).

Global Cancer Observatory (GLOBOCAN) 2020 verilerine göre dünyada vulva kanseri insidansı yüz binde 0.85, mortalitesi ise 0.30'dur (Globocan Observatory, 2020). Türkiye'de ise vulva kanseri yüz bin kadında 0.5 olarak görülmektedir (Türkiye Kanser İstatistikleri, 2017). Vulva sağlığını korumada yapılması gereken uygulamaların başında Kendi Kendine Vulva Muayenesi (KKVM) gelmektedir. Bu uygulamanın kadının kendi dış üreme organlarını muayene edebilmesi, uygulanabilirliğinin kolay olması, vulva hastalıkları ve vulva kanseri belirtilerinin erken teşhis edilmesi gibi avantajları vardır (Arslan Özkan, 2019; Butt ve Botha, 2017; Choi ve Park, 2018; Karaman, 2020; Vulval Pain Society, 2017). Ancak, KKVM'yi duyan ve uygulayan kadın sayısının oldukça az olduğu bildirilmektedir (Choi ve Park, 2018; Ersin, 2021; Karaman, 2020). Sağlık profesyonelleri kadınlara KKVM yapmanın ve düzenli olarak jinekolojik muayene gitmenin gerekliliğinden bahsetmelidir. Kadınların sağlıklı yaşam biçimi davranışlarını uygulaması ve risk faktörleri ile ilgili farkındalık kazanmalarında sağlık profesyonelleri büyük bir sorumluluğa sahiptir. Vulva sağlığını korumaya yönelik uygulamaların yapılmadığı, yanlış ya da yetersiz yapıldığı durumlarda vulva sağlığı bozulmaktadır.

Kadın sağlığı açısından son derece hayati olan konu ile ilgili kadınlarda farkındalık oluşturulması gerekliliğinden yola çıkılarak yürütülen çalışmanın literatüre katkı sağlayacağı düşünülmektedir. Bu çalışmada kadınların vulva sağlığı ile ilgili bilgi ve davranışlarını ve bunu etkileyen faktörlerin belirlenmesi amaçlanmıştır.

Araştırma soruları

- Kadınların vulva sağlığı ile ilgili bilgileri nasıldır?
- Kadınların vulva sağlığı ile ilgili davranışları nasıldır?
- Kadınların vulva sağlığı ile ilgili bilgi ve davranışlarını etkileyen faktörler nelerdir?

GEREÇ VE YÖNTEM

Araştırmanın tipi

Araştırma analitik-kesitsel tiptedir.

Araştırmanın yeri ve zamanı

Araştırma Temmuz 2019- Şubat 2020 tarihleri arasında Aydın ilindeki bir kamu hastanesinin jinekoloji polikliniğinde yürütülmüştür.

Araştırmanın evren ve örneklemi

Araştırmanın evrenini 2018 yılında, Aydın ilindeki bir kamu hastanesinin jinekoloji polikliniğine başvuran 20 yaş ve üstü 87799 kadın oluşturmuştur. Örneklem sayısı evreni bilinen örneklem yöntemiyle 383 olarak hesaplanmıştır. Kayıp olasılığı düşünülerek örneklem sayısına %10 oranında eklenerek 421 olarak alınmış ve tamamına ulaşılmıştır.

Veri toplama araçları

Araştırma verileri, araştırmacılar tarafından literatüre göre hazırlanan soru formu ile toplanmıştır. Sorular vulva sağlığına yönelik yapılan çalışmalardan uyarlanmıştır (Aydoğdu ve Bekâr, 2016; Butt ve Botha, 2017; Choi ve Park, 2018; Çınar Yücel ve ark., 2014; Duman ve ark., 2015; Sapountzi-Krepia ve ark., 2017).

Soru formunda kadınların sosyo-demografik özelliklerini içeren sekiz soru (yaş, eğitim durumu vb.), obstetrik ve jinekolojik öykülerini içeren beş soru (gebelik sayısı, menopoza girme durumu vb.) ve vulva sağlığı ile ilgili bilgi ve davranışlarına yönelik olan on dokuz soru olmak üzere toplamda otuz iki açık ve kapalı uçlu soru bulunmaktadır.

Veri toplama

Araştırma verileri, Temmuz 2019- Şubat 2020 tarihleri arasında, Aydın ilinde yer alan bir kamu Hastanesi'nin jinekoloji polikliniğine başvuran, okuma-yazma bilen, Türkçe konuşabilen, 20 yaş ve üstü olan ve çalışmaya gönüllü olarak katılan 421 kadın ile yürütülmüştür. Jinekoloji polikliniğine başvuran kadınlara poliklinik bekleme alanlarında yüz yüze görüşme yöntemi ile soru formu uygulanmıştır. Soru formunun uygulanmasında kendini bildirim yöntemi kullanılmıştır. Soru formunun doldurulması yaklaşık 10-15 dakika sürmüştür.

İstatistiksel analiz

Veri toplama formu ile toplanan veriler, Statistical Package for the Social Sciences (SPSS) 22 programı kullanılarak analiz edilmiştir. Verilerin değerlendirilmesinde ortalama, standart sapma, minimum, maksimum, sayı, yüzde gibi tanımlayıcı istatistiksel yöntemler kullanılmıştır. Kategorik yapıdaki değişkenler bakımından gruplar arası farklılıklar ki-kare testi ile incelenmiştir. Sonuçlar %95 güven aralığında değerlendirilmiş ve $p<0.05$ değeri anlamlı kabul edilmiştir.

Araştırmanın etik yönü

Araştırma için bir üniversitenin Girişimsel Olmayan Klinik Araştırmalar Etik Kurulundan 04.03.2019 tarihinde araştırma ön onayı (Sayı: 50107718-050.99) ve 19.04.2022 tarihinde araştırma son onayı (Sayı: E-76261397-050.99-166878) alınmıştır. Araştırmanın yürütüldüğü hastaneden 13.06.2019 tarihinde yazılı izin alınmıştır. Araştırma öncesi katılımcılar veri toplama formları dağıtılmadan önce araştırmacılar tarafından bilgilendirilmiş ve gönüllü olan kadınlara araştırmanın amacı açıklanarak sözlü onam alınmıştır. Araştırmada Helsinki Deklarasyonu Prensipleri'ne uygun davranılmıştır.

BULGULAR

Araştırmaya katılan kadınların yaş ortalamasının 36.89±9.1 (min: 20, max: 65) olduğu ve %34.7'sinin 30-39 yaş grubunda olduğu görülmüştür. Kadınların çoğunun (%89.5) evli olduğu, gelir getiren bir işte çalışmadığı (%71), ilkokul mezunu olduğu (%30.9) en uzun süre ilde yaşadığı (%50.8) ve gelirinin giderine denk olduğu (%62.4) belirlenmiştir. Ayrıca kadınların %81.5'inin kronik bir hastalığının olmadığı, kronik hastalığı olanların %29.8'inin hipertansiyonu olduğu saptanmıştır (Tablo 1).

Tablo 1. Kadınların sosyo-demografik özelliklerine göre dağılımı (n=421).

Özellikler	**Ortalama±SS**	**Min-Maks**
Yaş ortalaması	36.89±9.1	20-65
Yaş grubu	**Sayı (n)**	**Yüzde (%)**
20-29 yaş	102	24.2
30-39 yaş	146	**34.7**
40-49 yaş	136	32.3
50 yaş ve üzeri	37	8.8
Medeni durumu		
Evli	377	**89.5**
Bekâr	44	10.5
Gelir getiren bir işte çalışma durumu		
Evet	122	29,0
Hayır	299	**71.0**
Eğitim düzeyi		
Okuryazar	55	13.1
İlkokul mezunu	130	**30.9**
Ortaokul mezunu	94	22.2
Lise mezunu	68	16.2
Üniversite/Lisansüstü mezunu	74	17.6
Bugüne kadar en uzun süre yaşanan yer		
Köy/kasaba	104	24.7
İlçe	103	24.5
İl	214	**50.8**
Gelir-gider durumu		
Gelir giderden az	106	25.2
Gelir gidere denk	263	**62.4**
Gelir giderden fazla	52	12.4
Kronik hastalık durumu		
Evet	78	18.5
Hayır	343	**81.5**
Kronik hastalık adı*		
Hipertansiyon	33	**29.8**
Diabetes mellitus	32	28.8
Hipotiroidi	17	15.3
Astım	24	21.6
Romatizma	2	1.8
Vertigo	2	1.8
Hepatit B	1	0.9

*Birden fazla seçenek işaretlenmiştir. Yüzdeler toplam "n" üzerinden hesaplanmıştır.

Tablo 2. Kadınların obstetrik ve jinekolojik öykülerine göre dağılımı (n=421).

Özellikler	**Ortalama±SS**	**(Min-Max)**
Gebelik sayısı	2.35±1.29	1-10
Doğum sayısı	1.86±0.91	1-4
Düşük/kürtaj sayısı	1.40±0.69	1-6
	Sayı	**Yüzde**
Menopoza girme durumu		
Evet	91	21.6
Hayır	330	**78.4**
En uzun süre kullanılan gebelikten koruyucu yöntem		
Kullanmayan	56	13.3
Geri çekme	176	**41.8**
Erkek kondomu	21	5.0
Rahim içi araç	91	21.6
Hap	58	13.8
İğne	9	2.1
Tüp ligasyonu	10	2.4

SS=Standart sapma.

Araştırmada yer alan kadınların gebelik sayısının 2.35±1.29 (min-max= 1-10), canlı doğum sayısının 1.86±0.91 (min–max= 1-4) ve düşük/kürtaj sayısının 1.40±0.69 (min-max= 1-6) olduğu belirlenmiştir. Kadınların %78.4'ü menopoza girmediğini ve %41.8'i en uzun süre gebelikten koruyucu yöntem olarak geri çekme kullandığını belirtmiştir (Tablo 2). Araştırmadaki kadınların %44.7'si vulvada gözlenerek saptanabilecek duruma kızarıklık cevabını verirken, %74'ü vulvar hastalıklardan korunmak için vulva bölgesinin temizliğine dikkat etmek gerektiğini ifade etmiştir. Kadınların çoğunun (%91) daha önce KKVM'yi duymadığı, duyanların ise (%63.2) doktordan duyduğu belirlenmiştir. Kadınların büyük bir kısmının KKVM'nin kaç yaşından sonra (%86) ve ne sıklıkla (%86) yapılması gerektiğini bilmedikleri görülmüştür. Araştırmadaki kadınların %39.3'ü vulva hastalığına ya da kanserine sigara içmenin yol açtığını belirtmiştir (Tablo 3).

Kadınların %89.1'inin KKVM yapmadığı, yapanların büyük bir kısmının aklına geldikçe (%60.9) ve sadece göz ile muayene yaptığı (%73.9) görülmüştür. Kadınların %51.8'i son 5 yıl içerisinde Pap-Smear testi yaptırdığını, %87.2'si yılda bir kez kontrol amacı ile kadın-doğum doktoruna gitmediğini ifade etmiştir. Kadınların çoğu vulva bölgesine kozmetik ürün (%95.7) ve günlük ped/bez (%85.5) kullanmadıklarını ve vajinal duş yapmadıklarını (%81.9) belirtmiştir. Kadınların çoğu iç çamaşırını her gün değiştirdiğini (%57), vulva bölgesini su ile yıkadıktan sonra kuruladığını (%83.1), korse, tayt gibi sıkı giysiler giymediğini (%89.5) ve penye/pamuklu iç çamaşırı kullandığını (%92.1) belirtmiştir (Tablo 4).

Çalışmada yer alan kadınların yaş değişkeni ile vulva bölgesini muayene/kontrol etme durumu arasında istatistiksel olarak anlamlı bir fark bulunmuştur ($p<0.05$). Yapılan ileri analizde bu farkın 20-29 ile 30-39 yaş grubunda olan kadınlardan kaynaklandığı saptanmıştır. Yaş grubu 30-39 arasında olanların vulva bölgesini muayene/kontrol etme durumunun daha yüksek olduğu görülmüştür. Ayrıca kadınların eğitim durumu ile vulva bölgesini muayene/kontrol etme durumu arasında da istatistiksel olarak anlamlı bir fark bulunmuştur ($p<0.05$). Yapılan ileri analizde bu farkın ilkokul mezunu ile üniversite ve üstü olanlar arasındaki farktan kaynaklandığı saptanmıştır. Üniversite ve üstü olanların vulva bölgesini muayene/kontrol etme durumunun daha yüksek olduğu görülmüştür. Medeni durum, gelir getiren bir işte çalışma durumu, gelir-gider durumu, en uzun süre yaşanan yer ve kronik hastalık varlığı ile vulva bölgesini muayene/kontrol etme durumu arasında istatistiksel olarak anlamlı bir fark bulunmamıştır ($p>0.05$) (Tablo 5).

Tablo 3. Kadınların vulva sağlığı ile ilgili bilgileri (n=421).

Özellikler	Sayı	Yüzde
Vulvada gözlenerek saptanabilecek durumlar*		
Kızarıklık	334	**44.7**
Leke/koyu veya açık noktalar	89	11.9
Su dolu kabarcıklar	46	6.1
Şişlik	46	6.1
Tahriş	44	5.9
Çatlak	42	5.6
Çıkıntılar	42	5.6
Akıntı	37	5.0
Bilmiyorum	68	9.1
Vulvar hastalıklardan korunmak için yapılması gerekenler*		
Vulva bölgesinin temizliğine dikkat etmek	378	**74.0**
Tek eşli cinsel yaşam	91	17.8
Düzenli Pap smear testi yaptırmak	17	3.3
Bilmiyorum	14	2.7
Kendi kendine vulva muayenesi yapmak	11	2.2
Daha önce kendi kendine vulva muayenesini duyma durumu		
Evet	38	9.0
Hayır	383	**91.0**
Kendi kendine vulva muayenesini nerden/kimden duyduğu		
Doktor	24	**63.2**
Hemşire	11	28.9
İnternet	3	7.9
Kendi kendine vulva muayenesi kaç yaşından sonra yapılmalı		
Bilmiyorum	362	**86.0**
20+	28	6.7
30+	7	1.6
40+	7	1.6
50+	4	1.0
Menarş sonrası	5	1.2
Evlendikten sonra	5	1.2
Menopoz sonrası	3	0.7
Kendi kendine vulva muayenesinin ne sıklıkla yapılmalı		
Bilmiyorum	362	**86.0**
Ayda bir	31	7.4
Üç ayda bir	6	1.4
Yılda iki	6	1.4
Yılda bir	8	1.9
Haftada 1	3	0.7
Her banyoda	5	1.2
Vulva hastalığına ya da kanserine ne/neler yol açabilir*		
Sigara içmek	381	**39.3**
Birden fazla kişiyle cinsel ilişkiye girmiş olmak	151	15.6
Cinsel yolla bulaşan hastalıklara sahip olmak	92	9.5
Alkol içmek	53	5.5
Şişman olmak	53	5.5
4'den fazla doğum yapmak	54	5.6
4'den fazla gebe kalmak	44	4.5
Pap-smear/rahim ağzı kanseri testi pozitif olmak	46	4.7
Bağışıklık sistemi zayıf olmak	47	4.8
Sürekli stresli olmak	48	5.0

Tablo 4. Kadınların vulva sağlığı ile ilgili davranışları (n=421).

Özellikler	Sayı	Yüzde
Vulva bölgesini muayene/kontrol etme durumu		
Evet	46	10.9
Hayır	375	**89.1**
KKVM yapma sıklığı		
Aklıma geldikçe	28	**60.9**
Ayda bir	3	6.5
Üç ayda bir	15	32.6
KKVM'yi yapma şekli		
Sadece göz ile muayene yapma	34	**73.9**
Sadece el ile muayene yapma	2	4.3
Hem göz hem de el ile muayene yapma	10	21.8
Son 5 yıl içerisinde rahim ağzı kanseri testi (Pap-smear testi) yaptırma durumu		
Evet	218	**51.8**
Hayır	203	48.2
Şikâyet olmasa da yılda bir kez kontrol amacı ile kadın-doğum doktoruna muayeneye gitme durumu		
Evet	54	12.8
Hayır	367	**87.2**
Vulva bölgesine herhangi bir kozmetik ürün kullanma durumu		
Evet	18	4.3
Hayır	403	**95.7**
Günlük ped/bez kullanma durumu		
Evet	61	14.5
Hayır	360	**85.5**
Vajinal duş yapma durumu		
Evet	76	18.1
Hayır	345	**81.9**
İç çamaşırını değiştirme sıklığı		
Her gün	240	**57.0**
2günde1	72	17.1
3günde1	30	7.1
Haftada1	65	15.5
Günde 2	14	3.3
Vulva bölgesini yıkadıktan sonra kurulama durumu		
Evet	350	**83.1**
Hayır	71	16.9
Günlük yaşamda korse tayt gibi sıkı giysiler kullanma durumu		
Evet	44	10.5
Hayır	377	**89.5**
İç çamaşırı türü		
Penye /pamuklu	397	**92.1**
Sentetik/naylon	34	7.9

Tablo 5. Kadınların vulva bölgesini muayene/kontrol etme durumu.

Özellikler	Evet		Hayır			
	Sayı	Yüzde	Sayı	Yüzde	χ^2	p
Yaş grupları						
20-29 yaş	7	15.2	95	25.3		
30-39 yaş	17	37.0	129	34.4		
40-49 yaş	13	28.3	123	32.8	8.893	**0.031**
50 yaş ve üzeri	9	19.6	28	7.5		
Toplam	46	100.0	375	100.0		
Medeni durumu						
Evli	42	91.3	335	89.3		
Bekar	4	8.7	40	10.7	0.170	0.680
Toplam	46	100.0	375	100.0		
Gelir getiren bir işte çalışma durumu						
Evet	12	26.1	110	29.3		
Hayır	34	73.9	265	70.7	0.210	0.647
Toplam	46	100.0	375	100.0		
Eğitim düzeyi						
Okuryazar	4	8.7	51	13.6		
İlkokul mezunu	14	30.4	116	30.9		
Ortaokul mezunu	8	17.4	86	22.9		
Lise mezunu	4	8.7	64	17.1	11.79	**0.019**
Üniversite/Lisansüstü mezunu	16	34.8	58	15.5		
Toplam	46	100.0	375	100.0		
Gelir gider durumu						
Gelir giderden az	17	37.0	89	23.7		
Gelir gidere eşit	25	54.3	238	63.5	3.950	0.139
Gelir giderden fazla	4	8.7	48	12.8		
Toplam	46	100.0	375	100.0		
En uzun süre yaşanan yer						
İl	21	45.7	193	51.5		
İlçe	11	23.9	92	24.5		
Köy	14	30.4	90	24.0	0.966	0.617
Toplam	46	100.0	375	100.0		
Kronik hastalık durumu						
Var	8	17.4	70	18.7		
Yok	38	82.6	305	81.3	0.044	0.834
Toplam	46	100.0	375	100.0		

TARTIŞMA

Vulva sağlığını korumaya yönelik bilgi ve davranışların yanlış ya da yetersiz olduğu durumlarda vulvar hastalıklar ve vulva kanserinin gelişmesi oldukça muhtemeldir. Kadınların vulva sağlığının korunması ve sürdürülmesi konusunda bilgilerinin yeterli düzeyde olması, bu konuda olumlu tutum ve davranış sergilemeleri açısından önemlidir. Kadınların vulva sağlığına yönelik bilgi ve davranışlarını belirlemek için yapılan çalışmada, vulva sağlığı ile ilgili bilgi ve davranışlarının yetersiz düzeyde olduğu, ancak perine hijyenine yönelik olumlu sağlık davranışları sergiledikleri sonucuna ulaşılmıştır.

Araştırmada yer alan kadınların çoğu vulvada gözlemle en fazla saptanabilecek belirtinin kızarıklık olduğunu, ayrıca leke/koyu veya açık noktalar ve su dolu kabarcıklar gibi birden fazla belirti gözlenebileceğini de belirtmişlerdir. Bu bulgu kadınların gözlem yoluyla vulvada oluşabilecek değişikliklerin farkında olduklarını göstermektedir. Araştırmada, kadınların çoğu vulvar hastalıklardan korunmak için vulva bölgesinin temizliğine dikkat etmek gerektiğini belirtmişlerdir. Vulva sağlığını korumaya yönelik uygulamaların yapılmadığı, yanlış ya da yetersiz yapıldığı durumlarda oluşabilen genital enfeksiyonlar kadın sağlığını bozan etkenlerin başında gelmektedir (Demirtaş, 2006).

Çalışmada yer alan kadınların büyük bir kısmının daha önce KKVM'yi duymadığı belirlenmiştir. Yapılan bazı araştırmalarda da benzer sonuçlara ulaşılmıştır (Choi ve Park, 2018; Ersin, 2021; Karaman, 2020). Bu bulgu ülkemizde jinekoloji polikliniğine herhangi bir şikâyet ya da kontrol amaçlı olarak gelen kadınlara vulva sağlığına yönelik bilgilerin verilmesinde yetersizlik olduğunu

göstermesi açısından çarpıcı bir veri sunmaktadır. Araştırmaya katılan kadınların çoğu KKVM'yi duymadığı için kendi kendine vulva muayenesinin kaç yaşından sonra ve ne sıklıkla yapılması gerektiğini de bilmemektedir.

Kadınlar, vulva hastalığı ya da kanserine yol açan faktörler arasında ilk üç sırada sigara içme, birden fazla cinsel partnerin olması ve CYBH'lara sahip olmayı belirtmişlerdir. Sigara içmek birçok hastalık ve kanser türünde olduğu gibi vulva hastalık ve kanserinde de önemli bir risk faktörüdür. Sigara tek başına risk faktörü olmakla birlikte birden fazla cinsel partnerli olmak, CYBH sahibi olmak, bağışıklık sistemin zayıflığı ve sürekli stresli olmak vb. diğer bazı risk faktörleri ile bir arada görüldüğünde vulva hastalığı ve kanserinin oluşmasında etkisi daha da artmaktadır (Arslan Özkan, 2019; Butt ve Botha, 2017; Karaman, 2020; Taşkın, 2019). Araştırma kapsamında elde edilen bu bulgu, kadınların vulva hastalığı ya da kanserine neden olan risk faktörlerini yeterince bilmediklerini göstermektedir. Vulva kanserinin önlenmesinde KKVM kadar koruyucu sağlık davranışlarının da önemli olduğu bilinmektedir. Dolayısıyla, kadınların vulva kanserine ilişkin risk faktörlerini bilmeleri kendi sağlık sorumluluklarını alarak koruyucu sağlık davranışlarını sergilemesinde etkendir. Araştırma bulgumuz kadın sağlığı alanında çalışan sağlık personellerine, kadınlara risk faktörlerine yönelik bilgilendirme yapılması gereğini gösteren bir bulgudur.

Araştırmadaki kadınların büyük bir kısmının vulva bölgesini muayene/kontrol etmediği görülmüştür. Yapılan bazı çalışmalarda da benzer sonuçlar elde edilmiştir (Aydoğdu ve Bekar, 2016; Choi ve Park, 2018; Ersin, 2021; Karaman, 2020;). Kadınların vulva bölgesini muayene etmemeleri erken dönemde hastaneye başvuruları da azaltmaktadır. Bu sonuç çalışmaya katılan kadınların KKVM'ye yönelik bilgilerinin yeterli düzeyde olmadığını göstermektedir. Kadınlar sağlık personelleri tarafından yılda bir kez jinekolojik muayeneye yönlendirilmekle birlikte, gelen kadınlara pelvik muayene ve pap-test gibi işlemler dışında vulva sağlığına ve muayenesine ilişkin herhangi bir bilgi aktarımının yapılmaması ya da eksik yapılması kadınların vulva bölgelerini muayene/kontrol etmemelerinde etkili olabilir.

Çalışmadaki kadınların çoğu son beş yıl içerisinde rahim ağzı kanseri testi yaptırdığını belirtirken, şikâyetleri olmadığı sürece doktora gitmediklerini belirtmiştir. Literatürde benzer sonuçları olan çalışmalar yer almaktadır (Duman ve ark., 2015; Gürler, 2019; Kani ve Bekar, 2020; Türkmen ve Karagüzel, 2021). Kadınların jinekolojik muayeneye genellikle şikâyeti ya da sıkıntısı olduğunda gitmesi, jinekolojik muayenenin jinekolojik kanserlerden koruyan ve erken tarama için ön koşul oluşturan bir sağlık muayenesi olarak görülmediğini düşündürmektedir. Bu durum kadınlara yönelik koruyucu sağlık hizmetlerinin ön plana çıkartılmasında sağlık profesyonellerinin önemini bir kez daha vurgulamaktadır. Koruyucu sağlık hizmetleri kapsamındaki uygulamaların yaygınlaştırılmasının kadınların vulva sağlığına yönelik bilgi ve davranışlarının arttırılmasına büyük katkı sağlayacağı düşünülmektedir.

Araştırmadaki kadınların genel olarak genital bölgeye herhangi bir kozmetik ürün kullanmadıkları görülmüştür. Yapılan bazı çalışmalarda da aynı sonuca ulaşılmıştır (Akdoğan, 2020; Toraman ve ark., 2020; Türkmen ve Karagüzel, 2021). Parfüm, kolonya ve krem gibi bölgeyi tahriş edebilecek ve enfeksiyonlara neden olabilecek herhangi bir kozmetik ürünün genital bölgeye uygulanması son derece sakıncalıdır (Türkmen ve Karagüzel, 2021). Kadınların bu konuya dikkat etmesi olumlu bir sonuç olarak değerlendirilmiştir.

Bu araştırmaya katılan kadınların büyük bir kısmı vajinal duş yapmadıklarını ve her gün iç çamaşırlarını değiştirdiklerini belirtmişlerdir. Akdoğan (2020), Toraman ve ark (2020)'nın çalışmasında da aynı sonuçlara ulaşılmıştır. Elde edilen bulgular çerçevesinde kadınların genel olarak perine hijyenine dikkat ettikleri söylenebilir. Kadınların çoğunun vulva bölgesini su ile yıkadıktan sonra kuruladıkları saptanmıştır. Yapılan araştırmalarda da benzer sonuçlar görülmüştür (Akdoğan, 2020; Cangöl ve Tokuç, 2013; Timur, 2010; Toraman ve ark., 2020; Türkmen ve Karagüzel, 2021 Ünsal ve ark., 2010). Genital bölgenin ıslak kalması mikroorganizmaların üremesini kolaylaştıracağı için genital bölge temizliğinden sonra tuvalet kâğıdı ile bölgenin kurulanması gereklidir (Ünsal ve ark., 2010). Bu bulgunun elde edilmesinde kadınların bu yaşa kadar kazandıkları tuvalet eğitiminin etkili olabileceği düşünülmektedir. Araştırmadaki kadınlar genel olarak günlük yaşamında korse, tayt gibi sıkı giysiler giymediklerini ve pamuklu/penye iç çamaşırı kullandıklarını ifade etmişlerdir. Yapılan bazı çalışmalarda da benzer sonuçların elde edildiği görülmüştür (Akdoğan, 2020; Pete, 2019; Toraman ve ark., 2020; Ünsal ve ark., 2010). Vulva sağlığı açısından kullanılan iç çamaşırı kumaşının genital bölgenin kuru kalmasını sağlayacak nitelikte olması ve her gün değiştirilmesi gerekmektedir. Nefes almayan, sentetik kumaşlar genital bölgede nemli ortamı koruyarak enfeksiyon riskini arttırırlar. Bu nedenle pamuklu, penye kumaştan üretilen iç çamaşırlar kullanılmalı ve yüksek ısıda yıkanmalıdır (Ekuma ve ark., 2019; Güneri ve Şen, 2020; Torondel ve ark., 2018; Yurttaş ve ark, 2018). Kadınların vulva hijyenine yönelik olumlu uygulamalarının olması vulva sağlığı dolayısıyla kadın sağlığı açısından iyi bir sonuçtur.

Eğitim düzeyi üniversite ve üstü olan ve 30-39 yaş grubunda olan kadınların vulva bölgesini kontrol/muayene etme durumlarının daha yüksek olduğu sonucuna ulaşılmıştır. Doğurgan yaş grubunda ve eğitim düzeyi yüksek olan bu kadınların

hem sağlık personellerinden aldıkları eğitimler hem de dijital platformlardan elde ettikleri bilgilerin etkili olabileceği söylenebilir. Eğitim durumunun yüksek olmasının vulva bölgesini kontrol/muayene etmede etkili olabileceği beklenen bir sonuçtur. Ayrıca, kadınların daha önce geldikleri jinekolojik muayeneye sayısı da farkındalık oluşturmuş olabilir.

Araştırmanın Sınırlılıkları ve Güçlü Yönleri

Bu çalışmanın birinci sınırlılığı; çalışmanın sonuçları sadece çalışmada yer alan katılımcılar için geçerlidir, bu nedenle tüm kadınlara genellenemez. İkinci sınırlılığı; verilerin güvenilirliği, araştırmaya katılan kadınların vermiş oldukları yanıtların doğruluğu ile sınırlıdır. Kadınların vulva sağlığına yönelik bilgi ve davranışları ile ilgili literatüre güncel bilgiler kazandırması ve bu konuda farkındalık oluşturması araştırmanın güçlü yönüdür.

SONUÇ

Araştırma bulguları, araştırma soruları kapsamında değerlendirildiğinde, kadınların vulva sağlığına yönelik bilgi ve davranışlarında farkındalık oluştuğu fakat istendik düzeyde olmadığı görülmüştür. Özellikle kadınların çoğunun vulva sağlığının korunması ve sürdürülmesinde büyük öneme sahip olan kendi kendine vulva muayenesini duymadıkları ve vulva bölgesini kontrol/muayene etmedikleri saptanmıştır. Eğitim durumu üniversite ve üstü olan ve 30-39 yaş grubunda olan kadınların vulva bölgesini kontrol/muayene etme durumlarının daha yüksek olması beklenen bir sonuç olmakla birlikte eğitim düzeyi düşük olan kadınlara yönelik olarak koruyucu sağlık hizmetleri kapsamındaki eğitim ve danışmanlığın gerekliliğini de gözler önüne sermektedir. Fakülte ve yüksekokullardaki eğitim müfredatlarında vulva sağlığı ile ilgili daha detaylı yer verilmelidir. Ayrıca sağlık personelleri tarafından kadınlara jinekolojik muayenenin önemi hakkında bilgi verilmeli ve düzenli olarak yılda bir kez muayene olmaları konusunda yol gösterici olunmalıdır.

Çıkar Çatışması

Araştırmada herhangi bir çıkar çatışması yoktur.

Yazar Katkıları

Plan, Tasarım: BTA, EGÖ, HA, TD, SÖ, MB; **Gereç yöntem ve veri toplama**: BTA, TD; **Analiz ve yorum:** BTA, EGÖ;; **Yazım ve eleştirel değerlendirme:** BTA, EGÖ, HA, TD, SÖ, MB.

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Can Prolonged Incubation of Negative Blood Cultures Show Fungal Positivity?

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ABSTRACT
Objective: Standard duration of one set blood culture (BC) is a maximum of 5-7 days. The aim of this study was to evaluate "culture-negative" vials with a prolonged incubation (max 30 days) time and to observe any mycological growth. **Materials and Methods:** Routine BCs obtained from adult patients of Balıkesir Atatürk City Hospital for a year period were included. Render BC System BC128 (Render Biotech Co. Ltd., Shenzhen, China) were used. Randomly selected vials were re-incubated for additional three weeks by conventional methods. In case of any growth, identifications were done by Phoenix™ 100 system (Becton Dickinson, MA, USA) with cornmeal tween 80 agar (RTA Laboratories, Kocaeli, Türkiye). Antifungal susceptibility testing was applied with CLSI disk diffusion method. **Results:** A total of 6047 BC sets were obtained and randomly chosen 1040+122 negative sets (A and B groups, respectively) were included. In group A, none of them had fungal growth. In B (ongoing empiric antifungal ≤48h), only 2 sets showed significant fungal growth, which were observed in 7±2 days, and all strains were identified as *Candida glabrata* complex and these patients were on empiric fluconazole (200 mg/day). One isolate was susceptible dose dependent; the other one was resistant for fluconazole. Latter sets of these fungemia patients showed positive signals in routine incubation period. **Conclusion:** Invasive fungal infections are increasingly encountered and isolation capacity and optimization of BCs are crucial. In this study, it was obviously observed that standard incubation period is satisfactory in order to detect almost all fungemia.
Keywords: Invasive Fungal Infections, Fungi, *Candida*, Sepsis.

Negatif Kan Kültürlerinin Uzatılmış İnkübasyonu Fungal Pozitiflik Verebilir Mi?

ÖZ
Amaç: Standart kan kültürü azami 5-7 günde sonuçlanmaktadır. Çalışmanın amacı, kültür negatif şişelerin uzatılmış inkübasyonu ile mikolojik üreme olup olmayacağının araştırılmasıdır. **Gereç ve Yöntem:** Balıkesir Atatürk Şehir Hastanesi'nde bir yıl boyunca erişkin hastaların kan kültürleri Render BC Sistemi (Render Biotech Co. Ltd., Çin) ile çalışmaya dahil edildi. Kan kültürlerinden randomize seçilmiş şişelerin (A grubu) inkübasyonu haftalık geleneksel ekimlerle 30 güne tamamlandı. Muhtemel/Olası invazif fungal enfeksiyonu (IFI) olan, ampirik/preemptif antifungal alanların negatif şişeleri ayrıca değerlendirilmiştir (B grubu). Üremelere Phoenix™ 100 sistemi (Becton Dickinson, ABD) ve mısır unu tween 80 agarla (RTA Laboratories, Türkiye) tanımlama, CLSI disk difüzyonla antifungal duyarlılık yapılmıştır. **Bulgular:** Toplam 6047 kan kültürü seti (%23.06 pozitif) işlendi. Randomize seçilmiş 1040+122 negatif set (sırasıyla A ve B grupları) çalışmaya alındı. A grubunda fungal üreme olmazken, B grubunda (flukonazol-200 mg/gün≤48 saat) 2 sette anlamlı fungal üreme oldu (7-9. günler) (*Candida glabrata* kompleks). Flukonazol için, bir izolat doza bağımlı duyarlıyken, diğeri dirençliydi. Takip eden ikinci setleri normal sürede pozitif verdi. **Sonuç:** Kan kültürlerinin izolasyon kapasitesi ile optimizasyonu IFI tanısında kritik önemdedir. Mikroorganizmaların %99'unun tespiti için uygun hacimde en az iki set kan kültürü alınması gerektiğinden, takip eden setlerin normal süreçte pozitif vermesi sebebiyle, üremeler "uzamış pozitif" olarak değerlendirilmedi. Standart inkübasyon süreci tatmin edici olarak kabul edildi.
Anahtar Kelimeler: İnvazif Fungal Enfeksiyonlar, Mantarlar, *Candida*, Sepsis.

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INTRODUCTION

Invasive fungal infections (IFIs) are observed in an increasing trend with high mortalities. Approximately 300 million individuals are affected worldwide and over than 1.5 million individuals are lost, annually. Admission to intensive care units (ICUs), elder ages, intensive usage of antibiotics, mechanic ventilation and other invasive procedures such as catheters and application of immunosuppressant agents are major predisposers. However, there are various cases reported without any such underlying conditions (Arikan-Akdağlı et al, 2019; Gülmez et al, 2021; Seagle et al, 2021). Fungemia is one of the most mortally serious conditions, and by far, the most frequent etiologic agents are *Candida* spp. Geographic location, clinical status and underlying diseases directly affect the type of the causative agent, but the worldwide top five agents are *Candida albicans*, *Candida glabrata* complex, *Candida parapsilosis* complex, *Candida tropicalis* and *Candida krusei* (Gülmez et al, 2021; Seagle et al., 2021).

Appropriate early diagnosis and treatment are crucial for prognosis of IFIs. Microbiological diagnosis of fungemia mainly depends on blood culture (BC) and so, sensitivity of BC vials is very important. There are only a few automated BC systems worldwide, and some of them also provide mycological vials. Routine BC samples were obtained with inoculation into one anaerobic and one aerobic vial (one set). On the other hand, mycological growth in all these vials is seriously affected because of several reasons such as species type, sample volume and sort of vial (De Plato et al, 2019; Lamy et al, 2016). Furthermore, fungemia cases are generally reported as monomicrobial, but recent reports indicated polymicrobial fungal positivities (Gülmez et al, 2020).

Standard duration of one set BC is a maximum of 5-7 days (Lamy et al, 2016). On the other hand, standard mycological BC evaluation may extend up to 30 days (La Rocco, 2010). This condition creates a question whether it is possible to miss some of the "actually positive" cultures due to 7-day-limited incubation period. The aim of this study was to evaluate "culture-negative" vials with a prolonged incubation (max 30 days) time and to observe any mycological growth, if exists.

MATERIALS AND METHODS

Study type

This randomized study was conducted through a prospective style.

Study group

Routine BCs obtained from adult patients of Balıkesir Atatürk City Hospital for a year period (1st Nov 2020 – 1st Nov 2021) were included. Render Automated Blood Culture System BC128 (Render Biotech Co. Ltd., Shenzhen, China) were used for BCs.

Procedures

Randomly selected vials from all services (Group A) including ICUs were re-incubated in 35°C for additional three weeks after negative signaling at the end of one-week incubation (Four weeks total). In the first day of re-incubation and then once weekly, gram staining and inoculations onto 5% sheep blood agar, eosine methylene blue agar, chocolate agar, sabouraud dextrose agar (SDA), SDA medium with chloramphenicol and gentamicin (RTA Laboratories, Kocaeli, Türkiye) and ROSACHROM *Candida* Agar (Gül Biology Laboratories, Istanbul, Türkiye) were applied. Plates were incubated in 35-37°C, 5% CO_2 atmosphere and for 48h. In case of any growth, identifications were done by Phoenix^{TM} 100 automated system (Becton Dickinson, MA, USA) with cornmeal tween 80 agar (RTA Laboratories, Kocaeli, Türkiye).

Negative vials of patients that had clinically possible/probable IFI status or that were on empirical, preemptive antifungal therapy (Group B) were separately evaluated. All procedures were identical, except, additional antifungal susceptibility testing (AFST) were applied with disk diffusion method (Fluconazole 25µg, Voriconazole 1µg, Caspofungin 5µg; Bioanalyse, Ankara, Türkiye) according to The Clinical and Laboratory Standards Institute (CLSI)-M60 guideline, in case of any fungal growth (Clinical and Laboratory Standards Institute, 2017; Clinical and Laboratory Standards Institute, 2018). *Candida parapsilosis* ATCC 22019 and *Candida krusei* ATCC 6258 were used for quality control purposes.

Statistical analysis

This study is a descriptive analysis, ratios were shared.

Ethical considerations

Approved by Ethical Board of Istanbul Medipol University. Date: 05.08.2021 Number: 2021/795.

RESULTS

A total of 6047 BC sets were obtained after excluding samples of same episodes of the same patients. Different episodes of the same patients were included. Among these, 23.06% (n=1395) had at least one positive vial, which were excluded from the study. Negative samples as group B were separated (n=122). Randomly chosen 1040 negative sets as group A were included to the study. During 30-day incubation, any growth of bacteria or moulds (except *Fusarium* spp., *Paecilomyces* spp.) was considered as contamination.

Among group A, 9 sets showed contaminant growth (e.g.; gram positive bacilli) within 30-day incubation, none of them had fungal growth. Among group B, only 2 sets showed significant fungal growth. All growths were observed in 7-9 days among total incubation time, and all strains were identified as *C. glabrata* complex. One isolate was susceptible dose dependent (SDD) for fluconazole (≥15mm), the other isolate was resistant (R)

(≤14mm). Caspofungin and voriconazole susceptibility could not be interpreted due to lack of interpretive zone diameters, however they were ≥30mm and ≥20mm, respectively.

All patients with this fungal growth were already in the first 48 hours of their empiric fluconazole treatment (200 mg/day until at least two consecutive BCs were sterile) at the time of sampling due to their underlying conditions (at least one of; COVID-19, invasive catheters, malignancy, severe diabetes mellitus, chronic renal insufficiency, elder ages – 65+, etc.) and clinical symptoms such as persistent fever. It can also be noted that the latter sets of these fungemia patients showed positive signals in routine incubation period.

DISCUSSION

It is obvious that bloodstream infections (BSIs) are a major threat to public health globally, are one of the top-most causes of death, indicating an occurrence of more than two million episodes annually, which cause 13% to 20% case-fatality rate. Fungi were relatively ignored probably because of their difficult-to-detect nature. Nevertheless, mortality of fungemia can reach to over 70%. By far, *Candida* spp. are the most frequently isolated strains from BCs, on the other hand, *Cryptococcus* spp., *Rhodotorula* spp, and yeast-like organisms such as *Trichosporon* spp. can be causative agents (Kotey et al, 2021).

Species-level identification is very important to start an appropriate therapy, however such identification requires BC positivity, growth on conventional media and identification procedures via like API ID32C (bioMérieux, Marcy-l'Étoile, France), Vitek 2 (bioMérieux, Marcy-l'Étoile, France) and BD Phoenix™ systems (Becton Dickinson, NJ, USA), which takes a minimum of 3-4 days (Lin et al, 2019). This delay indicates limits of presumptive treatment for fungemia, so societies like European Confederation of Medical Mycology (ECMM) and The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) published guidelines to manage such conditions as empiric, preemptive and prophylactic treatments (Cornely et al., 2012; Hope et al, 2012; Ullmann et al, 2012). Regardless, early detection of the etiologic agent and source of infection are crucial, since time-to-detection was found to be a good prognostic factor, especially in adjunction with bedside antifungal stewardship applications (Butta et al, 2019; Dudakova, 2022). In addition, BC and conventional culture still remain to be major parts of gold standards, because of lack or inefficiency of indirect diagnostic procedures (serology, etc.) (Cuenca-Estrella et al, 2012). Therefore, it is clear that sensitivity and specificity are very important for diagnostic capacity of BCs in fungemia. In our study, with prolonged incubation, there was a very limited number of "delayed" positive vials which were all already on empirical antifungal therapy, indicating that BCs were totally effective in diagnosis. This result was compatible with several previous studies and recommendations for optimal recovery in guidelines (Lamy et al, 2016).

Several studies suggested that 5 days of incubation via automated systems is enough, whereas the incubation period over 5 days seems to increase contaminations. Marginson et al. (Marginson et al., 2014) found that 2.7% of positive BC vials gave signal between 5 and 7 days, but only 0.5% of them were clinically significant. On the other hand, clinically significant fungi are mostly low-level CO_2 producers, or slowly growing microorganisms. Although there is antimicrobial binding resin in vials, antifungal application prior to sampling may reduce and/or delay positivity, since concentration of microorganism has critical role (Burduniuc et al, 2019; Lamy et al, 2016). Another study of Bourassa et al. (Bourassa et al., 2019) reported only one *Fusarium* spp. growth with prolonged incubation over a 4.5-year period. Similar results were obtained not only from fungal side, but also bacterial perspective, indicating even 4-days of incubation was sufficient (Baron et al., 2005; Ransom et al., 2021). Our study supported these data and prior-to-sampling fluconazole therapy in our B group might be considered as "delayer" in our positive vials, despite high MICs.

Notably, the "prolonged" isolates were *C. glabrata* complex (one resistant to fluconazole). It has several differences from other *Candida spp*. including genetic pattern, virulence factors and susceptibility profile (Hassan et al., 2021). Its flexibility on environmental adaptation also seems to be remarkable (Carreté et al, 2019). On the hand, a recent study on immune relations showed this strain to have relatively much more decreased survival and more rapid elimination (Kämmer, 2020). However, in cases of invasive *C. glabrata* infections, morbidity and mortality is approximately 40–60%, which might be because of intrinsic low susceptibility to the most commonly used azoles (Hassan et al., 2021). In our study, both "prolonged-positive" sets were the first samples of the patients, and the patients immediately become "usual" positive in the second sampling. This might be because of empiric therapy in combination with immune response, even if the strains were SDD and R. Hence, microbiological susceptibility does not always correlate with clinical resistance (Morio et al., 2017; Rex et al., 2002). Wider multicenter studies are required to prove this hypothesis.

Limitations and Strengths of Study

Our study has several limitations. First, there was not any standardization in BCs, including volume, sampling procedures, etc. Particularly volume is a major indicator for false negative results; however, we believe it was substantially ruled out by repetitious conventional inoculations. On the other

hand, international guidelines recommend at least 4 bottles (2 sets) with adequate volume for each one to detect 99% of the pathogens (Lamy et al, 2016). Since our two isolates were actually in this spectrum and latter sets were "usual" positive for both patients, the isolates should not be considered as "prolonged positive". Secondly, we could not measure preliminary fungal concentrations in the vials which is labor-intensive and not routinely used. These BC systems are well validated recently, so we do not think that it is a corruptive issue. Thirdly, pre-device period and environmental temperature are major factors for false result (Lamy et al, 2016). All BCs were inserted to device within two hours (>98%) and it could be followed by our hospital software. Patients with disrupted pre-incubation periods were not included to the study. Finally, we could not perform broth microdilution, could not share MICs of the isolates including fluconazole and so, we could not evaluate epidemiologic cut-off values for antifungals. However, the patients were already on only fluconazole therapy, and we performed CLSI disk diffusion for this antifungal, thus we do not think this was a disruptive issue.

CONCLUSION

Diagnosis of BSIs are mainly based on BCs. Fungi are increasingly encountered as causatives of BSIs due to various changes in patient populations. In addition, they currently have a widening species spectrum (Gülmez et al, 2021). Within this scope, isolation capacity and optimization of BCs are crucial. In this study, it was obviously observed that standard incubation period is satisfactory in order to detect almost all fungemia. Escalation/de-escalation methods, effects of MICs and usage of mycological vials were beyond the scope of this study, however it is clear that more studies are required discussing such issues.

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Conflict of Interest

The authors wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

Author Contributions

Plan, design: AKS, DÖY, BGS, MG; **Material, methods and data collection:** AKS, DÖY, BGS, MG; **Data analysis and comments:** AKS, DÖY, BGS, MG; **Writing and corrections:** AKS, DÖY, BGS, MG.

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Nursing Students` Experiences with Clinical Placement During the Covid-19 Pandemic After the Online Education

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ABSTACT

Objective: It examine the clinical placement experiences of nursing students following their online education during the Covid-19 pandemic. **Material and Methods:** A qualitative method with a phenomenological approach was used. The sample of the study consisted of a total of 111 nursing students from the 2nd, 3rd and 4th grades who received online education and clinical practice during the Covid-19 pandemic. Thematic analysis with the NVivo 20 program was used in the analysis of the data. **Results:** There themes emerged from the data: 1) The impact of Covid-19 on nursing students; 2) Perceived online education during Covid-19;3) Clinical experiences during Covid-19. **Conclusion:** Nursing students described Covid-19 as life-threatening, causing them to experience fear and anxiety. Online nursing education influences the pros and cons of clinical placement in the learning process.

Keywords: Nursing Students, Covid-19, Experiences.

Hemşirelik Öğrencilerinin Online Eğitimden Sonra Covid-19 Pandemisi Sırasında Klinik Uygulama Deneyimleri

ÖZ

Amaç: Hemşirelik öğrencilerinin Covid-19 pandemisi sırasında online eğitimlerini takiben klinik uygulama deneyimlerini incelemektir.

Gereç ve Yöntem: Fenomenolojik yaklaşımlı nitel bir yöntem kullanılmıştır. Çalışmanın örneklemini, Covid-19 pandemisi sırasında online eğitim alan ve klinik uygulamaya çıkan 2., 3. ve 4. sınıflardan toplam 111 hemşirelik öğrencisi oluşturmuştur. Verilerin analizinde NVivo 20 programı ile tematik analiz kullanılmıştır.

Bulgular: Verilerden ortaya çıkan temalar şunlardır: 1) Covid-19 'un hemşirelik öğrencileri üzerindeki etkisi; 2) Covid-19 sırasında algılanan online eğitim; 3) Covid-19 sırasındaki klinik deneyimler.

Sonuç: Hemşirelik öğrencileri, Covid-19 'u hayatlarını tehdit eden, korku ve endişe yaşamalarına neden olarak tanımladılar. Online hemşirelik eğitimi, öğrenme sürecinde klinik yerleştirmenin artılarını ve eksilerini etkiler.

Anahtar Kelimeler: Hemşirelik Öğrencileri, Covid-19, Deneyimler.

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INTRODUCTION

The new coronavirus disease (COVID-19) has a high morbidity and mortality incidence and is the most significant viral pandemic in the last century (Majrashi et al., 2021). In Turkey, universities provided online education as of March 2020 (HEI, 2020). Additionally, nursing students' clinical placement experiences were conducted online until September 2021 in Turkey.

Online nursing education during COVID-19 led to challenges for nursing students, lecturers, and institutions (Lewandowski et al., 2021). Due to insufficient online learning-based teaching approach competencies, a lack of student interaction, and online courses, instructors experienced difficulties (Stanistreet et al., 2020). On the other hand, students experienced challenges because of their incapacity to develop their clinical abilities, a lack of motivation, and interruptions imposed by online learning (Dost et al., 2020). Additionally, online education was stated as a significant source of stress (Subedi et al., 2020), inability to engage (Lovric et al., 2020), and stress related to difficulties in developing clinical skills (Michel et al., 2021), and reported anxiety (Michel et al., 2021; Savitsky et al., 2020).

The move to online education through clinical training of nursing students resulted in challenges in learning skills in clinical practices. Although attempts to continue clinical placement experiences online clinical practices, online education implementations cannot replace clinical placement experiences (Head et al., 2022). Therefore, clinical placement experiences are 50% of the nursing profession and allow for the theory to be applied to the practice and development of skills (Killam & Heerschap, 2013).

To the best of our knowledge, this study is the first to investigate nursing students' experiences after their first clinical placement after online education during the COVID-19 pandemic in Turkey. This research offers data to build knowledge of how these students experienced the first clinical placements following their online education during the Covid-19 pandemic.

MATERIALS AND METHODS

Design

A practical method for comprehending individual experiences is phenomenological research. A phenomenology is an approach that analyses everything that awareness perceives and investigates how people view the experiences they encounter in groups that have in-depth experience with a phenomenon (Gill, 2020). Therefore, this study examined nursing students' experiences who had online clinical placement during Covid-19 and described their understanding of Covid-19.

Setting and participants

The study was carried out at a university in Turkey. The sample was a convenience sample with participants recruited online using e-mail in a university in Turkey. The following inclusion criteria were used: participants should be nursing students` 2nd, 3rd, and 4th years of university students who took online education during the pandemic. A total of 111 eligible participants completed the survey and were identified as female (n= 92) and male (n=19). Furthermore, the exclusion criteria were nursing students' 1st year of university.

Data collection procedures

Qualitative data were collected using demographic features and open-ended questions within a qualitative survey, which used metaphors, answered the survey questions, and explained why it was used metaphors. Participants responded to the questions in their own words, using the metaphors in any detail they considered appropriate. In contrast to other types of qualitative data, qualitative surveys allow data collection from a diverse and varied sample while ensuring a high level of anonymity. Therefore, they are an excellent source for understanding challenging and sensitive subjects, such as evaluating nursing students` experiences related to clinical placement after taking 1.5 years of online education during the Covid-19 pandemic.

Data analysis

Thematic analysis was used for an in-depth understanding of the experiences of nursing students who have made their first clinical placement following their online training during the Covid-19 pandemic (Braun & Clarke, 2006). The first codes were created by reading the transcripts. The codes were gathered under the themes, clearly defined themes, striking quotations were selected, and reported data analysis. NVivo 20 was used for coding.

Trustworthiness

Validity and reliability are improved in qualitative research when comprehensive data collection and analysis are produced (Creswell & Poth, 2018; Yıldırım & Simsek, 2016). The reliability in terms of consistency was tested in the study using three experts in qualitative research. By coding the metaphors and the questions designed to be perceived metaphorically, the three researchers who carried out the research separately developed categories. By debating the metaphors' codes and categories, 193 codes, three categories, three themes, and ten sub-themes were developed in line with the participants' experiences of clinical placements. Then, three researchers had discussions on the main themes and sub-themes. After discussion meetings, themes and subthemes were created by reaching a common decision through repeated qualitative surveys.

Ethical consideration

The study was approved by the Medical Research Ethics Committee of Bursa Uludağ University, Faculty of Health Sciences in Bursa, Turkey (29.09.2021, Reference Number: 2021-08). Written and verbal consent was obtained from the researchers. Researchers stated to the participants that qualitative surveys were recorded, the data was used for research purposes only, and their identities were kept confidential.

RESULTS

A total of 111 eligible nursing students from the 2nd, 3rd, and 4th years of the university participated in the qualitative survey (Table 1). Therefore, they had clinical placement before the Covid-19 pandemic. One hundred ninety-three codes were extracted from the data obtained through the face-to-face qualitative surveys. Three main themes and ten sub-themes emerged from those codes. The three themes were: the impact of Covid-19 on nursing students', perceived online education during Covid-19 and clinical experiences during Covid-19 .

Theme 1: The impact of Covid-19 on nursing students

Understanding of Covid-19

Nursing students described Covid-19 as a contagious epidemic that unexpectedly affects people's lives and the world. Moreover, they defined Covid-19 as a teacher, leading them to question their life purposes and providing new gains. In addition, the uncertainty of the progress of Covid-19 has not been explored, and some nursing students highlighted this epidemic led to a life threat to people's lives. Due to the adverse effects of this unpredictable process on human life, people have begun to experience feelings of hopelessness.

"Unexpected box. We do not know what will happen, how it will impact you, whether your immune system will handle it (P32)."

Feeling fear, anxiety, and hopelessness

The disease process was frightening because Covid-19 led to a high number of deaths. Nursing students have experienced fear and anxiety due to the uncertainty of the disease process. Furthermore, it was underlined that the high risk of infection with Covid-19 led to increased anxiety and hopelessness caused by the loss of loved ones.

"Cloudy weather. It is uncertain when it will occur. Even though you take the required precautions, something does not go as expected. You may eventually experience surprise, fear, sadness, or happiness (P29)."

Prevention of Covid-19 and impact on lifestyle

Protective measures are crucial because of the high level of infectiousness. Some nursing students highlighted that wearing protective clothing and reducing social interaction on their social networks were the ways to prevent the disease. Furthermore, the disease would be more controlled at that level the more importance was given to preventive efforts. Within the scope of disease protection, individuals learn and adopt new behaviors in their social interactions. Moreover, social networks were limited to family networks instead of peer or neighbor networks.

"We spent a lot of time isolated at home, with minimal social interactions and family and neighborhood relationships (P44)."

Themes 2: Perceived online education during Covid-19

This main theme included sub-themes of the aspect of the online education that nursing students received for 1.5 years during the Covid-19 pandemic. The three sub-themes were followed: transition to online education and challenges faced, the importance of the clinical internship, and psychological impact.

Transition to online education and challenges faced

Nursing students highlighted a new online social environment brought by experiencing the process in which they received online nursing education. Some nursing students emphasized the strengths and weaknesses of adopting this new social environment and the uncertainty of the online education process**.**

"In both my social and academic lives, I experienced restrictions and boredom. Regardless of how much free time we appear to have, and I can honestly state that I have never been motivated by a need (P91)."

The importance of a clinical placement

The online education process led to challenges in connecting theoretical nursing education and clinical placement. Even though clinical internships have been completed online, that led to a lack of clinical placement experiences. Nursing students stated that clinical placement was essential in their nursing education process.

"Clinical internship was ineffective as they were made with online education. Our nursing skills in clinics have not improved due to lack of experiences in clinics (P69)."

Theme-3: Clinical experiences during Covid-19

Difficulties of experiencing a clinical internship

The challenges encountered in the clinical setting safety precautions, including wearing masks and distance guidelines following those precautions, was challenging for nursing students, who reported trouble adapting. Nursing students explained their difficulties to their incapacity to transition to clinical placement and their lack of paying awareness of these precautions while experiencing and delivering patient care. At the same time, it ensures accurate prevention of disease spread. After Covid-19 , they revealed to experience in clinical placement for the first time and discovered their theoretical understanding in a clinical placement, which they described as their lack of previous experience.

“We were away from the hospitals for a long time due to the pandemic. I had difficulty getting used to the patients and procedures when we began training in the hospital. The nurses suggested we begin by observing (P13).

Nursing students who resumed clinic placement after the clinical practice was discontinued in clinics but applied online highlighted the lack of clinical experiences after the online clinical placement was applied, the lack of mentors to help them supervise the clinic placement was highlighted by students because of this feeling. Nursing students that had their clinic placements moved emphasized that they were concerned about how Covid-19 would affect their clinical practice.

Table 1. The participants' demographic characteristics (n=111).

Variables	n	%
Grade		
2	2	1.8
3	39	35.1
4	70	63.1
Gender		
Female	92	82.9
Male	19	17.1
Status of Covid-19		
Yes	19	17.1
No	92	82.9
Covid-19 -related loss of a loved one		
Yes	16	14.4
No	95	85.6
Total	111	100

Experience with clinical placements, I always did as they said (P80)."

Emotional experiences

Fear, anxiety, helplessness, exhilaration, and uncertainty were among the emotions nursing students reported as they entered clinical practice for the first time after completing their online education. The limitations imposed by the Covid-19 pandemic process negatively impacted the students' and their families' adjustment to the clinical placement, which was established with precaution measures to prevent the spread of the disease before being returned to clinical placement. They caused them to have difficulty adapting and experience fear and anxiety.

"Our immunisation process was not completed when we started to work with patients as part of the Covid-19 process. I was terrified and helpless (P14)."

"I was afraid of spreading the infection to my family because I live with them (P31)."

Some nursing students stated the excitement of returning to clinical placement because of applying theoretical knowledge to clinical practice. Additionally, the excitement of clinical practice motivated them to work hard and effectively in clinical placement. It was a remarkable and valued experience and encouraged them to play a vital part in patient care. The students' positive emotion was enthusiasm, which they connected to their first-time clinical experiences after Covid-19 and the placement of their academic knowledge into the clinical practices.

"I felt surprised and afraid because there were things that I had never done in practice and even the fundamentals that I had only partially applied (P78).

The resuming clinical internship eliminates the inadequacies of clinical practice resulting in participation in clinical placement, which led to relief. Despite, the Covid-19 uncertainty in the clinical practice process and some nursing students' anxiety over the possibility of committing mistakes in clinical practice.

"Even though I try my best, I feel that I still have a lot to learn and that I could be doing better (P107)."

"…the worry that I could make a mistake at any time makes me anxious (P65)."

Feeling unsafe in clinical placement

The clinical setting was described as unsafe and dangerous. Nursing students stressed that the hospital setting carries a significant risk for the transmission of Covid-19 and that their concern of contamination due to this high risk is unsafe. Despite taking precautions, they underlined that it is uncertain how or when they will discover Covid-19. They stressed how they felt vulnerable to asking for assistance in the clinical setting, which they described as a dangerous environment. Additionally, the students' fear of clinical practice has increased because they are accountable for contamination.

"According to the contracts we signed, no one was responsible if we contracted Covid-19 at the clinics we visited during the Covid-19 period, but the requirement that we sign them caused me to perceive myself as a victim (P101)."

The awareness of the importance of clinical placement

The learning process was aided by the evolution of theoretical education and clinical practice. Integrating theoretical instruction with clinical practice improves accuracy for practical limitations in students pursuing clinical practice. In addition, clinical experience has influenced nursing students' involvement in patient care.

"As someone who has only been supplied with knowledge, I have no idea how to apply it. However, I started to fade when I failed to put this knowledge into practice and found it difficult to make the clinical placement (P33)."

DISCUSSION

This study aimed to examine nursing students` experiences with clinical placement during the Covid-19 pandemic after the online clinical placement and describe their understanding of Covid-19 .

This study's findings state that nursing students experienced anxiety and fear for their families and neighbors. The fear of having family members and relatives having Covid-19 positive has caused anxiety among nursing students (Lovrić et al., 2020). Furthermore, this study highlighted the fatality of Covid-19 , and the lack of knowledge about the course of the disease impacted fear and anxiety. Similar findings were found in the study by Winn et al. (2021), which sought to examine the viewpoints of medical faculty residents regarding their pandemic experiences (Winn et al., 2021). These students had a decreased desire to practice medicine for patients at home and those in health. A study conducted in Norway in 2021 examined the association between fear of Covid-19 and at risk for Covid-19 transmission and being less confident in the precautions implemented. Students who did not engage in clinical placement during the pandemic feared Covid-19 (Beisland et al., 2021). During clinical practice, it was found that nursing students in their last year felt slightly anxious and moderately fearful (Yazıcı & Okten, 2022). These emotions may have been caused by the possibly fatal Covid-19 , the unknown nature, and the lack of available treatments and vaccines.

The lack of clinical placement because of the pandemic, it was emphasised, made nursing students feel inadequate, which harmed their learning processes and led to failure. Students have encountered the unpredictability of how this approach may impact their academic careers (Huang et al., 2020; Lovric et al., 2020). In research by Duprez et al. (2021) examining nursing students' desire to continue in or leave their internship during the pandemic, it was found that 61.7% of the students were prepared for clinical placement and that 30.7% were qualified to deliver the care for coronavirus patients (Duprez et al., 2021). This finding suggests that it is crucial to assess students' readiness. Even though Covid-19 led to a halt in clinical placement, theoretical education and clinical placement have to take place concurrently. Our findings were similar to a study examining how students engaged with theoretical education and clinical placement, indicating the compatibility of clinic and theory (Sancar et al., 2021).

Peer support and clinical and academic staff assistance are essential components of clinical compliance (Lovric et al., 2020). Due to their experience in a dangerous and potentially infectious pandemic, their inexperience with online education, the fact that they were not acknowledged as a part of the team, and the fact that they cannot access nurses for assistance, students may have feelings of insecurity. On the other hand, the clinic is an essential component of the profession, and nursing students noted this when they were asked about their fears of working in a clinical environment (Lovric et al., 2020). However, they highlighted their willingness to work in the clinic and care for patients, regardless of their fears (Casafont et al., 2021). The clinical environment, students' professional knowledge, psychomotor, professional attitude and responsibility, interpersonal and communication skills, as well as self-confidence and autonomy in the clinical setting, are all factors that should be considered (Lovric et al., 2015).

Nursing students noted that it was stressful and resulted in a lack of motivation. Similarly, medicine interns pointed out that Covid-19 was causing them to feel overwhelmed, fearful, anxious, and stressed and that these feelings were exacerbating an already demanding internship with high burnout levels (Singaram et al., 2022). Nursing students positively evaluated the ability to attend the modules from any location and online education (Park & Seo, 2022). In the beginning, nursing students claimed that online education provided comfort. They then felt restricted by the new social network and encountered difficulties due to moving on with their lives in this environment. In contrast to our findings, a systematic review examining how health profession students` perceptions and engagement of online learning during Covid-19 stated that when compared to classroom learning, students' motivation for attending exclusive events was determined to be at least as high (Naciri et al., 2021).

CONCLUSIONS

This study has identified that students have experienced the Covid-19 process's uncertainty, infection risk, fear of losing loved ones, anxiety, and hopelessness. Online education led to a transition process both in the educational and social environments of nursing students, and they were limited in this transition process. The significance of clinical placement experiences has been highlighted because of the negative impacts of inexperienced clinical practice on nursing students' learning processes and the precautions taken.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: AÖ, EU, BS; **Material, methods and data collection:** AÖ, EU, BS; **Data analysis and comments:** AÖ, EU, BS; **Writing and corrections:** AÖ, EU, BS.

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The Preparation of Liposomal Formulations of Gentamicin and Ceftiofur Used in Veterinary Medicine

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ABSTRACT

Objective: The aim of this study is to produce liposomal drugs that are scarcely found in veterinary medicine. Therefore, the current study was designed to produce liposomal formulations of ceftiofur and gentamicin for veterinary use and to perform their quality control studies. **Materials and Methods:** The Bangham Method was chosen for the preparation of liposomal formulations of gentamicin and ceftiofur. **Results:** The particle size, polydispersity index and zeta potential were found to be 3934.67 nm, 0.471, -10.3 mV for Ceftiofur-1 coded formulation, 4573.0 nm, 0.308, -9.9 mV for Ceftiofur-2 coded formulation, 479.4 nm, 0.437, -44.8 mV for Ceftiofur-3 coded formulation, respectively. The particle size, polydispersity index and zeta potential were found to be 5185.67 nm, 0.599, -6.5 mV for Gentamicin-1 coded formulation, 4228.0 nm, 0.505, -7.8 mV for Gentamicin-2 coded formulation, 2138.67 nm, 0.565, -6.5 mV for Gentamicin-3 coded formulation, respectively. The encapsulation efficiency of liposomal formulations containing ceftiofur; 82.85%, 95.74%, and 92.06% was found for ceftiofur-1, ceftiofur-2 and ceftiofur 3, respectively. **Conclusion:** The liposomal formulations of ceftiofur and gentamicin were successfully prepared and their quality control studies were carried out. It was concluded that pharmacokinetic/pharmacodynamic studies should be performed to evaluate the efficacy of liposomal formulations.

Keywords: Drug, Formulation, Liposome, Veterinarian.

Veteriner Hekimlikte Kullanılan Gentamisin ve Seftiofur'un Lipozomal Formülasyonlarının Hazırlanması

ÖZ

Amaç: Bu çalışmanın amacı, veteriner hekimlikte çok az bulunan lipozomal ilaçların üretilmesidir. Bu nedenle mevcut çalışma, veteriner kullanım için seftiofur ve gentamisinin lipozomal formülasyonlarını üretmek ve kalite kontrol çalışmalarını yapmak hedefleriyle tasarlanmıştır. **Gereç ve Yöntem:** Gentamisin ve seftiofur'un lipozomal formülasyonlarının hazırlanması amacıyla Bangham Metodu tercih edildi. **Bulgular:** Sonuç olarak; seftiofur-1 lipozomunun partikül boyutu 3934.67 nm, polidispersite indeksi 0.471, zeta potansiyeli -10.3 mV'dir; Ceftiofur-2 lipozomunda; parçacık boyutu 4573.00 nm, polidispersite indeksi 0.308, zeta potansiyeli -09.9 mV; Ceftiofur-3 lipozomlarında; parçacık boyutu 479.40 nm, polidispersite indeksi 0.437, zeta potansiyeli -44.8 mV ölçülmüştür. Gentamisin-1 lipozomunda; parçacık boyutu 5185.67 nm, polidispersite indeksi 0.599, zeta potansiyeli -06.5 mV; Gentamisin-2 lipozomunda; parçacık boyutu 4228.00 nm, polidispersite indeksi 0.599, zeta potansiyeli -07.8 mV; Gentamisin-3 lipozomunda; parçacık boyutu 2138.67 nm, polidispersite indeksi 0.565, zeta potansiyeli -06.5 mV ölçülmüştür. **Sonuç:** Seftiofur ve gentamisinin başarılı bir şekilde lipozomal formülasyonları hazırlandı ve kalite kontrol çalışmaları gerçekleştirildi. Lipozomal formülasyonların etkinliklerinin değerlendirilmesi için ise farmakokinetik/farmakodinamik çalışmaların yapılması gerektiği kanaatine varıldı.

Anahtar Kelimeler: İlaç, Formülasyon, Lipozom, Veteriner.

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INTRODUCTION

Drug resistance is a major problem in human and veterinary medicine worldwide. It reduces the effectiveness of many conventional antimicrobial medicines for treating infections (Gupta et al., 2019). In fact, eradicating resistant pathogens is a important challenge and requires a higher range of antibacterial agent at the site of action. Administering such high doses of antibiotics can be highly toxic or even fatal (Gonzalez et al., 2019). To overcome the ongoing problem, numerous researchers focused on two solutions; search for new antibacterial agents and development of drug delivery methods that improve the effectiveness of current antimicrobial agents (Shen et al., 2017). Encapsulation of antibiotics in liposomes improves their targeted effects and decreases their off-target effects. To maintain the efficacy of antibacterial agents, it protects cells from elimination of the body's immun system and the toxic effects of the loaded drug. Therefore, liposomes are considered efficient as a drug delivery system to improve the biocompatibility of antimicrobial agents (Al-Darraji et al., 2020; Saddiqi et al., 2022).

Nanotechnology is a promising topic of science that comprises the advancement and generation of a wide range of nanomaterials. In the past few decades, the field of nanotechnology has grown exponentially. A wide range of nanoparticles such as liposomes, dendrimers, micelles, and organic nanoparticles are applied used as a drug delivery system. Liposomes are the most widely used and well-known nanoparticles among various types of nanomaterials in nanomedicine because they are biodegradable due to their high biocompatibility and biodegrability and show less toxic effects for *in vivo* use. These unique characteristic properties of liposomes result from their high similarity to the cell membrane in terms of both structure and components, facilitation of effective interaction between liposomes and the cell membrane and as a result increasing yield and cellular uptake. Liposomes are defined as spherical vesicles composed of one or more phospholipid bilayers surrounding an aquatic core. It can improve the pharmacokinetics/pharmacodynamics of antimicrobial drugs and reduce their toxic effects (Beltrán-Gracia et al., 2019; Kim & Jeong, 2021).

Ceftiofur is a third-generation cephalosporin antibiotic approved for animal health use only for the treatment of systemic infections caused by susceptible pathogens in horses, cattle, dogs, sheep and goats. It has a wide range of uses against diseases caused by Gram (+) and Gram (-) bacteria in milking cows, notably because it does not leave drug residues in milk (Cavanagh, 2012). It has highly effective *in vitro* against pathogenic bacteria such as *Pasteurella spp., Haemophilus spp., Salmonella spp., Mannhemia spp., and Actinobacillus* spp. (Hornish & Kotarski, 2002).

Gentamicin is an aminoglycoside antibiotic that has bactericid activity against many Gram (+) positive and Gram (-) negative organisms. In the group of aminoglycosides, following amikacin, it has the broadest spectrum and the highest antibacterial effect. Depending on the concentration, they usually have a rapid bactericid effect against a wide variety of aerobic bacterial strains. Due to aminoglycosides are polar substances, they enter bacterial cells only by active transport, therefore, not active against aerobic or anaerobic bacteria under anaerobic conditions. Because of these properties, they are very few absorbed from gastrointestinal tract. They across placenta, can accumulate in fetal plasma and amniotic fluid, but cannot across the blood-brain barrier. They have a limited distribution in the body's extracellular fluid and their transition into mammalian cells is difficult. It is only slightly bound to plasma proteins. It is excreted unchanged from the body through the kidneys. Depending on the application, there is a 5-25% risk of developing nephrotoxicity. Therefore, they are narrow spectrumed drugs. Nephrotoxicity is directly proportional to the dose and duration of drug use and is generally reversible (Ali et al., 2011; Chou et al., 2015; Kayaalp, 2018).

When all this knowledge is evaluated, it is also important to prepare liposomal forms of drugs such as ceftiofur and gentamicin. In this study, it is aimed to investigate how to prepare liposomal forms of these drugs under laboratory conditions.

MATERIALS AND METHODS

Procedures

Used materials; phosphotiditylcholine (L-α-phosphatidylcholine, Sigma-Aldrich), cholesterol (Acros Organics, Belgium), gentamicin sulfate (Acros Organic 455310010), ceftiofur (Acros Organic 465890010), chloroform, methanol, dimethylsulfoxide (Sigma-Aldrich), phosphate buffer tablet (Oxoid-BR0014G, UK), Rotary evaporator (Isolab), Malvern Zetasizer NanoZS, UV-VIS Spectrophotometer (UV1900i) and glass laboratory equipments.

Liposomes were prepared by thin layer hydration technique (Bangham, et al., 1965). The active ingredients ceftiofur, gentamicin, phospholipid (PC, egg phosphotidylcholine), cholesterol (CL) to be liposomized were weighed on a sensitive balance and placed in beakers. Chloroform: methanol was added in a 1:1 ratio. The substances in the beaker were dissolved with gentle wrist movements until complete clarification was achieved. This mixture was poured into a 100 mL volatile flask and attached to the rotary evaporator apparatus. To obtain the lipid film; in a rotary evaporator at 37° C., the mixture was evaporated for 15 minutes at a speed of 250 rpm. As a result of these processes, a lipid film layer was obtained. To hydrate the resulting dry lipid film, 10 mL of distilled water was added to the evaporating flask and rotated without vacuum. The mouth of the glass flask was sealed with parafilm and vortexed. It was placed in an ultrasonic bath for 20 minutes to reduce the particle size. The final mixture was placed in tubes for centrifugation and stored in a refrigerator at 4°C with sealed tightly.

Centrifugation was performed at 16,500 rpm for 40 minutes. The collapsing liposomal portion and the aqueous portion were placed in separate test tubes and refrigerated at 4°C for further analysis. The amounts and lipid/cholesterol ratios of all ingredients in the formulations, the amounts of drug molecules, solvents and dispersion liquids are shown in Table 1.

The particle size, polydispersity index and zeta potential of liposomes were measured using Malvern Zetasizer Nano-ZS (United Kingdom, UK) equipped with dynamic light scattering (DLS) and electrophoretic light scattering techniques (Çoban et al., 2021). For this purpose, the liposomes precipitated by centrifugation were mixed with 1 ml of distilled water and dispersed. 120 µL of these samples were taken and placed in the measuring cuvette and 1880 µL of distilled water were added. All measurements were performed at 25± 0.1 ºC.

The encapsulation efficiency (EE) of ceftiofur liposomes was calculated using the following formula (Eq.1). The encapsulation efficiency of ceftiofur was measured at 292 nm (Çoban et al., 2020).

$$EE\ (\%) = \frac{\text{Total drug} - \text{Free drug in supernatant}}{\text{Total drug}} x100 \quad \textbf{Eq.1}$$

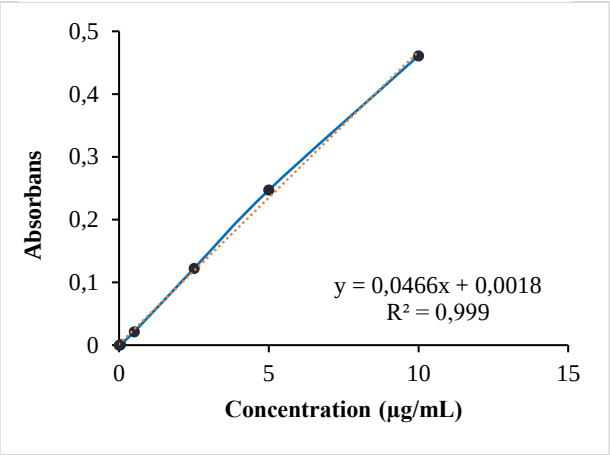

Figure 1. Calibration curve of ceftiofur.

Table 1. Amount of substance in liposome preparation.

No	Formulation name	Lipid cholesterol		Active drug	Amount Of solvent		Amount Of dispersion
		PC : CL (mg)		(mg)	Chloroform (ml): Methanol (ml)		Distilled Water (ml)
1	Ceftiofur-1	3 (50.5)	1 (19.8)	25.5	1 (5.0)	1 (5.0)	10
2	Ceftiofur-2	2 (60.0)	1 (29.8)	25.2	1 (5.0)	1 (5.0)	10 (PBS)
3	Ceftiofur-3	3 (32.0)	1 (12.0)	31.0	1 (5.0)	1 (5.0)	10
4	Gentamicin-1	2 (50.2)	1 (30.2)	49.9	1 (5.0)	1 (5.0)	10
5	Gentamicin-2	1 (50.0)	1 (49.5)	25.1	1 (7.5)	1 (7.5)	10
6	Gentamicin-3	1 (50.2)	1 (50.0)	25.3	1 (7.5)	1 (7.5)	10

SEM (Scanning Electron Microscope) analysis

The scanning electron microscope used to take pictures is a JEOL Neoscope brand JCM-5000 SEM.

Before the images were taken, approximately 0.02 g of gentamicin and ceftiofur in the liposomal formulation were weighed and placed on a bidirectional carbon tape. First, gold plating was performed by applying a vacuum of 8 x 10 -1 mbar/Pa and a voltage of 10 mA in the quorum coater. Gentamicin was examined in SEM at 2000x and 1500x magnification (Figure 2). Ceftiofur was examined in the SEM at 1000x magnification (Figure 3).

Statistical analysis

The statistical analysis of the experimental results was performed by Student's t-test using the GraphPad Prism 5.0 and all data were expressed as the mean standard deviation (SD). P values less than 0.05 were considered a statistically significant value.

RESULTS

This research was conducted to determine the physical properties of the active ingredient that can affect drug performance and development. Our study was conducted alone or to determine the relationship with excipients to ensure that the drug is of good quality in terms of physical and chemical properties.

Looking at Table 2, the particle size, zeta potential and polydispersity index results can be seen. The particle size, polydispersity index and zeta potential were found to be 3934.67 nm, 0.471, -10.3 mV for Ceftiofur-1 coded formulation, 4573.0 nm, 0.308, -9.9 mV for Ceftiofur-2 coded formulation, 479.4 nm, 0.437, -44.8 mV for Ceftiofur-3 coded formulation, respectively.

The particle size, polydispersity index and zeta potential were found to be 5185.67 nm, 0.599, -6.5 mV for Gentamicin-1 coded formulation, 4228.0 nm, 0.505, -7.8 mV for Gentamicin-2 coded formulation, 2138.67 nm, 0.565, -6.5 mV for Gentamicin-3 coded formulation, respectively.

The encapsulation efficiency of liposomal formulations containing ceftiofur; 82.85%, 95.74%, and 92.06% was found for ceftiofur-1, ceftiofur-2 and ceftiofur 3, respectively. In liposomal formulations containing gentamicin, measurements of the encapsulation efficiency could not be performed because the results of the drug's wavelength scans could not be found in the UV-VIS spectrophotometer.

Table 2. Measurements of liposomal formulations.

No	Formulation Name	Particle Size Mean±SD (nm)	Polydispersity Index Av. Mean±SD	Zeta Potential Mean±SD (mV)
1	Ceftiofur-1	3934.67±463.32	0.471±0.009	-10.3±0.3
2	Ceftiofur-2	4573.00±524.00	0.308±0.197	-9.9±0.8
3	Ceftiofur-3	479.40±12.13	0.437±0.022	-44.8±0.6
4	Gentamicin-1	5185.67±472.48	0.599±0.044	-6.5±0.2
5	Gentamicin-2	4228.00±315.98	0.505±0.099	-7.8±0.0
6	Gentamicin-3	2138.67±34.32	0.565±0.050	-6.5±0.3

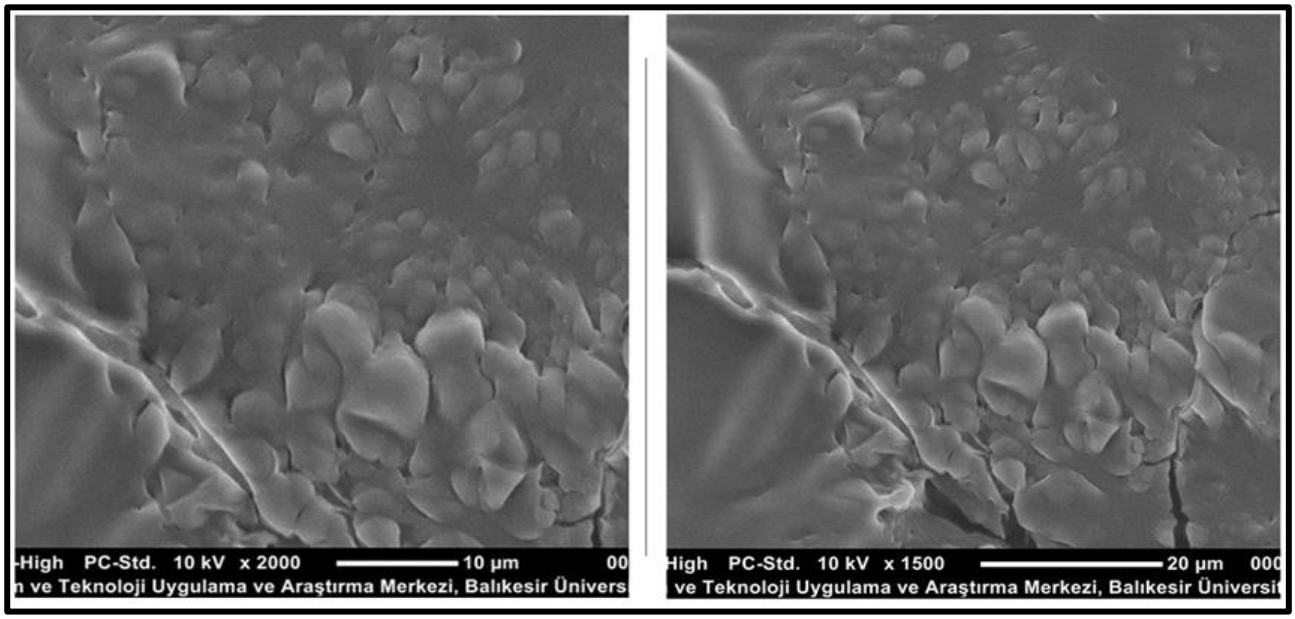

Figure 2. Gentamicin imaging under SEM.

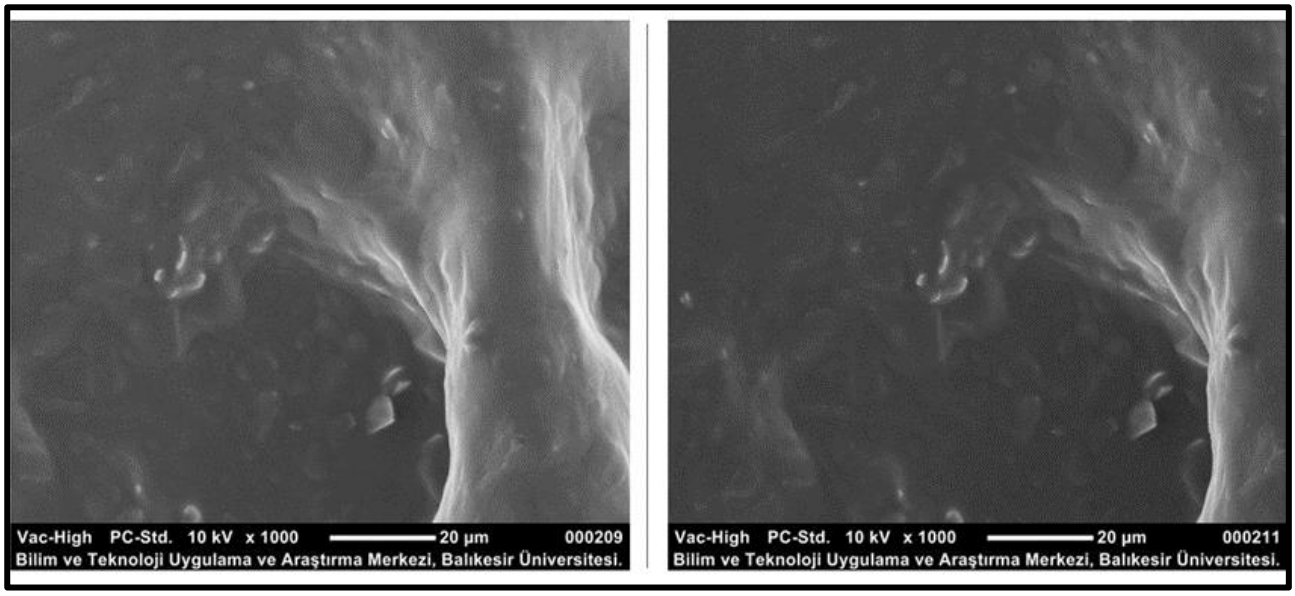

Figure 3. Ceftiofur imaging under SEM.

DISCUSSION

Particle size measurements in liposomes; it is an important quality control parameter to provide information about the physical properties and stability of the particles and to predict the stability of the particles in the body and their behavior in plasma and blood. Polydispersity index (PDI) measurements performed in liposomal formulations indicate the distribution of molecular weight in a given sample. A PDI value close to 1 indicates high particle size heterogeneity and no uniform size distribution. Although the particle size of liposomes varies depending on the oil composition and manufacturing processes and the properties of the encapsulated substance, the presence of cholesterol in the liposomal system increases the particle size (Grazia Calvagno, 2007; Pattni et al., 2015; Wagner et al., 2006). In our study, it was hypothesized that cholesterol-induced particle size might increase.

It is stated that the intended uniform particle distribution in liposome preparation depends on the purpose of usage. The researchers found that the particle size distribution was homogeneous in liposome preparation made by the extrusion process (Beltrán-Gracia et al., 2019; Pattni et al., 2015). It was found that the liposome samples obtained did not have a homogeneous particle distribution. In another study that generated liposomal ceftiofur, an encapsulation efficiency was found 57.2%. They reported that the mean particle size was 102±7.95 nm and the zeta potential and polydispersity indices were not measured. The researchers adopted egg yolk lecithin as a lipid and only trichloromethane as a solvent (Liu et al., 2011). In another study where liposomal ceftiofur was produced, the encapsulation efficiency was 39.5% ±1.1%. They reported that no measurement of particle size, zeta potential and polydispersity index was performed (Vilos et al., 2014).

In a review published by Lasic (1998); it was stated that although it was assumed that the encapsulation efficiency in liposomes should be above 70%, this value could not usually be reached experimentally. The encapsulation efficiency, which is around 50%, has been accepted as a high result and it has been found that the efficiencies in the studies is generally around 20-35% (Lasic, 1998). The results of our study showed that it was higher than stated here.

In a study that produced liposomal gentamicin; particle size 408±28-418±21 nm, polydispersity index 0.59±0.009-0.74±0.007, encapsulation efficiency 26.7±1.3-34.5±1.5 µg/µmol. A zeta potential analysis was not performed (Mugabe et al., 2005). Compared to our study, the polydispersity indices were similar. They found the particle size smaller. It is believed that this is due to the difference in the lipid: cholesterol ratio used and the method of chosen.

CONCLUSION

The studies on liposomes continue to increase in many areas. The research and clinical applications are mainly focused on human medicine. However, disease factor resistance is a major problem in veterinary medicine. Effective treatment of disease is important to animal health. This condition ensures healthy consumption of products derived from food-grade animals. Moreover, it play a role in the successful treatment of infections that may a break out in pet animals as well.

Quality control studies should be performed prior to the use of the prepared liposomal formulations in animals. In this study, the quality control studies were performed for liposomal gentamicin and ceftiofur.

According to the results obtained from the study, gentamicin and ceftiofur were successfully obtained in liposomal formulation. It was concluded that pharmacokinetic/pharmacodynamic studies should be performed in animals to evaluate their efficacy.

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Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Author Contributions

Plan, design: HS, MC, CC, OC, HS, IK; **Material, methods and data collection:** HS, MC, CC, OC, HC, IK; **Data analysis and comments:** HS, MC, CC, OC, HS, IK; **Writing and corrections:** HS, MC, CC, OC, HS, IK.

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Doğum Eylemine Katılmış Olmak Ebelik Öğrencilerinin Doğum Korkusu Düzeylerini Etkiler Mi?

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ÖZ

Amaç: Araştırmada doğum eylemine aktif bir şekilde veya gözlemleyerek katılan ebelik bölümü öğrencileri ile doğum eylemine hiç katılmamış olan ebelik bölümü öğrencilerin doğum korkusu düzeylerinin belirlenmesi amaçlanmıştır. **Gereç ve Yöntem:** Kesitsel tipte yapılan bu araştırmaya; Mart-Mayıs 2019 tarihleri arasında bir devlet üniversitesinde eğitimlerini sürdüren, araştırmaya katılmayı kabul eden 298 ebelik öğrencisi dahil edilmiştir. Veri toplama aracı olarak araştırmacılar tarafından hazırlanan Birey Tanıtım Formu ve genç kadın ve erkeklerin doğum korkusu düzeylerini belirleyen 'Gebelik Öncesi Doğum Korkusu Ölçeği (GÖDKÖ) kullanılmıştır. **Bulgular:** Araştırmaya katılan öğrencilerin yaş ortalaması 20.0±2.27 yıldır. Gebe kaldıklarında %90.3'ü normal vajinal doğumu, %9.7'si ise sezaryen doğumu tercih etmeyi düşünmektedir. Öğrencilerin %69.1'i doğum endişesi duymakta olup, nedenleri arasında ise; doğum ağrısı çekme (%48), bebek travması (%17.4), olumsuz doğum öyküsü (%12.8) ve mahremiyete saygısızlık (%3.7) yer almaktadır. Ebelik öğrencilerinin sadece 86'sı (%28.8) doğuma aktif katılmışken, doğumu gözlemleyenler 167 (%56.1) olup, araştırmaya katılan tüm öğrencilerin yarısından fazlasının doğuma katılımı olmuştur. Katılımcıların GÖDKÖ puan ortalaması 35.03±9.19'tür ve öğrencilerin; sınıfları, doğum hakkındaki bilgi düzeyleri, doğuma aktif katılım ve doğumu gözlemleme durumları arasında GÖDKÖ puanları açısından fark saptanmamıştır. Fakat öğrencilerin doğum tercihi, doğum hakkında endişe duyma durumları ile GÖDKÖ açısından anlamlı bir fark bulunmuştur. **Sonuç:** Ebelik öğrencilerinde doğuma aktif katılım veya gözlem yapmanın doğum korkusuna etkisinin olmadığı belirlenmiştir. Ancak doğum endişesi duyan ve sezaryen tercih eden öğrencilerin doğum korkusu daha fazladır.

Anahtar Kelimeler: Doğum, Doğum Ağrısı, Doğum Korkusu, Gebelik Öncesi, Ebelik Öğrencileri.

Does Participating in Labor Action Affect the Childbirth Fear of Midwifery Students?

ABSTRACT

Objective: In the study, it was aimed to determine the level of fear of childbirth in midwifery students who actively or observantly participated in labor and midwifery students who have never participated in labor. **Materials and Methods:** In this cross-sectional study; a total of 298 midwifery students, attending in a public university between March and May 2019, were included. As the data collection tool, Individual Identification Form prepared by the researchers and the Fear of Childbirth Prior to Pregnancy Scale, which determines the fear of childbirth in young women and men. **Results:** The mean age was 20.40±2.27 years. In case of their pregnancy, 90.3% of them considered normal vaginal delivery and 9.7% of them preferred cesarean delivery. 69.1% of students were worried about birth and the reasons are; birth pain (48%), infant trauma (17.4%), negative birth history (12.8%) and disrespect for privacy (3.7%). While only 86 (28.8%) of midwifery students participated actively in birth, the number of observers was 167 (56.1%); thus, more than half of all students participated in birth. The mean score of CFPP was 35.03±9.19. There was no significant difference between the education grade, the level of knowledge about childbirth, active participation in childbirth and observation of birth in terms of CFPP scores. However, a significant difference was found in terms of students' birth preference, anxiety about birth, and CFPP score. **Conclusion:** It was determined that active participation in or observation of labor in midwifery students had no effect on birth fear. Students who were worried about birth and preferred cesarean section had more fear of birth.

Keywords: Childbirth, Labor Pain, Fear of Childbirth, Pre-Pregnancy, Midwifery Students.

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GİRİŞ

Bir bebeğin doğumu çoğu kadın için hayatı boyunca yaşayabileceği en önemli deneyimlerden biridir. Gebelik süreci ve doğum eylemi anneliğe uyum sağlamada bazı biyolojik, fiziksel, duygusal ve sosyal değişimlerin yaşandığı bir dönemdir. Bu değişimlere uyum sağlamaya çalışan kişi kadın olmasına karşın, gebenin yakın çevresi de bu süreçten etkilenmektedir. Sosyal ve duygusal etkileri nedeni ile doğum yapma ve ebeveyn rolü üstlenme, toplumda ve farklı kültürlerde iki önemli olay olarak kabul edilirken, bunlar aynı zamanda kadın için büyük bir stres kaynağı olarak görülür (Çoşkun, 2012; Deliktaş ve ark., 2015; Beji, 2016).

Yirminci yüzyılda bilimsel bilginin artması ve teknolojik gelişmeler doğrultusunda doğumlar her ne kadar en az komplikasyonla sonuçlansa da doğum eylemi birçok kadın için hala tamamen kontrol altına alınamayan, bilinmezliğin yaygın hissedildiği ve sonucun öngörülemediği süreçtir (Deliktaş ve ark., 2015). Bu sebeple gebelerin çoğunluğu doğumla ilgili bazı endişeler taşımaktadır. Yapılan bir çalışmada endişe yaşayanların yaklaşık %6-10'unun yüksek düzeyde, %20-50'sinin hafif düzeyde doğum korkusu yaşadıkları belirlenmiştir (Rouhe ve ark, 2013). Kabul edilebilir düzeydeki bir doğum korkusu, kadını doğuma hazırlama konusunda motive edici olabilir. Ancak korku gebelikten önce oluşmuş ya da gebelik süreci yaşanırken korkunun şiddeti artırmışsa bu durum "Tokofobi" olarak adlandırılır (Scollato ve Lampasona, 2013). Tokofobinin literatürdeki karşılığı 'patolojik doğum korkusu'dur (Uçar ve Gölbaşı, 2015). Doğum korkusu doğum ile birlikte doğum sonu dönemde azalmakta ve yerini başka korkulara (emzirememe korkusu, sütün yetmeme korkusu vb.) bırakmaktadır (Demirsoy ve Aksu, 2015). Diğer bir taraftan yoğun hissedilen doğum korkusu nedeniyle kadınlar gebe kalmaktan kaçınmakta, doğum esnasında daha fazla müdahaleye maruz kalmaktadır. Ayrıca doğum korkusu kadınları sezaryen ile doğuma yönlendirmektedir (Stoll ve Hall, 2013; Hauck ve ark., 2016; Weeks ve ark, 2020). Størksen ve arkadaşlarının (2013) doğum korkusu ile doğum deneyimleri arasındaki ilişkiyi değerlendirmeyi amaçlayan 1357 gebe ile yaptığı bir çalışmada da doğum korkusu yaşamanın acil sezaryen ile ilişkili olduğu bulunmuştur.

Doğum korkusunun altında birçok neden olabilir. Biyolojik nedenler (doğum ağrısı), psikolojik nedenler (kişilik özellikleri, travmatik olaylar, cinsel istismar), sosyal nedenler (sosyal destek eksikliği, ekonomik nedenler, eğitim durumu) ya da ikincil faktörler (önceki doğum deneyimi, nullipar olma) doğum korkusuna yol açabilir (Uçar ve Gölbaşı, 2015). Önceki çalışmalarda doğum korkusu; demografik özellikler, kişilik özellikleri, parite gibi farklı değişkenlerle tanımlanmıştır. Kadınların hiç gebelik deneyimi yaşamamış olması, genç yaştaki gebelerin çoğunluğunun nullipar olması, doğum ile ilgili bilgilerinin yetersiz ya da yanlış olması gibi nedenlerle daha fazla doğum korkusu yaşadıkları saptanmıştır (Gao ve ark., 2015; Çiçek ve Mete, 2015). Ayrıca doğum korkusunu inceleyen araştırmaların sıklıkla gebelik sürecinde ve doğum sonu dönemde yapıldığı görülmektedir. Ancak doğuma ilişkin tutumlar ilk olarak gebelikten önce kazanılmaktadır. Dolayısıyla gebelik deneyimi yaşamamış genç kadınlarda korkunun ne kadar yaygın olduğunun bilinmesi son derece önemlidir (Rondung ve ark., 2016; Rublein ve Muschalla, 2022). Gebelik sürecinde ve doğumda doğum korkusunu ölçebilmenin yanında gebelik öncesinde de kadınların ve erkeklerin doğum korkusunu değerlendirmek mümkündür. Yapılan bir yurtdışı çalışmasına göre yüksek doğum korkusuna sahip kadınların daha genç ve evli olmama olasılıklarının yüksek olduğu bulunmuştur (Stoll ve Hall, 2013). Gebe olmayanlarda doğum korkusunu inceleyen birkaç araştırma bulunmaktadır. Stoll (2012) gebelik deneyimi yaşamamış üniversite öğrencilerinde yapmış olduğu çalışmasında yaklaşık her yedi öğrenciden birinin doğum korkusu yaşadığını saptamıştır. Öğrencilerin doğum sırasında ve sonrasında fiziksel değişikliklere ilişkin kaygıları ve bilgi eksiklikleri, yüksek düzeyde korku ve güçlü bir sezaryen tercihi ilişkilendirilmiştir. Thomson ve arkadaşlarının (2017) öğrencilerin doğuma ilişkin olumsuz izlenimlerine yönelik araştırmasında yazılı ve görsel medyayı en büyük bilgi kaynağı olarak kullandığını ifade edenlerin doğum korkusu daha yüksek bulunurken, bilgi kaynağını aile üyeleri ve arkadaşlar olarak bildiren öğrencilerin ise daha düşük saptanmıştır. Ülkemizdeki literatürde genç bireylerde gebelik öncesi doğum korkusu düzeylerini araştıran birkaç çalışmaya rastlanılmıştır (Vurgeç ve ark., 2021; Gür ve ark., 2022). Vurgeç ve arkadaşlarının çalışmasına (2021) göre ağrının şiddeti ile ilgili kaygılar, yetersiz baş etme becerisi, öngörülemez riskler, beden imajına yönelik kaygılar ve olumsuz doğum hikayeleri vajinal doğumu tercih edeceklerini ifade eden katılımcılar için doğum korkusunu yordayıcı faktörler olarak bulunmuştur. Katılımcıların sağlık eğitimi almış olmalarına rağmen, gençlerin gebelik öncesi orta derecede doğum korkusu olduğu saptanmıştır. Gür ve arkadaşlarının çalışmasına (2022) göre kadınların büyük çoğunluğu (%81.0) ve erkeklerin %36.3'ü doğumdan korktuğunu ifade etmiştir. Çalışma sonucuna göre her iki cinsiyetin de gebelik öncesi doğum korkusu yaşadığı bulunmuştur.

Diğer taraftan genç kadınların doğumu herhangi bir şekilde gözlemleme durumu ya da doğuma aktif katılma durumları açısından doğum korkusu düzeylerine dikkat çekilmemiştir. Ebelik bölümü öğrencileri eğitimleri boyunca doğumu gözlemlemekte, doğuma aktif katılmaktadır. Ayrıca mezuniyet kriterlerinden biri olan en az "kırk doğum yaptırma" yükümlülüğünü yerine getirmektedir. Doğumu gözlemlemenin veya aktif katılmanın, doğum korkusunu etkilemede bir faktör olabileceği

düşüncesinden yola çıkılarak; bu araştırmada, doğum eylemine aktif bir şekilde veya gözlemleyerek katılan ebelik bölümü öğrencileri ile doğum eylemine hiç katılmamış olan ebelik bölümü öğrencilerinin doğum korkusu düzeylerinin belirlenmesi amaçlanmıştır.

GEREÇ VE YÖNTEM

Araştırmanın evren ve örneklemi

Kesitsel tipte yapılan bu araştırmanın evrenini; bir devlet üniversitesinin ebelik bölümünde öğrenim gören toplam 410 öğrenci oluşturmuştur. Çalışmada örneklem seçimine gidilmemiştir ve araştırmanın uygulandığı tarihlerde (Mart-Mayıs 2019), çalışmaya katılmayı kabul eden 298 öğrenci (katılım oranı %72.6) araştırma kapsamına alınmıştır.

Araştırmanın soruları

Doğum eylemine aktif bir şekilde veya gözlemleyerek katılan ebelik bölümü öğrencileri ile doğum eylemine hiç katılmamış olan ebelik bölümü öğrencilerin doğum korkusu düzeyi değişir mi?

Araştırmanın değişkenleri

Gebelik Öncesi Doğum Korkusu Ölçeği toplam puanı araştırmanın bağımlı değişkeni olup, ebelik öğrencilerinin doğum eylemine katılım durumları, doğum hakkında bilgi düzeyleri, doğum tercihleri, doğuma ilişkin duygu durumları ve sosyodemografik özellikleri araştırmanın bağımsız değişkenleridir.

Araştırmanın veri toplama araçları

Araştırmanın verileri; ebelik öğrencilerin sosyo-demografik özelliklerini ve doğumla ilgili korkularını içeren Birey Tanıtım Formu, gebelik öncesi doğum korkularını değerlendirmek amacıyla geliştirilen "Gebelik Öncesi Doğum Korkusu Ölçeği (GÖDKÖ)" kullanılarak araştırmacılar tarafından toplanmıştır. Ebelik öğrencilerine araştırmanın amacı, yararları ve nasıl yürütüleceği hakkında bilgi verilerek gizlilik ilkesine uyulacağı anlatılmış ve öğrencilerden sözlü onay alınmıştır. Ayrıca öğrencilerden çalışmaya katılmayı kabul edip etmeme kararını birey tanıtım formunda yer alan ilgili kutucuğu işaretleyerek belirtmesi istenmiştir.

Birey Tanıtım Formu: Araştırmacılar tarafından literatür doğrultusunda hazırlanmış olan form, öğrencilerin sosyo-demografik özellikleri, doğuma ilişkin algıladıkları bilgi düzeyleri, doğuma katılma durumları, çocuk sahibi olmayı isteme durumları, doğum hakkında endişe duyma, duyulan /tanık olunan olumsuz bir doğum vakasının varlığı, kendisini doğum salonunda nasıl hissettiği gibi durumları belirlemeye yönelik toplam 18 sorudan oluşmaktadır (Stoll, 2013; Uçar, 2015; Uçar, 2018).

Gebelik Öncesi Doğum Korkusu Ölçeği (GÖDKÖ): Stoll ve arkadaşları (2016) tarafından geliştirilen, Uçar ve Taşhan (2018) tarafından Türkçe'ye uyarlanan ölçek, genç kadın ve erkeklerin doğum korkusuna en çok neden olan boyutları (doğum ağrısı, kontrol kaybı, doğum ağrısı ve doğumla baş edememe, komplikasyonlar ve geri dönüşümü olmayan fiziksel hasarlar) içermektedir. Ölçek 10 maddeden oluşmaktadır ve ölçekteki yanıtlar 1'den 6'ya kadar numaralandırılmış olup altılı Likert tiptedir. 1 'kesinlikle katılmıyorum', 2 'katılmıyorum', 3 'kısmen katılmıyorum', 4 'kısmen katılıyorum', 5 'katılıyorum', 6 'kesinlikle katılıyorum' şeklinde ifade edilmektedir. Ölçeğin minimum puanı 10 iken, maksimum puanı 60'dır. Madde toplam puanın yüksek olması yüksek düzeyde doğum korkusunu göstermektedir. Ölçeğin Cronbach's alfa değeri 0.86'dır (Uçar, 2018). Bu çalışmada da benzer bulunmuştur (0.82).

Verilerin değerlendirilmesi

Araştırma sonucunda elde edilen veriler, SPSS 16.0 istatistik paket programı kullanılarak değerlendirilmiştir. Kolmogorov-Smirnov testi dağılımı değerlendirmek için kullanılmış ve değerlendirmelerinin normal dağılım gösterdiği bulunmuştur. Katılımcıların kişisel bilgileri ve gebelik öncesi doğum korkusu düzeylerinin değerlendirilmesinde sayı-yüzde dağılımı, bağımlı değişken (ölçek puanı) ile bağımsız değişkenler arasındaki karşılaştırmanın yapılmasında; independent sample t testi / bağımsız gruplarda t testi (sosyodemografik değişkenler, kendi doğum tercihleri ve doğuma ilişkin duygu durumları), üç ve üstü verilerin analizinde (sınıflar, doğuma ilişkin algıladıkları bilgi düzeyleri ve doğum eylemine katılım durumları) One-way Anova / Tek Yönlü Varyans Analizi kullanılmıştır. İstatistiksel önemlilik düzeyi $p<0.05$ kabul edilmiştir.

Araştırmanın etik yönü

Veriler, araştırmanın yürütüldüğü üniversitenin Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu (Tarih:20.02.2019, Karar no:19-2.1T/40) ve kurum izni alındıktan sonra toplanmıştır. Araştırmada kullanılan Gebelik Öncesi Doğum Korkusu Ölçeği için ölçek yazarından yazılı izin alınmıştır. Katılımcılardan ise sözel onamları alınmıştır.

BULGULAR

Araştırma kapsamına alınan ebelik öğrencilerinin yaşları 18-37 arasında değişmekte olup, ortalama 20.40±2.27 yıldır. Bu öğrencilerden 102 kişi 1.sınıfta, 77 kişi 2.sınıfta, 58 kişi 3.sınıfta ve 61 kişi 4.sınıfta öğrenim görmektedir. Öğrencilerin %61.7'si yurtta kalıyor olup, %98.0'ı bekardır. Çalışmaya katılanlarda %89.3 oran ile kronik hastalık yoktur. Çoğu ebelik öğrencisi (%79.2) çocuk sahibi olmayı istemekte ve gebe kaldıklarında; %90.3'ü normal vajinal doğumu %9.7'si ise sezaryen doğumu tercih etmeyi düşünmektedir. Normal vajinal doğumu seçen öğrencilerin; %40.1'i normal vajinal doğumu sağlıklı bulduğu, %25.7'si ise doğal olduğu için tercih ettiğini ifade etmiştir. Sezaryen tercih edenlerin ise; yaklaşık yarısı (%44.8), normal doğum korkusu nedeniyle, %20.7'si ise ağrı korkusu nedeniyle tercih ettiklerini belirtmiştir (Tablo 1).

Tablo 1. Ebelik öğrencilerinin kendi doğum tercihlerinin dağılımı.

Özellikler	Sayı	Yüzde
Çocuk isteme durumu		
Evet	236	79.2
Hayır	62	20.8
Toplam	298	100.0
İstenilen doğum şekli		
Vajinal doğum	269	90.3
Sezaryen	29	9.7
Toplam	298	100.0
Vajinal doğum şeklinin nedenleri (n=269)*		
Sağlıklı	108	40.1
Doğal	69	25.7
Diğer	49	18.2
Ameliyat korkusu	4	1.5
Cevap vermeyen	39	14.5
Toplam	269	100.0
Sezaryen doğum şeklinin nedenleri (n=29)**		
Vajinal doğum korkusu	13	44.8
Ağrı korkusu	6	20.7
Diğer	5	17.2
Cevap vermeyen	5	17.2
Toplam	29	100.0

*Sadece vajinal doğumu seçenler dahil edilmiştir.**Sadece sezaryeni seçenler dahil edilmiştir.

Araştırma kapsamına alınan ebelik öğrencileri korkuyu en çok zarar görme hissi (%43.3), bilinmezlik (%30.2) ve kaygı-üzüntü (%25.5) olarak tanımlamışlardır. Doğum endişesi duyan 206 öğrenci (%69.1) ise, endişe duyma nedenlerini; doğum ağrısı çekme, bebek travması, olumsuz doğum öyküsü ve mahremiyete saygısızlık olarak ifade etmiştir (Tablo 2).

Ebelik öğrencilerinin dönem içi klinik uygulamalarda ve yaz stajında doğum salonundaki duygu durumlarına bakıldığında; öğrencilerin dönem içi klinik uygulamalarda kendilerini en fazla stresli (%50.3), yorgun (%39.6), ve korku dolu (%16.1) hissettikleri saptanmıştır. Yaz stajında ise öğrenciler kendilerini en fazla oranla özgüvenli, rahat ve güvenli hissettiklerini ifade etmişlerdir (Tablo 2).

Ebelik öğrencilerinin %30.9'u doğum hakkındaki bilgi düzeyinin yeterli olduğunu belirtmiş, %51.7'si ise doğum bilgi düzeylerini kısmen olarak ifade etmiştir.

Ebelik öğrencilerinin sadece 86'sı (%28.8) doğuma aktif katılmışken, doğumu gözlemleyenlerin sayısı 167 (%56.1) olup, araştırmaya katılan tüm öğrencilerin yarısından fazlasının doğuma katılımı olmuştur. Doğumlara aktif katılım en çok %56 ile Ege bölgesi, %11 ile Marmara bölgesi ve %10 ile Akdeniz bölgesinde gerçekleşmişken; müdahale etmeden gözlem yapmak suretiyle doğuma katılan 167 öğrencinin içerisinden en çok %88.6'sı Ege bölgesinde ve %4.2'si ile Marmara ve İç Anadolu bölgelerinde doğumu gözlemlemiştir (Tablo 3).

Araştırmadaki tüm ebelik öğrencilerinin GÖDKÖ puan ortalaması 35.03±9.19 olarak bulunmuştur. Ebelik öğrencilerinin sınıfları, doğum hakkındaki bilgi düzeyleri, doğuma aktif katılım ve doğumu gözlemleme durumları arasında GÖDKÖ puanları açısından istatiksel olarak bir fark saptanmamıştır ($p>0.05$, Tablo 4).

Tablo 2. Ebelik öğrencilerinin doğuma ilişkin duygu durumlarının dağılımı (n=285).

Özellikler	**Sayı**	**Yüzde**
Korkuyu tanımlama şekli		
Zarar görme hissi	129	43.3
Bilinmezlik	90	30.2
Kaygı- üzüntü	61	20.5
Diğer*	18	6.0
Toplam	298	100.0
Doğum endişesi duyma durumu		
Evet	206	69.1
Hayır	92	30.9
Toplam	298	100.0
Doğum endişesi duyma nedenleri(n=206)***		
Doğum ağrısı çekme	155	52.0
Bebek travması	52	17.4
Olumsuz doğum öyküsü	38	12.8
Mahremiyet korkusu	11	3.7
Diğer	22	7.4
Olumsuz doğum olayı ile karşılaşma		
Evet	202	67.8
Hayır	96	32.2
Toplam	298	100.0

Ebelik öğrencilerinin doğum salonundaki duygu durumları** (n=204)**				
Duygu Durumları*****	**Dönem içi klinik uygulama**		**Yaz stajı**	
	Sayı	**Yüzde**	**Sayı**	**Yüzde**
Stresli	150	50.3	42	14.1
Yorgun	118	39.6	50	19.8
Özgüvenli	62	20.8	101	33.9
Güvenli	51	17.1	75	25.2
Korku dolu	48	16.1	12	4.0
Rahat	46	15.4	95	31.9
Nötr	42	14.1	21	7.0

* Korkuyu tanımlama şekline cevap vermeyen 10 kişi diğer bölümüne eklenmiştir.
** Birden fazla cevap verilmiştir.
*** Sadece doğum endişesi duyan öğrenciler dahil edilmiştir.
****Sadece doğum salonunda bulunan öğrenciler dahil edilmiştir.
*****Birden fazla cevap verilmiştir.

Tablo 3. Ebelik öğrencilerinin doğuma ilişkin algıladıkları bilgi düzeyleri ve doğum eylemine katılım durumları (n=285).

Özellikler	**Sayı**	**Yüzde**
Doğuma ilişkin algılanan bilgi düzeyi		
Yeterli	92	30.9
Kısmen	154	51.7
Yeterli değil	52	17.4
Toplam	298	100.0
Doğuma aktif katılım durumu		
40 doğum altı	63	21.1
40 doğum ve üzeri	23	7.7
Doğuma katılmayanlar	212	71.1
Toplam	298	100.0

Tablo 3. (devam) Ebelik öğrencilerinin doğuma ilişkin algıladıkları bilgi düzeyleri ve doğum eylemine katılım durumları (n=285).

Özellikler	Sayı	Yüzde
Doğumu gözlemleme durumu		
15 doğum ve altı gözlemleyen	137	46.0
15 üzeri doğum gözlemleyen	30	10.1
Gözlemlemeyen	131	39.6

Ebelik öğrencilerinin doğuma katıldıkları bölgeler				
Bölgeler	**Aktif katılım (doğumu yaptırma) durumu (n=86)**		**Gözlem durumu (n=167)**	
	Sayı	**Yüzde**	**Sayı**	**Yüzde**
Ege	56	65.1	148	88.6
Marmara	11	12.8	7	4.2
Akdeniz	10	11.6	7	4.2
İç Anadolu	4	4.7	4	2.4
Karadeniz	1	1.2	0	0
Doğu Anadolu	1	1.2	1	0.6
Güney doğu Anadolu	3	3.5	0	0
Toplam	298	100.0		

Tablo 4. Ebelik öğrencilerinin ölçek puan ortalamalarının; sınıflara, doğuma ilişkin algıladıkları bilgi düzeylerine ve doğum eylemine katılım durumlarına göre karşılaştırılması (n=285*).

Gruplar	**Gebelik Öncesi Doğum Korkusu Ölçeği**			
	Sayı	**Ortalama±SS**	**F****	**p**
Sınıf				
1.Sınıf	99	35.90±8.27	0.725	0.538
2.Sınıf	74	33.82±9.25		
3.Sınıf	53	35.01±9.37		
4.Sınıf	59	35.03±10.41		
Doğuma ilişkin algılanan bilgi düzeyi				
Yeterli	87	33.77±10.53	1.213	0.299
Kısmen	150	35.50±8.46		
Yeterli değil	48	35.85±8.74		
Doğuma aktif katılım durumu				
40 doğum altı	59	34.05±10.84	0.461	0.631
40 doğum ve üzeri	23	35.78±9.06		
Doğuma katılmayanlar	203	35.23±8.70		
Doğumu gözlemleme durumu				
15 doğum ve altı gözlemleyen	130	35.43±9.25	0.252	0.777
15 üzeri doğum gözlemleyen	29	34.31±9.41		
Gözlemlemeyen	126	34.79±9.13		
Toplam	**285**	**35.03± 9.19**		

*Sadece ölçeğin tüm sorularına cevap verenler dahil edilmiştir.
**F: Tek Yönlü Varyans Analizi kullanılmıştır.

Ebelik öğrencilerinin medeni durumu, çocuk isteme durumu, dönem içi zorunlu staj ortamında yorgun, stresli hissetme durumları ve yaz stajı ortamında özgüvenli ve rahat hissetme durumları arasında gebelik öncesi doğum korkusu ölçeği puanları açısından istatiksel olarak bir fark yoktur. Ancak öğrencilerin doğum tercihi, doğum hakkında endişe duyma ve olumsuz doğum olayı ile karşılaşma durumları ile GÖDKÖ açısından anlamlı bir fark saptanmıştır. Sezaryen doğumu tercih eden veya doğum hakkında endişesi olan öğrencilerin GÖDKÖ puanı, normal doğumu tercih eden ve doğum için endişeye duymayanlara oranla daha yüksektir ($p<0.001$, Tablo 5).

Tablo 5. Ebelik öğrencilerinin ölçek puan ortalamalarının; sosyo-demografik özelliklerine, kendi doğum tercihlerine ve doğuma ilişkin duygu durumlarına göre karşılaştırılması (n=285).

Özellikler	Gebelik Öncesi Doğum Korkusu Ölçeği (n=285*)		
	Ortalama±SS	t**	p
Medeni durum			
Evli	35.01±9.06	-0.406	0.705
Bekar	38.00±16.41		
Çocuk isteme durumu			
Evet	34.97± 9.01	0.546	0.585
Hayır	35.71± 9.70		
Doğum tercihi			
Normal vajinal doğum	34.28±8.86	-4.209	<0.001
Sezaryen	41.65±9.55		
Doğum hakkında endişesi duyma			
Evet	37.94±8.11	-9.279	<0.001
Hayır	28.29±7.95		
Olumsuz doğum olayı ile karşılaşma			
Evet	35.94±9.29	-2.414	0.016
Hayır	33.16±8.74		
Dönem içi zorunlu staj ortamında stresli hissetme durumu			
Evet	35.49±9.58	-0.862	0.390
Hayır	34.55±8.78		
Dönem içi zorunlu staj ortamında yorgun hissetme durumu			
Evet	35.74±9.39	-1.054	0.293
Hayır	34.56±9.06		
Yaz stajı ortamında özgüvenli hissetme durumu			
Evet	33.94±9.73	1.404	0.161
Hayır	35.57±8.89		
Yaz stajı ortamında rahat hissetme durumu			
Evet	33.73±9.65	1.638	0.103
Hayır	35.54±8.93		

Sadece ölçeğin tüm sorularına cevap verenler dahil edilmiştir.
**t: Bağımsız gruplarda t testi kullanılmıştır.

TARTIŞMA

Kadınların gebelik öncesi, gebelik, doğum ve doğum sonuna ilişkin doğru bilgilendirilmesinde, düzenli izlemlerinin yapılmasında ve tüm diğer süreçlerin yönetiminde (doğum, aile planlaması, emzirmenin başlatılması ve sürdürülmesi, yenidoğan bakımının yapılması vb.) yetkin olan ebeler, aynı zamanda kadına ve ailesine danışmanlık yaparak doğum korkusu ile baş etmelerine ve doğum şekline karar vermelerine yardımcı olurlar (Karaçam ve Eroğlu, 2019).

Gebelik deneyimi yaşamamış kadınlar tarafından doğum olayı, mucizevi ve güzel ancak bir o kadar endişe uyandıran ve ağrılı bir durum olarak tanımlanmaktadır. Ebe olma yolunda eğitimlerini sürdüren öğrencilerin çoğunluğu (%90.3), doğum şekli tercihlerini normal vajinal doğum olarak belirtmiştir. British Columbia Üniversitesi'nde öğrenim gören 2676 kız öğrencinin %91.2'sinin vajinal doğumu tercih ettikleri bulunmuştur (Stoll ve ark., 2014). Yapılan ulusal araştırmalar incelendiğinde; ebelik ve diğer sağlık bilimleri bölümlerinde okuyan öğrencilerin vajinal doğum tercih etme oranlarının yüksek olduğu görülmüştür (Doğaner ve ark., 2013; Aksu ve Özsoy, 2015; Aydoğdu ve ark., 2018; Vurgeç ve ark., 2021). Primiparların vajinal doğum tercih oranları ise öğrencilere göre kısmen daha düşüktür. Yapılan bir araştırmada primiparların %67.8'inin vajinal doğumu %32.2'sinin sezaryen doğumu tercih ettiği belirlenmiştir (Büyük, 2017). Bu sonuçlara bakıldığında Türkiye'deki doğum tercihlerinin çoğunluğu vajinal doğum üzerine olmaktayken doğumların yarısı sezaryen ile sonuçlanmıştır (Sağlık İstatistikleri Yıllığı, 2019). Bu veri, son derece dikkat çekicidir. Sezaryen ile doğum genel olarak fetal ve maternal endikasyonlar ile travay veya doğuma ait endikasyonların ve umblikal kord ve plasentaya ait endikasyonların varlığı durumunda tercih edilmekle birlikte, bu endikasyonlar kesin olmayıp olgunun özelliklerine göre doğum şeklinin bireyselleştirildiği, koşullara göre karar verilmesi gereken durumlardır.

Kadınların vajinal doğum ya da sezaryen hakkındaki duygu ve düşünceleri toplumdan topluma değişiklik göstermektedir. Çalışmalarda kadınların vajinal doğumu tercih etme nedenleri incelendiğinde; vajinal doğumun normal bir olay olarak kabul edilmesi, doğum sırasında kontrol duygusunu elinde tutma

isteği, vajinal doğum deneyimi yaşama arzusu, "sağlık için daha uygun" olduğunu düşünme, daha düşük komplikasyon riski, erken iyileşme ve erken taburcu olma durumu, doğum sonu dönemi daha konforlu yaşama ve doğum sonunda bebeğine daha iyi bakım verme isteği (emzirme, güvenli bağlanma vb) gibi nedenler belirtilmektir (Mazzoni ve ark., 2016; Yilmaz ve ark., 2013). Bilgin (2020) tarafından yapılan bir çalışmada hemşirelik öğrencileri sezaryen doğumun bedene zarar verdiğini düşündükleri için vajinal doğumu tercih edeceklerini ifade etmişledir. Yapılan bir başka araştırmada sağlık personelinin çoğunun, doğal olması ve anne bebek için daha sağlıklı olması, doğum sonu dönemin daha iyi geçmesi, sezaryen korkusu gibi nedenlerle bu doğum şeklini benimsedikleri belirlenmiştir (Değirmenciler, 2020). Bizim çalışmamızda da benzer sonuçlar elde edilmiştir. Bu bağlamda doğum eyleminin doğal bir süreç olduğu hakkında farkındalık düzeyi son derece memnuniyet vericidir.

Gebelik ve doğum sürecinin bilinmeyen ve öngörülemeyen bir durum olarak algılanması, doğum korkusunun ortaya çıkmasına neden olmaktadır. Bu korku yalnızca doğum yapacak kişilerin hissettiği bir duygu değil aynı zamanda tüm kadın ve erkeklerin de yaşadığı bir durumdur. Yapılan çalışmalarda; kadın ve erkeklerin, yoğun doğum korkusu yaşadığı belirlenmiştir (Weeks ve ark., 2020; Gür ve ark., 2022) Gebeliği ilk olarak deneyimleyen kadınlarda yapılan bir araştırmada sezaryen doğumu tercih etme nedenleri arasında ilk sırada "doğum ve ağrıdan korkma" yer almaktadır (Temizkan ve Mete, 2020). Araştırmamızda öğrencilerin (%9.7) vajinal doğumun kendisinden korkma ve ağrı duyma korkusu nedeni ile ileride sezaryeni tercih etmek istedikleri belirlenmiştir. Sezaryen doğumu tercih eden öğrencilerin gebelik öncesi doğum korkusu ölçek puanı daha yüksek saptanmıştır.

Kadınların doğum tercihlerinin incelendiği araştırmalarda, doğum eylemine yönelik sezaryen endikasyonlarının dışında, sezaryen doğumun tercih edilmesini etkileyen faktörler arasında doğum ve doğum ağrısından korkma, kıymetli bebek/tedavi ile gebe kalma, tüp ligasyon, anne ve bebek için daha sağlıklı ve daha kolay olduğunu düşünme, vajinal doğumdaki pozisyon ve muayenelerden rahatsız olma, doğumhane şartlarının kötü olması, doğum yapacağı tarihi önceden bilmeyi isteme, önceki doğum deneyimleri, gebelik sürecinde aile ve arkadaş etkisinde kalma ve hekim isteğinin yer aldığı görülmüştür (Karabel ve ark., 2017; Sayın ve ark., 2018). Araştırmamızda ebelik öğrencilerinin yarısından fazlasının doğum endişesi duydukları belirlenmiştir. Öğrenciler, doğum endişesi duyma nedenlerini ise doğum ağrısı çekme, bebekte travma gelişme riski, olumsuz doğum öyküsü dinleme ve mahremiyete ilişkin kaygı duyma olarak sıralamıştır. Yapılan çalışmalarda bebeğin öleceğine veya zarar göreceğine ilişkin düşüncelerin gebelerin doğum öncesi dönemde korku ve kaygı yaşama nedenleri arasında görülmektedir (Sydsjö ve ark, 2013; Dönmez ve ark., 2014). Öztürk araştırmasında (2014) primipar gebelerin doğum sırasında duydukları endişe sebeplerini; doğumda bebeğe bir şey olma endişesi, doğumda personelin anlayışsızlığına yönelik endişe, doğuramama endişesi, bebeği kaybetme endişesi ve doğumda canının acıması endişesi olarak belirtmiştir. Araştırmamızda ebelik öğrencilerin doğum hakkında endişe duyup duymama durumu ile gebelik öncesi doğum korkusu ölçeği puanları açısından anlamlı bir fark bulunmuştur. Endişe duyan öğrencilerin korkusu daha fazladır. Birçok nedenle birlikte doğum endişesi duymak doğum korkusunu arttıran önemli bir etken olarak değerlendirilebilir.

Vajinal doğumun ağrı/acı verici, kanlı, yorucu ve kaygılı bir süreç olduğuna ilişkin toplumdaki yerleşik algı, kadınlara bu korkutucu deneyimi kendilerinin de yaşayacağını düşündürmekte ve bu durum onları sezaryen ile doğuma yönlendirmektedir. Ebelik öğrencilerinin doğum dersi almadan önce, doğum korkusu nedeni ile doğum şekline ilişkin düşüncelerinin toplumdaki kişilerle benzerlik gösterebileceği bildirilmektedir (Kapısız ve ark. 2017). Ayrıca ebelik öğrencilerinin, doğumhane ortamına ilk kez girdiklerinde ve özellikle zor doğum vakası ile karşılaştıklarında korku, stres, panik gibi duygular yaşadığı durumların öğrencilerin ileride doğum tercihlerini etkilediği ifade edilmektedir (Thunes ve Sekse, 2015; Brunstad ve ark., 2016). Araştırmaya katılan öğrencilerin yarısından fazlası (%55.8) normal vajinal doğumu gözlemlemiştir. Doğuma aktif katılma veya gözlem yapma ile gebelik öncesi doğum korkusu ölçeği puan ortalamaları karşılaştırıldığında istatistiksel bir fark saptanmamıştır. Bir başka ifade ile doğuma aktif katılım veya gözlem yapmanın doğum korkusuna etkisinin olmadığı belirlenmiştir. Ebelik ve hemşirelik öğrencileri üzerinde yapılan bir çalışmada da öğrencilerin doğumla ilgili eğitim alma durumları karşılaştırılmış ve doğum korkusu açısından bir fark bulunmadığı için bu durumun eğitimle değil kültürle ilişkili olduğu ifade edilmiştir (Vurgeç ve ark., 2021). Kapısız ve arkadaşlarının (2017) hemşirelik öğrencileri ile yaptığı bir çalışmada benzer sonuçlar elde edilmiş, klinik uygulamada karşılaştıkları doğum ile ilgili olumsuz deneyimlere rağmen öğrenciler doğumun mucizevi olduğunu ve mutlaka yaşanması gerektiğini ifade etmişler ve ileride yüksek oranda vajinal yoldan doğumu tercih edeceklerini belirtmişlerdir. Aynı çalışmada doğum dersini aldıktan sonra öğrencilerin bir kısmının doğum şekli tercihlerinin değiştiği, dersin doğum korkularını tetiklediği bulunmuştur. Aydoğdu ve arkadaşlarının (2018) araştırmasında da doğum dersi almış olmanın doğum şekli tercihini olumlu yönde etkilediği belirlenmiştir.

Yapılan bir çalışmada Ege, Marmara ve Akdeniz bölgesinde doğan primipar kadınların yarısından fazlasının doğum tercihinin sezaryen olduğu ve

doğum ile ilişkili kaygı algıları ile doğum şekli arasında istatistiksel olarak anlamlı ilişki olduğu saptanmıştır (Aslan ve Okumuş, 2017). Çalışmamıza katılan ebelik öğrencilerinin doğuma aktif olarak katıldıkları ve doğumu gözlemledikleri bölgeler en çok Ege, Marmara ve Akdeniz bölgeleridir. Batı bölgesindeki kadınların kültürleri, yaşam şekilleri, çevreden duydukları doğum öyküleri diğer bölgelere göre değişkenlik gösterebilmektedir. Öğrencilerin en çok sağlık hizmeti verdikleri ve sürekli etkileşim halinde bulunduğu bu grubun doğum ile ilişkili kaygı algıları fazla olduğu için bu durumdan etkilenebilecekleri bu nedenle de doğum korkusu yaşayabilecekleri düşünülmektedir.

Araştırmanın Sınırlılıkları

Araştırma, bir üniversitenin bir lisans programı ile sınırlıdır. Veri toplama zamanında; öğrencilerin klinik uygulamada bulunuyor olmaları veya derslerde öğrencilerin devamsız olması, raporlu sayılması vb. nedenlerden dolayı araştırmamız sadece araştırmamıza katılım sağlayan öğrenciler ile sınırı kalmıştır.

SONUÇ

Araştırmadan elde edilen bulgular ve konu ile ilgili yapılan diğer çalışmalar, doğumla ilgili korku ya da endişelerin varlığını göstermektedir ancak doğum eylemine aktif katılma durumunun doğum korkusu üzerinde fark oluşturmadığı bulunmuştur. Ebelik öğrencilerinin büyük çoğunluğu doğum şekli tercihini normal vajinal doğum olarak belirtmiştir. Vajinal doğumun kendisinden korkma ve ağrı duyma korkusu ise sezaryeni tercih etme nedeni olarak öne sürülmüştür. Sezaryen doğumu tercih edenlerin gebelik öncesi doğum korkusu ölçek puanı daha yüksek bulunmuştur. Araştırma sonuçları doğrultusunda; ebelik eğitimi müfredatında farklı eğitim modelleri kullanılarak doğum korkusunun daha fazla irdelenmesi, doğum korkusu ile baş etmede farklı stratejilerin geliştirilmesi, doğumhanede staja çıkan ebelik öğrencilerine doğum ağrısının kişideki eşiğe bağlı olduğunu ve her kişide aynı tepkiler vermeyeceğinin vurgulanması, doğumun medyada korku dolu, ağrılı gösterilmesindense; doğal ve fizyolojik bir süreç olarak topluma sunulması, üniversite çağındaki kadın ve erkekleri hedef alan eğitim stratejileri ile vajinal doğum korkularını hafifletmede ve farklı doğum seçenekleri hakkında kanıta dayalı bilgilerin sunulması, ayrıca üreme çağında ve sağlık alanı dışındaki popülasyonda da doğum korkusunun araştırılması; gençlere vajinal doğum korkusunu azaltmada kanıta dayalı bilgilendirme yapılması önerilebilir.

Çıkar Çatışması

Yazarların herhangi bir çıkar çatışması bulunmamaktadır.

Yazar Katkıları

Plan, tasarım: BB, DK, NÇ, EY, NTO; **Gereç, yöntem ve veri toplama:** BB, DK, NÇ, EY, NTO; **Analiz ve yorum:** BB, DK, NÇ, EY, NTO; **Yazım ve eleştirel değerlendirme:** BB, DK, NÇ, EY, NTO.

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The Ability of Early Warning Scores to Predict Mortality in Covid-19 Pneumonia

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ABSTRACT

Objective: Early recognition of critical patients is crucial in emergency departments. Many scoring systems are used for it. This study aim determining the prognostic values of these scoring systems for Covid-19 patients. **Materials and Methods:** This retrospective study was performed between March 2020 -May 2020. 212 patient who have Covid-19 pneumonia were enrolled. National Early Warning Score (NEWS), Modified Early Warning Score (MEWS) and quick Sequential Organ Failure Assessment (qSOFA) scores were calculated according to patients' admission data. Receiver operating characteristic (ROC) analysis was used to determine the diagnostic values of scores and the optimum cut-off values were determined by Youden Index. **Results:** Twenty-three (10.84%) of 212 patients died and 34 (16%) were admitted to ICU. The AUC values of MEWS, NEWS, and qSOFA for predicting mortality in < 65 years old were 0.852 (95% confidence interval 0.708-0.997), 0.882 (0.741-1.000) and 0.879 (0.768-0.990) and ≥65 years old 0.854(0.720-0.987), 0.931(0.853-1.000), 0.776(0.609-0.944) respectively. For ICU admission AUC values of MEWS, NEWS and qSOFA in <65 years old followed as; 0.882(0.783-0.981), 0.914(0.817-1.000), 0.868(0.764-0.973) and 0.845(0.725-0.965), 0.926(0.854-0.998), 0.815(0.676-0.954) in ≥ 65 years old. MEWS and qSOFA optimal cut-off values for mortality were ≥2 with 90.0% sensitivity 74.7% specificity and ≥1 with 90.9% sensitivity 78.1% specificity for <65 years, NEWS optimal cut-off is ≥6 with 91.7% sensitivity and 76.7% specificity for ≥ 65 years. **Conclusion:** These scores have good predictive value for mortality and ICU admission, but NEWS is better especially in ≥ 65 years old patient with Covid-19 pneumonia.

Keywords: Prediction, Covid-19, Pneumonia, Mortality.

Erken Uyarı Skorlarının Covid-19 Pnömonisinde Ölüm Oranlarını Öngörme Yeteneği

ÖZ

Amaç: Acil servislerde kritik hastaların erken tanınması önemlidir. Bunun için birçok puanlama sistemi kullanılmaktadır. Bu çalışma, bu sistemlerin Covid-19 pnömonisinde prognostik değerlerini incelemiştir. **Gereç ve Yöntem:** Bu retrospektif çalışma Mart 2020- Mayıs 2020 tarihleri arasında yapıldı. Çalışmaya Covid-19 pnömonisi olan 212 hasta dahil edildi. Hastaların National Early Warning Score (NEWS), Modifiye Early Warning Score (MEWS) ve quick sequential organ failure assesment (qSOFA) puanları hesaplandı. Tanısal değerlerinin belirlenmesinde ROC analizi kullanıldı. Optimum eşik değerleri Youden İndeksi ile belirlendi. **Bulgular:** Toplam 212 hastanın 23'ü (%10.84) öldü, 34'ü (%16) yoğun bakıma alındı. MEWS, NEWS ve qSOFA'nın 65 yaş altı ölüm oranını öngörmeye yönelik eğri altında kalan alanları sırasıyla 0.852 (%95 güven aralığı 0.708-0.997), 0.882 (0.741-1.000) ve 0.879 (0.768-0.990) ve 65 yaş üstü hastalarda ise sırasıyla 0.854 (güven aralığı 0.720-0.987), 0.931(0.853-1.000), 0.776(0.609-0.944) idi. MEWS, NEWS ve qSOFA'nın yoğun bakım yatışını öngörme değerleri 65 yaş altı için sırasıyla 0.882(0.783-0.981), 0.914(0.817-1.000), 0.868(0.764-0.973) iken 65 yaş üstü hastalar için 0.845(0.725-0.965), 0.926(0.854-0.998), 0.815(0.676-0.954) idi. Ölüm oranı için optimal eşik değerleri 65 yaş altında; MEWS ≥2 (%90 duyarlılık, %74.7 özgüllük), qSOFA ≥1 (%90.9 duyarlılık, %78.1 özgüllük) iken 65 yaş üstü hastalarda NEWS ≥6 (%91.7 duyarlılık, %76.7 özgüllük) bulundu. **Sonuç:** Bu skorlar ölüm ve yoğun bakım yatış oranını öngörmede değerli bulunmuştur, ancak NEWS skorunun özellikle 65 yaş üstü Covid-19 pnömonisi olan hastalarda daha iyi bir gösterge olduğu görülmüştür.

Anahtar Kelimeler: Tahmin, Covid-19, Pnömoni, Ölüm Oranı.

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INTRODUCTION

Since the first coronavirus case was detected in Wuhan in December 2019, this new and rapidly spreading infection has become a global health problem (Yang et. al., 2020). Today, the number of cases has reached over 300 million and the number of deaths over 5 million (World Health Organization [WHO], 2022). This novel coronavirus named as COVID 19 that causes mild to moderate respiratory illness (Chen et al., 2020). Symptoms are usually fever, cough, tiredness, sore throat, headache, loss of taste or smell, dyspnea, chest pain. Clinical presentation is compatible with viral pneumonia and older people who have comorbidities are more likely to develop serious conditions (Chen et al., 2020; World Health Organization [WHO], 2021; Yang et al., 2020).

With the increasing the number of cases and deaths, especially critical cases should be early recognized by the health care provider in the emergency department. In this context, it is important to determine critical patients who need close care in these overcrowded settings. Many scoring systems based on patients' vital parameters are used to identify critical patients in emergency department (Liu et al., 2020; Yap et al., 2019). One of the most common scoring system is National Early Warning Score (NEWS) and it is based on patients respiratory rate (RR), SpO2 %, oxygen need, temperature (°C), systolic blood pressure (SBP) mmHg, hearth rate (HR) and level of consciousness using AVPU system (A=Alert, V=responds to voice, P=responds to pain, U=unresponsive) (Smith et al., 2013). To date, the NEWS score has been used for infectious and non-infectious conditions to determine critically ill patients, mortality and intensive care admissions (Brabrand & Henriksen, 2018; Liu et al., 2020; Yap et al., 2019). Another scoring system is Modified Early Warning System (MEWS). This scoring system has five parameters that include SBP, HR, RR, temperature and AVPU score and has been found to be useful for pneumonia (Jo et al., 2016; Scubbe et al., 2001). Quick Sequential Organ Failure Assessment (qSOFA) is another illness severity assessment score that especially used in sepsis (Evans et al., 2021). This score has three criteria, SBP (<100 mmHg), tachypnea (>22 /min) and Glasgow Coma Scale (GKS <15). In many studies qSOFA is used and compared with other scoring systems in patients with pneumonia, one of the leading causes of sepsis, to determine intensive care unit admission and mortality and found eligible to use for infectious conditions (Evans et al., 2021; George et al., 2019; Jiang et al., 2018; Liu et al., 2020; Tokioka et al., 2018; Yap et al., 2019; Zhang et al., 2020).

Although these rapid scoring systems seems to be a good predictor for mortality and intensive care unit (ICU) admission for infectious diseases, it is still unclear for patients with COVID 19 pneumonia. Calculating these scoring systems is quick and easy at the emergency department. We aim to asses and compare these rapid scoring systems' prognostic value (MEWS, NEWS and qSOFA) and to determine the optimal cut-off values for patients with COVID 19 pneumonia.

MATERIALS AND METHODS

Study type

This retrospective and observational study was carried out between 15 March 2020 and 15 May 2020 at emergency department of a tertiary hospital in Istanbul.

Study group

Patients >18 years old and have first diagnosed COVID 19 pneumonia with positive Real Time-Polymerase Chain Reaction (RT-PCR) test at admission and got no prior treatment were included in our study. Exclusion criteria is as follows; <18 years old, pregnancy, negative RT PCR test and missing data.

Procedures

Real Time-PCR test with nasopharyngeal swab was performed in our hospital's microbiology laboratory. Patients with radiological findings of pneumonia were considered as pneumonia (Bernheim et al., 2020). Patients with shock findings requiring vasopressor, need for invasive or non-invasive mechanical ventilation and worsening of consciousness were admitted to the intensive care unit. The all data of the patients were obtained from the hospital database and "www.mdcalc.com" website was used to calculate the NEWS, MEWS and qSOFA scores. The primary outcome is predicting in hospital mortality and ICU admission rate, secondary outcome is comparison of the prognostic values of scores and determinate the optimal cut off values.

Statistical analysis

For the statistical analysis of data, IBM SPSS version 20 (Armonk, NY: IBM Corp.) package program was used. Descriptive statistics of continuous variables were presented as mean ± standard deviation or median (minimum-maximum) value. Numbers and percentages were used for summarizing the categorical variables. Depending on the frequency of the data, Chi-square test or Fisher Exact test was used for analysis of categorical variables. The compliance of continuous variables to normal distribution in the study groups was tested with the Shapiro-Wilk test. Group comparison of normally distributed variables was compared with the independent samples t test, and variables that did not show normal distribution were compared with the Mann Whitney U test. ROC analysis was used to determine the diagnostic values of MEWS, NEWS, and qSOFA scores to indicate ICU admission and mortality rates. Curves and area under the curve (AUC), sensitivity and specificity values were presented. Youden index was used to determine the optimum cut-off values of the scores. A value of $p<0.05$ was considered statistically significant in all analyzes.

Ethical considerations

The study was approved by the local Ethical Committee of Şişli Hamidiye Etfal Training and Research Hospital (approval number and date:2989-22.09.2020).

RESULTS

Total 212 patients who have pneumonia and positive RT-PCR test were enrolled the study. The flow-chart of the study is shown in Figure 1. The mean age was 55.41±15.22 (range: 19-89) and 114 of the patients were male (53.77%), 98 were female (46.22%). The number of patients who died and admitted to ICU were 23 (10.84%) and 34 (16.03%) respectively.

Mortality

The mean age was 64.43±13.17 and higher in the mortality group (p=0.003). While 17 (14.91%) of the male patients died, 6 (6.12%) of the female patients died (p=0.040). Hearth rate mean was 101.0 ± 13.34 in mortality group and 84.23±12.42 was in alive group (p < 0.001). Respiratory rate median was 28.0 (12.0-44.0) in mortality group and 16.0(12.0-48.0) in alive group (p<0.001). All scores were higher in the mortality group (p<0.001), spO2 mean was 91.0% (65.0-98.0) and it was low according to the alive group (p<0.001) (Table 1). While the rate of coronary artery disease in the mortality group was 26.08% (n=6), it was 10.58 % (n=20) in the alive group (p=0.032). Dyspnea rates were 60.86% (n=14) in the mortality group and 19.57% (n=37) in the alive group (p<0.001).

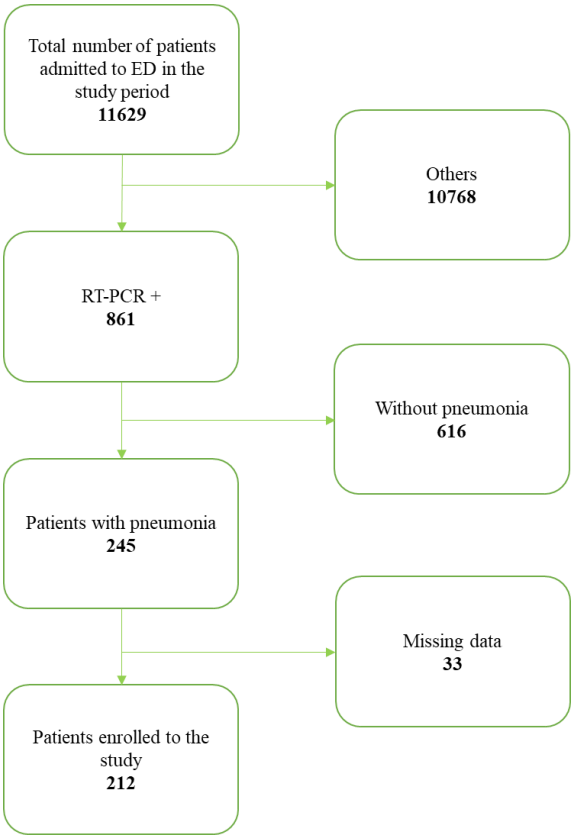

Figure 1. The flow chart of the study. ED: emergency department, RT-PCR: real time polymerase chain reaction.

Table 1. Vital parameters and total scores of alive and mortality groups.

Parameters	Status		p
	Alive	Mortality	
Age	54.32±15.14	64.43±13.17	0.003*
SBP mmHg	120.0(90.0-183.0)	127.0(75.0-165.0)	0.474
DBP mmHg	80.0(53.0-119.0)	75.0(53.0-89.0)	0.063
Temperature °C	36.8(35.8-39.5)	37.0(36.0-38.7)	0.072
SpO_2 %	97.0(82.0-100.0)	91.0(65.0-98.0)	<0.001
Heart rate bpm	84.23±12.40	101.0±13.33	<0.001*
RR bpm	16.0(12.0-48.0)	28.0(12.0-44.0)	<0.001
Stay of hospital (day)	7.0(1.0-60.0)	13.0(2.0-53.0)	0.005
MEWS	1.0(0.0-7.0)	4.0(0.0-7.0)	<0.001
NEWS	1.0(0.0-13.0)	10.0(0.0-16.0)	<0.001
qSOFA	0.0(0.0-2.0)	1.0(0.0-3.0)	<0.001

Results were presented as mean ± standard deviation or median (minimum-maximum). *Independent samples t test was performed, otherwise Mann Whitney U test was used. SBP= Systolic Blood Pressure, DBP= Diastolic Blood Pressure, RR= Respiratory rate, MEWS= Modified Early Warning Score, NEWS= National Early Warning Score, qSOFA= quick sequential organ failure assessment.

Admission to ICU

The mean age was 63.38±12.52 in ICU admission group and 53.89±15.21 was in non-ICU (p=0.001). Diastolic blood pressure mean was 80.0 (60.0-119.0) mmHg in non-ICU group and 71.5 (53.0-90.0) in ICU group (p=0.014). Oxygen saturation mean was 97.0% (88.0-100.0) in non-ICU, 90.5% (65.0-98.0) in ICU group (p <0.001). Body temperature was higher in ICU group [for non-ICU 36.8 °C (35.8-39.5), for ICU 37.1 °C (36.0-38.8)] (p <0.001). Hearth rate and respiratory rate were higher in the ICU group, [96.0 (68.0-125.0), 28.0 (12.0-48.0) respectively] (p <0.001). While MEWS' median was 3.5 (0.0-7.0) in ICU group, 1.0 (0.0-5.0) was in non-ICU patients (p <0.001). The NEWS' median was 10.0 (0.0-16.0) for ICU admission group and 1.0 (0.0-10.0) for non-ICU

group (p<0.001). And there was also statistical difference for median qSOFA scores between ICU and non-ICU group [1.0 (0.0-3.0) for ICU, 0.0 (0.0-2.0) for non-ICU] (p <0.001) (Table 2). Considering other factors that affecting the mortality of patients in ICU group and non-ICU, the rate of coronary artery disease was 23.52% (n=8) in the ICU group, and 10.11% (n=18) in the non-ICU group (p<0.029). Dyspnea rates were 52.94% (n=18) in the ICU group, 18.53% (n=33) in the non-ICU group, respectively (p<0.001).

Table 2. Vital parameters and total scores for non-ICU and ICU.

Parameters	Status		p
	Non-ICU	ICU	
Age	53.89±15.21	63.38±12.52	0.001*
SBP mmHg	120.0(90.0-180.0)	132.0(75.0-183.0)	0.106
DBP mmHg	80.0(60.0-119.0)	71.50(53.0-90.0)	0.014
Temperature °C	36.80(35.80-39.50)	37.10(36.0-38.80)	0.005
sPO_2 %	97.0(88.0-100.0)	90.50(65.0-98.0)	<0.001
Heart rate bpm	84.0(50.0-124.0)	96.0(68.0-125.0)	<0.001*
RR bpm	16.0(12.0-30.0)	28.0(12.0-48.0)	<0.001
MEWS	1.0(0.0-5.0)	3.50(0.0-7.0)	<0.001
NEWS	1.0(0.0-10.0)	10.0(0.0-16.0)	<0.001
qSOFA	0.0(0.0-2.0)	1.0(0.0-3.0)	<0.001

Results were presented as mean ± standard deviation or median (minimum-maximum). *Independent samples t test was performed, otherwise Mann Whitney U test was used. SBP= Systolic Blood Pressure, DBP= Diastolic Blood Pressure, RR= Respiratory rate, MEWS= Modified Early Warning Score, NEWS= National Early Warning Score, qSOFA= quick sequential organ failure assessment, ICU= Intensive Care Unit.

Diagnostic accuracy

The overall analysis of MEWS, NEWS and qSOFA scores according to ICU admission, mortality, <65 and ≥ 65 years old have been shown in Table 3. The diagnostic accuracy of NEWS, MEWS and qSOFA was calculated and optimal cut-off value determined by using Youden Index. The ROC analysis of scores shown in Figure 2. For <65 years old patient MEWS ≥ 2 showed the best accuracy to predict mortality and AUC 0.852 (95% CI=0.708-0.997), sensitivity 90.9%, specificity 74.7% respectively.

Table 3. The overall analysis of MEWS, NEWS and qSOFA scores.

		Age	AUC(95% CI)
Mortality	**MEWS**	<65	0.852(0.708-0.997)
		≥65	0.854(0.720-0.987)
	NEWS	<65	**0.882(0.741-1.000)**
		≥65	**0.931(0.853-1.000)**
	qSOFA	<65	0.879(0.768-0.990)
		≥65	0.776(0.609-0.944)
ICU admission	**MEWS**	<65	0.882(0.783-0.981)
		≥65	0.845(0.725-0.965)
	NEWS	<65	**0.914(0.817-1.000)**
		≥65	**0.926(0.854-0.998)**
	qSOFA	<65	0.868(0.764-0.973)
		≥65	0.815(0.676-0.954)

MEWS= Modified Early Warning Score, NEWS= National Early Warning Score, qSOFA= quick sequential organ failure assessment, AUC= Area Under the Curve, CI= Confidence Interval, ICU= Intensive Care Unit

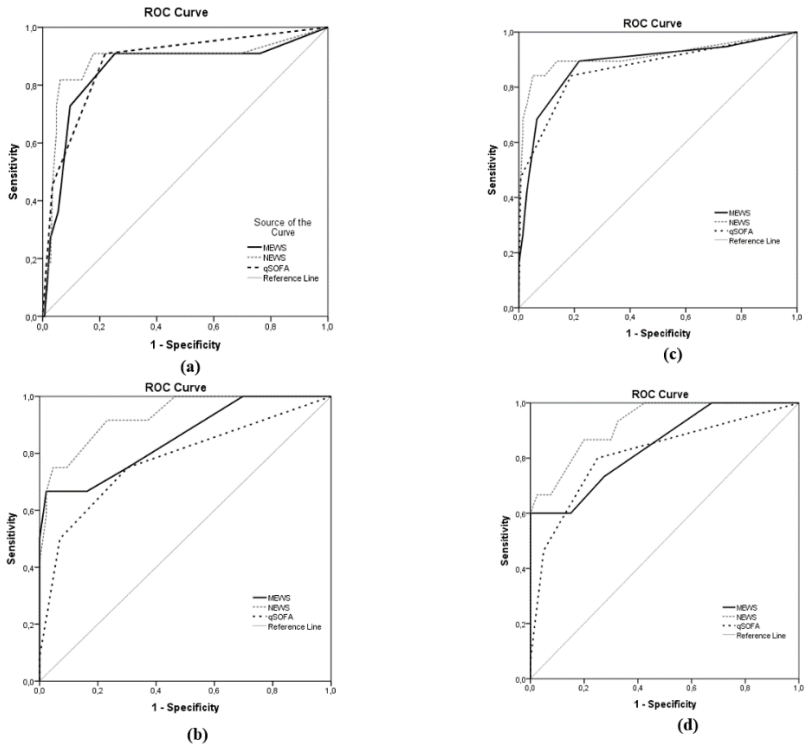

Figure 2. ROC of NEWS, MEWS and qSOFA prediction mortality and ICU admission. (a) ROC of NEWS, MEWS and qSOFA to predict mortality for <65 years old (b) ROC of NEWS, MEWS and qSOFA to predict mortality for >65 years old (c) ROC of NEWS, MEWS and qSOFA to predict ICU admission for <65 years old (d) ROC of NEWS, MEWS and qSOFA to predict ICU admission for >65 years old.

For >65 years old optimal cut-off value for MEWS to predict mortality is ≥4 with AUC 0.854(95% CI= 0.720-0.987), sensitivity 66.7% and specificity 97.7%. NEWS optimal cut-off to predict mortality for <65 years old is ≥7, >65 years old is ≥6 and AUC, sensitivity, specificity follow as; [0.882 (95% CI=0.741-1.0) 81.8%, 93.8%], [0.926 (95% CI=0.854-0.998), 91.7%, 76.7%] respectively.

Table 4. The diagnostic accuracy of the MEWS, NEWS and qSOFA <65 and ≥65 years old patients and optimal cut-off values.

		Age	AUC (95% CI)	Cut-off point*	Sensitivity (%)	Specificity (%)
Mortality	MEWS	<65	0.852(0.708-0.997)	≥2	90.9	74.7
		≥65	0.854(0.720-0.987)	≥4	66.7	97.7
	NEWS	<65	0.882(0.741-1.0)	≥7	81.8	93.8
		≥65	0.926(0.854-0.998)	≥6	91.7	76.7
	qSOFA	<65	0.879(0.768-0.990)	≥1	90.9	78.1
		≥65	0.776(0.609-0.944)	≥1	75	69.8
ICU admission	MEWS	<65	0.882(0.783-0.981)	≥2	89.5	78.3
		≥65	0.845(0.725-0.965)	≥4	60	100
	NEWS	<65	0.914(0.817-1.0)	≥6	84.2	94.9
		≥65	0.926(0.854-1.0)	≥6	86.7	80
	qSOFA	<65	0.868(0.764-0.973)	≥1	84.2	81.2
		≥65	0.815(0.676-0.954)	≥1	80	75

MEWS= Modified Early Warning Score, NEWS= National Early Warning Score, qSOFA= quick sequential organ failure assessment AUC= Area Under the Curve, CI= Confidence Interval, ICU= Intensive Care Unit.

For qSOFA both <65 and ≥65 years old cut-off point determined as ≥1 and < 65 years old AUC, sensitivity, specificity 0.879 (95% CI=0.768-0.990), 90.9%, 78.1% and ≥ 65 years old 0.776 (95% CI=0.609-0.944), 75.0%, 69.8% respectively. Considering the power of scores to determine the ICU admission for <65 years old patient, optimal cut-off values, sensitivity, specificity follow as; MEWS ≥2 [AUC 0.882 (95% CI=0.783-0.981), 89.5%, 78.3%], NEWS ≥6 [AUC 0.914 (95% CI=0.817-1.0), 84.2%, 94.6%], qSOFA ≥1 [AUC 0.868 (95% CI=0.764-0.973), 84.2%, 81.2%] respectively. For ≥ 65 years old patient the optimal cut-off values, AUC, sensitivity, specificity to admission ICU follow as; MEWS ≥4 [AUC 0.845 (95% CI=0.725-0.965), 60.0%, 100.0%], NEWS ≥6 [0.926 (95% CI=0.854-1.0), 86.7%, 80%], qSOFA ≥1 [AUC 0.815 (95% CI= 0.676-0.954), 80.0%, 75.0%]. The accuracy of the NEWS ≥6 is better to determine ICU admission for >65 years old patient. All optimal cut-off values, AUC, sensitivity, specificity shown in Table 4.

DISCUSSION

The Covid-19 pandemic continues to be a health problem worldwide and many risk factors related to this disease are reported. Especially coronary artery disease, older age, diabetes, chronic respiratory disease, hypertension are the most common risk factors for mortality in Covid-19 patients (Bernheim et al., 2020; Chatterjee et al., 2020; Covino et al., 2020; Yang et al., 2020;). In our study, coronary artery disease, older age were significant risk factors for mortality and ICU admission. Also, several findings like dyspnea, tachypnea, lower spO2 rates, associated with mortality and ICU admission have been reported in previous studies. Hai Hu and colleagues showed that dyspnea, respiratory rate and lower sPO2 rates were associated with mortality (Jordan et al., 2020). Covino and his colleagues showed also there were higher respiratory rate and lower sPO2 in patient with mortality and ICU admission (Covino et al., 2020). In our study, respiratory rate, low oxygen saturation, increased heart rate and increased body temperature were associated with mortality and intensive care unit admission. While there was no significant difference in SBP and DBP between alive and death group, there was difference in DBP between ICU and non-ICU group. Some previous studies on Covid-19 showed that systolic blood pressure is a risk factor for mortality (Jordan et al., 2020; Yang et al., 2020). However, In the study of Covino et al. there were no statistical difference in SBP or DBP between mortality or ICU admission. In this context, it can be considered that not only SBP also DBP is a parameter that indicates the deterioration of patients at the ED admission.

Considering the overall analysis of the scores; although all three scoring systems predict mortality and ICU admission, the NEWS appears to be more distinctive with a larger AUC area in both < 65 and ≥ 65 years old subgroups. Several studies showed the NEWS accuracy in infectious condition like pneumonia (Brabrand & Henriksen, 2018; Hu, Yao & Qiu, 2020; Liu et al., 2020; Smith et al., 2013; Yap et al., 2019). In Vincent et al.' study conducted with 773477 patients, it was found that the NEWS score is more discriminative than MEWS, qSOFA and SIRS, especially in infectious patients (Liu et al, 2020). In a recently published study by Saberian et al. comparing NEWS, qSOFA and PRESEP scores in Covid-19, the NEWS score was found to be more accurate in predicting both intensive care admission and mortality (Churpek et al., 2017). The NEWS score stands out compared to other scores, especially in lung infections such as Covid-19 pneumonia, because it includes parameters such as oxygen saturation and supplementary oxygen demand. The optimal cut-off points of these scores were determined for patients under 65 years of age and above by using Youden index. Knowing the optimal cut-off points is important in determining which patient will deteriorate in this overcrowding setting. In Covino et all.' study NEWS > 4 has 81.0% sensitivity and 70.9% specificity with AUC 0.829 for mortality in 48 hours and NEWS >5 has 57.7% sensitivity, 61.0% specificity with AUC 0.768 for 7 days mortality, and also they showed that NEWS is better to predict ICU admission according to other scores such as MEWS, NEWS2, qSOFA, TRIAGE, REMS (Chatterjee et al., 2020). Also, Saberian et al. showed that NEWS > 6 has good NPV for mortality and NEWS >2 has the best sensitivity and NPV for ICU admission (Churpek, 2017). However, in our study there are some differences between cut-off points for <65 years and >65 years old subgroups. While the best accuracy to predicting mortality in <65 years old patients is NEWS ≥7, <65 years old is NEWS ≥6. For ICU admission the cut-off values same and was ≥6 for each age group. Cut-off point for mortality is lower in elder group so that the age factor may be considerable additionally the other NEWS' parameters. In another study comparing MEWS and REMS scores in Covid-19 pneumonia showed that MEWS has acceptable AUC (<65 years 0.603 95% CI=0.462-0.732 and >65 years old 0.708 95% CI= 0.562-0.828 respectively) to predict mortality for <65 years old and ≥ 65 years old patient, the optimal cut-off value was same and >1 for each group (Jordan et al., 2020). In our study we found better accuracy for MEWS especially in < 65 years old group and the optimal cut-off value was ≥2 for both mortality and ICU admission with 90.0% and 89.5% sensitivity respectively. In this context MEWS prediction performance is better in younger than 65 years old patient with Covid-19 pneumonia. Quick sequential organ failure assessment (qSOFA) score is used for early identification of patients at high risk of death due to sepsis and qSOFA ≥2 is associated with high mortality rates (Evans et al., 2021). Previous studies showed that pneumonia scoring systems, such

as CURB-65, pneumonia severity index (PSI) are not superior the qSOFA (George et al., 2019; Tokioka et al., 2018; Zhang et al., 2020). However, there are studies showing that the qSOFA score has lower accuracy compared to early warning scores such as NEWS, MEWS (Hu et al., 2020; Holten et al., 2020; Liu et al., 2020; Saberian et al., 2020; Yap et al., 2019). Wang et all reported that qSOFA optimal cut-off value is 1.5 with AUC 0.886 (95% CI=0.804–0.969), 73% sensitivity and 95% specificity (Wang et al., 2020). Especially under 65 years old qSOFA ≥1 has higher specificity but lower sensitivity for each mortality and ICU admission. Although in the sepsis-3 study, it was reported that the mortality rate of patients with a qSOFA ≥2, for patients with Covid-19 pneumonia with a score ≥1 should be care earlier.

There are some limitations of this study. First, this study was performed as single center, retrospective and was conducted with a limited number of cases due to the difficulty in accessing medical records and some cases were excluded because of missing data. Further studies may conduct with large population and multicenter. Second limitation of the study is; only hospitalized patients were enrolled the study and we could only assess in hospital mortality, so there is no information after discharge and re-admission to another hospital or dead. Thirdly, only the parameters at the time of first admission to the emergency department were recorded, repeated measurements were not calculated. Also, we didn't measure radiological involvement, it may be important to combine early warning scores with radiological findings.

CONCLUSION

These early warning scores are easy and useful tools to detect critical patients in emergency department. All these three scores have good predictive value for Covid-19 pneumonia. However, The NEWS score is superior to MEWS and qSOFA scores for patient both under 65 and over 65 years old. Although the ability of these scores are good, with the further studies, performance of the scores can be increased especially combining with age and comorbidities.

Conflict of Interest

The author declares no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: YEA; **Material, methods and data collection:** YEA, HT; **Data analysis and comments:** YEA; **Writing and corrections:** HT.

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Hastanede Çalışan Sağlık Çalışanlarının İş Güvenliği Düzeyi: Eğitim Araştırma Hastanesi Örneği

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ÖZ

Amaç: Bir eğitim araştırma hastanesinde çalışan sağlık çalışanlarının iş güvenliği düzeyini incelemektir. **Gereç ve Yöntem:** Tanımlayıcı türdeki bu araştırmanın evrenini hastanede doktor, hemşire ve ebe olarak görev yapan sağlık çalışanları oluşturmuştur (N=2114). Çalışma 425 sağlık çalışanı ile tamamlanmıştır (n=425). Veriler online olarak toplanmıştır. **Bulgular:** Araştırmaya katılan sağlık çalışanlarının %32.2'si en az bir kez iş kazası geçirmiş, %50.6'sı iş kazasına neden olan en temel faktörün, iş yetiştirmek için acele etmek olduğunu ifade etmiştir. İş Güvenliği Ölçeği toplam puan ortalamasının hemşire, ebe ve hekimlerde sırasıyla 2.56±1.07 (düşük), 2.87±0.98 ve 2.21±1.17 olduğu ve aradaki farkın istatistiksel olarak anlamlı olduğu belirlenmiştir (p=0.012). Ölçek alt boyutları ile yapılan istatistiksel değerlendirmede; "Kazalar ve Zehirlenmeler", "Malzeme, Araç ve Gereç Denet", "Koruyucu Önlemler ve Kurallar", "Fiziksel Ortam Uygunluğu" alt boyut puan ortalamalarının hekimlerde daha düşük olduğu ve aradaki farkın istatistiksel olarak anlamlı olduğu belirlenmiştir (p<0.01). İş Güvenliği Ölçeği toplam puan ortalaması ile çalışanların iş güvenliğine ilişkin uygulamalardan memnuniyet durumları arasında yapılan istatistiksel değerlendirmede, iş güvenliği uygulamalarından memnun olmayan sağlık çalışanları kurumdaki iş güvenliği düzeyini daha düşük değerlendirmişlerdir (p=0.000). **Sonuç:** Çalışmamız sonuçlarına göre ilgili hastanede iş güvenliğinin yeterli düzeyde olmadığı ve çalışanların, iş güvenliğine ilişkin uygulamaların büyük çoğunluğundan memnun olmadığı belirlenmiştir.

Anahtar Kelimeler: İş Güvenliği, Hemşire, Hekim, Ebe, Hastane.

Occupational Safety Level of Health Workers in Hospital: Education Research Hospital Example

ABSTRACT

Objective: The aim of the study is to examine the occupational safety level of health personnel working in an educational research hospital. **Materials and Methods:** The universe of this descriptive type of research was created by health workers working as doctors, nurses, and midwives in the hospital where the study was carried out (N=2114). The study was completed with 425 health workers (n=425). Data were collected online. **Results:** 32.2% of the health workers who participated in the research had at least one work accident, 50.6% stated that the most basic factor causing work accidents is haste to complete a job. The average score of the Occupational Safety Scale was 2.56±1.07, 2.87±0.98 and 2.21±1.17 respectively in nurses, midwives and physicians, and the difference was statistically significant (p=0.012). In statistical evaluation with scale subdivisions, "Accidents and Poisonings", "Material, Tools and Equipment Inspection", "Preventive Measures and Rules", "Physical Environment Suitability" subdivision averages were found to be lower in physicians and the difference was statistically significant (p<0.01). Occupational Safety Scale total score average and the satisfaction of the employees with the practices related to work safety were evaluated and the health workers who were not satisfied with the work safety practices stated that the level of work safety in the institution was lower (p=0.000). **Conclusion:** According to the results of our study, employees; state that the occupational safety in the relevant hospital is not at a sufficient level and they are not satisfied with most of the practices.

Keywords: Occupational Safety, Nurse, Physician, Midwife, Hospital.

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GİRİŞ

İş güvenliği, bir işin yapılması ve yürütülmesi sırasında oluşabilecek tehlikelerden korunmak ve sağlıklı bir çalışma ortamı oluşturmak amacıyla yapılan sistemli ve bilimsel çalışmalardır (İş Sağlığı ve Güvenliği Kanunu, 2012). Çalışma ortamında iş sağlığı ve güvenliği ile ilgili yapılan çalışmalar, çalışan sağlığını korumayı, sürdürmeyi ve geliştirmeyi sağlarken aynı zamanda çalışanın, gününün uzun bir bölümünü geçirdiği çalışma ortamında güvenli bir hizmet vermesini de sağlamaktadır (Yeşiltaş ve Gül, 2021).

Sağlık çalışanları çalıştıkları ortamda biyopsikososyal ve kimyasal pek çok risk ile karşı karşıya kalmaktadır (Bayer ve Günal, 2018). Özellikle hastaneler, İş Sağlığı ve Güvenliği 'ne İlişkin İşyeri Tehlike Sınıfları Tebliği'ne göre "Çok tehlikeli işyeri" sınıfında değerlendirilmekte (İş Sağlığı ve Güvenliğine İlişkin İşyeri Tehlike Sınıfları Tebliği, 2012) ve içinde pek çok riski barındırmaktadır. Bu riskler arasında; kesici-delici alet yaralanmaları, kan/vücut sıvıları ile kontaminasyon ve şiddet ilk sıralarda yer almaktadır (Solmaz ve Solmaz, 2017; Yavuz ve Gür, 2021). Diğer taraftan sağlıksız ortam ve araç-gerecin yetersiz olduğu olumsuz durumlardan kaynaklanan riskler de bulunmaktadır. Örneğin, hastanelerin mimari yapısının uygunsuzluğu, kaygan zemin, ergonomik olmayan çalışma ortamı, aydınlatma yetersizliği, gürültü, ısıtma ve havalandırmanın yetersizliği vb. çalışma ortamı koşulları da sağlık çalışanları açısından risk oluşturabilmektedir (Terzi ve ark. 2019). Bu nedenle Uluslararası Ortak Komisyonu'nun hastaneler için akreditasyon standartlarında (Joint Commission International=JCI) (Joint Commission International, 2017) ve T.C. Sağlık Bakanlığı'nın yayınladığı hizmet kalite standartlarında (T.C. Sağlık Bakanlığı, 2020) hastanelerde hasta güvenliğinin yanı sıra çalışan güvenliğinin sağlanmasına yönelik faaliyetlere ilişkin kriterlere de yer verilmiştir. Dolayısıyla çalışanların iş güvenliğinin sağlanması, yöneticilerin gerekli tüm koruyucu önleyici tedbirleri alması ve çalışanların bunları uygulaması çok önemlidir (Gürer, 2018). Çünkü sağlıklı ve güvenli bir ortamda çalışmanın; çalışanın yaşamdan beklenen süresini uzatmak, işten kaynaklı önlenebilir sağlık sorunlarını saptamak, mevcut hastalıkların yükünü azaltmak, çalışanın verimliliğini artırmak, çalışanın işe devamlılığını sürdürmek ve kayıp iş gününü azaltmak gibi pek çok olumlu çıktısı vardır (Öztürk ve ark. 2012). Bunun yanında, sağlıklı ve güvenli bir ortamda çalışmak sadece çalışan sağlığını korumak ve sürdürmek ile sınırlı olmayıp, aynı zamanda iş kazalarının ve meslek hastalıklarının getireceği maddi-manevi yükün önüne geçmeyi sağlayan, işveren ve devlet açısından da önemli bir ekonomik kalkınma parametresidir (Bayer ve Günal, 2018; Solmaz ve Solmaz, 2017; Yeşiltaş ve Gül, 2021). Çünkü iş ile ilgili güvensiz tüm etkenlerin ülke ekonomisini olumsuz yönde etkilediği, ulusal kalkınmayı engellediği ve ulusal refahı azalttığı bilinmektedir (Sevinç ve ark. 2016).

Hastanelerde sağlık çalışanlarının iş güvenliğini incelemeye yönelik yapılan çalışmaların; iş sağlığı güvenliğinin sağlanıp sağlanmadığının belirlenmesi, problemlerin saptanması, iyileştirilmesi ve konuyla ilgili farkındalık yaratması nedeniyle değerli olduğu düşünülmektedir. Literatür incelendiğinde konuyla ilgili çalışmaların sınırlı olduğu görülmektedir. Bu nedenle bu çalışma, bir eğitim araştırma hastanesinde sağlık çalışanlarının iş güvenliği düzeyini incelemek ve literatüre katkı sağlamak amacıyla yapılmıştır**.**

Araştırma soruları

- Sağlık çalışanlarına göre kurumda iş güvenliği düzeyi nedir?
- Sağlık çalışanlarının iş güvenliğine ilişkin memnuniyet durumları nedir?

GEREÇ VE YÖNTEM

Araştırmanın tipi

Tanımlayıcı türdedir.

Araştırmanın yeri ve zamanı

Araştırma 1 Ekim 2021-31 Aralık 2021 tarihleri arasında Türkiye'de bir ilin Eğitim–Araştırma hastanesinde yürütülmüştür.

Araştırmanın evreni/ örneklemi

Araştırmanın evrenini 1 Ekim 2021-31 Aralık 2021 tarihleri arasında çalışmanın yürütüldüğü hastanede çalışan 741 doktor, 1145 hemşire ve 228 ebe oluşturmuştur (N=2114). Çalışmanın örneklemi ise %95 güç ve %5 anlamlılık düzeyinde evreni bilinen örnekleme yöntemi ile (Erdoğan et al., 2020), 326 sağlık çalışanı olarak hesaplanmıştır. Katılımcıların örnekleme alınma yöntemi 'gelişigüzel örnekleme' olup örneklem seçim ölçütleri anket sorularını cevaplamada gönüllü olması ve çalışmaya katılmayı kabul etmesi olarak belirlenmiştir. Ayrıca çalışmaya katılacak olan çalışanların kurumda en az 1 yıldır çalışıyor olması, kurumdaki iş sağlığı ve güvenliğine ilişkin gözlemlerini yapabilmesi açısından kriter olarak konulmuştur. Bu doğrultuda araştırma 425 sağlık çalışanı ile tamamlanmıştır (n=425).

Veri toplama

Veriler online olarak Google Formlar aracılığı ile toplanmıştır. Hastaneden gerekli idari izinler alındıktan sonra, hastane personel bürosu ile görüşülerek formun online linkinin hastanede çalışan doktor, hemşire ve ebelerin maillerine iletilmesi sağlanmıştır. Mail akışının sağlanamadığı durumlarda, sorumlu hekim ve hemşirelerle görüşülerek WhatsApp aracılığı ile linkin çalışanlara ulaştırılması sağlanmıştır.

Veri toplama araçları

Online veri toplama formu üç bölümden oluşmaktadır. İlk bölümde gönüllü oluru onayı bulunmaktadır. İkinci bölümde "Kişisel Bilgi Formu" bulunmaktadır. Üçüncü bölümde ise "Hastanede Çalışan Sağlık Personeli İçin İş Güvenliği Ölçeği" bulunmaktadır.

Kişisel Bilgi Formu: Araştırmacılar tarafından literatür taranarak oluşturulan formda; yaş, cinsiyet, medeni durum gibi demografik bilgileri içeren sorular ile; meslek, çalışılan bölüm, vardiya usulü çalışma durumu, birimde çalışma süresi, kurumda çalışma süresi, iş kazası geçirme durumu ve iş güvenliği uygulamalarına yönelik memnuniyet durumları gibi mesleki ve iş güvenliğine

yönelik toplam 34 soru bulunmaktadır (Bayer ve Günal, 2018; Bilgin et al., 2019; Yeşiltaş ve Gül, 2021).

Hastanede Çalışan Sağlık Personeli İçin İş Güvenliği Ölçeği: Öztürk ve Babacan (Öztürk ve Babacan, 2012) tarafından geliştirilen 6'lı Likert tipindeki ölçek, toplam 45 maddeden ve yedi alt boyuttan oluşmaktadır. Ölçek maddeleri "Tamamen katılıyorum=6" ile "Kesinlikle katılıyorum=6" ile "Kesinlikle katılmıyorum=1" arasında değerlendirilmektedir. Ölçekten 45-270 arasında puan alınabilmektedir. Ölçekten ve alt boyutlardan alınan puan ölçek madde sayısına bölünerek hesaplanmaktadır ve puan aralığı 1-6 arasındadır. Puanın 1'e yakın olması ilgili kurumda çalışan sağlık personeline yönelik iş güvenliğinin sağlanmadığına; 6'ya yakın olması ise iş güvenliğinin sağlandığına işaret etmektedir. 3.50 puan nötr noktasıdır. Ölçeğin alt boyutları; F1: mesleki hastalıklar ve şikayetler, F2: Sağlık Taraması ve Kayıt Sistemi, F3: Kazalar ve Zehirlenmeler, F4: Yönetsel Destek ve Yaklaşımlar, F5: Malzeme, Araç ve Gereç Denet, F6: Koruyucu Önlemler ve Kurallar, F7: Fiziksel Ortam Uygunluğu' dur (Öztürk ve Babacan, 2012). Ölçeğin toplam Cronbach Alpha değeri 0.96'dır (Ölçek alt boyut Cronbach Alpha değerleri; F1: 0.93, F2: 0.90, F3: 0.90, F4: 0.87, F5: 0.84, F6: 0.85, F7: 0.82). Bu çalışmada da ölçeğin toplam Cronbach Alpha değeri 0.96 olarak bulunmuştur (Ölçeğin bu çalışmadaki alt boyut Cronbach Alpha değerleri; F1: 0.94, F2: 0.92, F3: 0.88, F4: 0.84, F5: 0.82, F6: 0.86, F7: 0.79).

İstatistiksel analiz

Verinin istatistiksel analizi SPSS 23.0 (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.) istatistik paket programında yapılmıştır. Çalışmadaki verilerin sayı, yüzde gibi tanımlayıcı istatistikleri ve frekans dağılımları elde edilmiştir. Verinin normal dağılım gösterip göstermediği Kolmogorov Smirnov testi ile incelenmiştir. Kolmogorov Smirnov testlerinde p>.05 değeri elde edilmişse dağılımın normal olduğu kabul edilmektedir (Erdoğan et al., 2020). Çalışmada, normal dağıldığı belirlenen verilerin analizinde Independent-Samples t-test ve Tek Yönlü Varyans Analizi (One-Way ANOVA) (post hoc: Bonferroni test) kullanılmıştır. Anlamlılık düzeyi α=0.05 olarak belirlenmiştir.

Araştırmanın etik yönü

Çalışmanın yapılabilmesi için araştırmanın yürütüldüğü üniversitenin Sağlık Bilimleri Araştırma ve Yayın Etiği Kurulu'ndan 31 Mart 2021 tarihli ve 2021-03/09 sayılı etik kurul izni ve çalışmanın yapılacağı ilin İl Sağlık Müdürlüğü'nden 29 Eylül 2021 tarihli ve E.1356 sayılı çalışma izni alınmıştır. Araştırmada Helsinki deklarasyonuna uygun hareket edilmiştir. Online veri toplama formunun ilk bölümünde katılımcılara araştırma hakkında bilgi verilmiş, araştırmanın amacı açıklanmış ve onam butonu konulmuştur.

BULGULAR

Araştırmaya katılan sağlık çalışanlarının yaş ortalaması 33.09±8.52, toplam çalışma yılı ortalaması 10.59±9.03, kurumda çalışma yılı ortalaması 6.60±5.96'dır. Sağlık çalışanlarının %77.4'ü hemşire, %77.4'ü kadın, %56.2'si evlidir. Çalışma özelliklerine bakıldığında, %26.8'i serviste çalışmakta, %69.6'sı vardiya usulü çalışmakta, %70.6'sı kurumdaki iş güvenliği komitesinin varlığından haberdar, %80'i iş güvenliğine ilişkin denetim-kontrolün yapıldığını ifade etmiş ve %47.3'ü hasta ve çalışan güvenliğine ilişkin tebliği okumuştur. Sağlık çalışanlarının %32.2'si en az bir kez iş kazası geçirmiş ve %50.6'sı iş kazasına, "iş yetiştirmek için acele etmenin" neden olduğunu ifade etmiştir. Sağlık çalışanlarının demografik ve mesleki özelliklerinin dağılımı Tablo 1'de verilmiştir.

Tablo 1. Sağlık çalışanlarının demografik ve mesleki özelliklerinin dağılımı (n=425).

Değişkenler		
Yaş (X±SS)	33.09±8.52	
Toplam çalışma yılı (X±SS)	10.59±9.03	
Kurumda çalışma yılı (X±SS)	6.60±5.96	
	n	**%**
Meslek		
Hemşire	329	77.4
Ebe	42	9.9
Hekim	54	12.7
Cinsiyet		
Kadın	329	77.4
Erkek	96	22.6
Medeni durum		
Evli	239	56.2
Bekar	186	43.8

Tablo 1 (devam). Sağlık çalışanlarının demografik ve mesleki özelliklerinin dağılımı (n=425).

	n	%
Çalışılan birim		
Servis	114	26.8
Yoğun bakım	134	31.5
Acil	36	8.5
Ameliyathane	46	10.8
Yönetim/İdari	18	4.2
Poliklinik	58	13.6
Doğumhane	19	4.5
Vardiya usulü çalışma durumu		
Evet	296	69.6
Hayır	129	30.4
Kurumdaki iş güvenliği komitesini bilme durumu		
Evet	300	70.6
Hayır	13	3.1
Fikrim yok	112	26.4
Hasta ve çalışan güvenliğine ilişkin tebliği okuma durumu		
Evet	201	47.3
Haberim olmadığı için okumadım	183	43.1
Haberim vardı ama okumadım	41	9.6
Kurumda iş güvenliği denetim-kontrol yapılma durumu		
Evet	340	80.0
Hayır	35	8.2
Fikrim yok	50	11.8
En az bir kez iş kazası geçirme durumu		
Evet	137	32.2
Hayır	288	67.8

X=Ortalama, **SS**=Standart Sapma.

Çalışmamızda İş Güvenliği Ölçeği toplam puan ortalamasının hemşire, ebe ve hekimlerde sırasıyla 2.56±1.07, 2.87±0.98 ve 2.21±1.17 olduğu ve aradaki farkın istatistiksel olarak anlamlı olduğu belirlenmiştir (p=0.012). Hekimler, kurumdaki iş güvenliği düzeyini diğer meslek guruplarına kıyasla daha düşük değerlendirmişlerdir. Ölçek alt boyutları ile yapılan istatistiksel değerlendirmede; F3 (Kazalar ve Zehirlenmeler) (p=0.001), F5 (Malzeme, Araç ve Gereç Denet) (p= 0.002), F6 (Koruyucu Önlemler ve Kurallar) (p=0.008) ve F7 (Fiziksel Ortam Uygunluğu) (p=0.000) alt boyut puan ortalamalarının hekimlerde daha düşük olduğu ve aradaki farkın istatistiksel olarak anlamlı olduğu belirlenmiştir. Sağlık Çalışanlarının İş Güvenliği Ölçeği alt boyut ve toplam puan ortalamalarının karşılaştırılması Tablo 2'de verilmiştir.

Tablo 2. Sağlık çalışanlarının iş güvenliği ölçeği alt boyut ve toplam puan ortalamalarının karşılaştırılması (n=425)

Alt B.	Hemşire (1) (X±SS)	Ebe (2) (X±SS)	Hekim (3) (X±SS)	Toplam (X±SS)	F
F1	1.58±0.84	1.68±0.94	1.56±0.87	1.58±0.85	0.306
F2	3.52±1.76	3.81±1.58	3.01±1.67	3.48±1.74	2.787
F3	2.89±1.64	3.37±1.64	2.44±1.50	2.88±1.63	3.875*
Post hoc* ** (1-2) p= 0.002					
F4	2.02±1.15	2.01±1.07	1.83±1.18	1.99±1.14	0.649
F5	2.89±1.61	3.54±1.45	2.40±1.60	2.89±1.61	6.107*
Post hoc* ** (2-3) p= 0.014					
F6	3.43±1.74	4.02±1.61	2.91±1.75	3.42±1.74	4.885*
Post hoc* ** (1-3) p= 0.038; (2-3) p= 0.023					
F7	3.41±1.74	3.95±1.73	2.43±1.66	3.34±1.77	10.26**
Post hoc* ** (1-3) p= 0.001; (2-3) p= 0.002					
Toplam	2.56±1.07	2.87±0.98	2.21±1.17	2.55±1.09	4.492*
Post hoc* ** (2-3) p= 0.001					

X=Mean, **SS**=Standart Sapma, **F**=OneWay ANOVA,*p <0,05; ****<0.01. *****Çoklu karşılaştırmada Bonferroni testi kullanılmıştır.

Sağlık çalışanlarının iş güvenliğine ilişkin uygulamalardan memnuniyet durumları değerlendirildiğinde, en fazla çalışılan birim/servis/ünitede çalışmaktan (%65.4), çalışma ortamındaki kişiler arası ilişkilerden (%60) memnun oldukları belirlenmiştir. Memnun olmadıkları uygulamaların ise en fazla hemşire sayısının yeterliliği (%88.2) ve iş yükü (%84.9) olduğu belirlenmiştir.

İş Güvenliği Ölçeği toplam puan ortalaması ile çalışanların iş güvenliğine ilişkin uygulamalardan memnuniyet durumları arasında yapılan istatistiksel değerlendirmede, iş güvenliği uygulamalarından memnun olmayan sağlık çalışanları kurumdaki iş güvenliği düzeyini daha düşük değerlendirmişlerdir (p=0.000).

Tablo 3. Sağlık çalışanlarının iş güvenliğine ilişkin uygulamalardan memnuniyet durumları dağılımı (n=425).

İş güvenliğine ilişkin uygulamalar	n(%)	Memnun (X±SS)	n(%)	Memnun değil (X±SS)	t
Çalışma saatleri/ nöbetler	138(32.5)	2.92±1.16	287(67.5)	2.37±1.00	**5.004***
Görev dağılımı	163(38.4)	3.06±1.11	262(61.6)	2.23±0.94	**8.118***
İş yükü	64(15.1)	3.31±1.20	361(84.9)	2.42±1.01	**6.310***
İş hızı	110(25.9)	3.08±1.14	315(74.1)	2.37±1.01	**6.115***
Hemşire sayısı yeterliliği	50(11.8)	3.12±1.16	375(88.2)	2.47±1.05	**3.985***
Hekim sayısı yeterliliği	181(42.6)	2.73±1.09	244(57.4)	2.42±1.06	**2.976***
Hasta sayısı	91(21.4)	3.03±1.09	334(78.6)	2.42±1.05	**4.872***
Çalışma ortamının donanımı ve dizaynı	155(36.5)	3.08±1.12	270(63.5)	2.25±0.94	**8.081***
Çalışma ortamındaki kişiler arası ilişkiler	255(60.0)	2.83±1.09	170(40.0)	2.12±0.93	**6.930***
Kullanılan araç-gereç	186(43.8)	2.99±1.08	239(56.2)	2.21±0.97	**7.782***
Kullanılan temizlik malzemelerin kalitesi	105(24.7)	3.05±1.08	320(75.3)	2.39±1.04	**5.638***
Kullanılan sarf malzemenin kalitesi	157(36.9)	3.01±1.05	268(63.1)	2.28±1.02	**7.092***
Kişisel korucu malzemenin kalitesi	177(41.6)	3.07±1.00	248(58.4)	2.18±0.99	**9.047***
Bu kurumda çalışıyor olmaktan	166(39.1)	3.03±1.12	259(60.9)	2.24±0.94	**7.759***
Çalışılan birim/servis/ünitede çalışmaktan	278(65.4)	2.83±1.07	147(34.6)	2.02±0.91	**7.800***
Sağlık güvenliği önlemleri	237(55.8)	2.99±1.04	188(44.2)	2.00±0.88	**10.376***
Çalışan sağlık ve güvenlik politikaları	196(46.1)	3.08±1.04	229(53.9)	2.09±0.91	**10.452***
Hasta kaldırma/taşıma sistemleri	142(33.4)	3.11±1.06	283(66.6)	2.27±0.99	**8.059***
Çalışan güvenliğine yönelik eğitimler	207(48.7)	3.02±1.03	218(51.3)	2.10±0.94	**9.582***
Güvenlik personeli davranışları	204(48.0)	2.97±1.03	221(52.0)	2.16±1.00	**8.213***
İş kazası/ meslek hastalığı durumunda kurumun sorumluluk alması/desteği	217(51.1)	3.07±0.99	208(48.9)	2.01±0.90	**10.457***

X=Ortalama, **SS**=Standart Sapma, **t**=Independent-Samples t-Test, *p <0.001.

TARTIŞMA

Araştırmamızda sağlık çalışanlarının İş Güvenliği Ölçeği toplam puan ortalaması 2.55±1.09 olarak bulunmuştur (Tablo 2). Ölçekten alınabilecek en düşük puanın "1", en yüksek puanın "6" olduğu düşünüldüğünde çalışanların kurumdaki iş güvenliğini düşük düzeyde değerlendirdiği söylenebilir. Bu ölçeği kullanan diğer araştırmalardaki toplam ölçek puan ortalamaları incelendiğinde; çalışmamızla benzer olarak Yeşiltaş ve arkadaşlarının çalışmasında 2.85±0.84 (Yeşiltaş ve Gül, 2021), Terzi ve arkadaşlarının çalışmasında 2.23±0,72 (Terzi ve ark. 2019), Bilgin ve arkadaşlarının çalışmasında 2.95±0.85 (Bilgin ve ark. 2019), Burunkaya ve arkadaşlarının çalışmasında 2.90±1.20 (Burunkaya ve ark. 2017) olarak rapor edilmiştir. Çalışmamızdan farklı olarak Karaer ve Özmen'in çalışmasında 3.47±0.72 (Karaer ve Özmen, 2016), Öztürk ve arkadaşlarının çalışmasında 4.05±1.01 (Öztürk ve ark. 2012), Gül ve arkadaşlarının çalışmasında ise 3.41±0.57 (Gül ve ark. 2020) olarak bildirilmiştir. Bu farklılıklar, kurumlarda iş güvenliğine ilişkin farklı uygulama ve politikaların izlendiğini düşündürmektedir. İş güvenliğine ilişkin belirli standartlar ve yönergeler olmasına rağmen kurumlarda benzer işlerliğin sağlanamaması altında yatan dinamiklerin araştırılması değerlidir. Çalışmamızda hekimlerin, kurumdaki iş güvenliği düzeyini diğer meslek guruplarına kıyasla daha düşük değerlendirdiği belirlenmiştir (Tablo 2). Ölçek alt boyutları ile yapılan istatistiksel değerlendirmede; Kazalar ve Zehirlenmeler, Malzeme, Araç ve Gereç Denet, Koruyucu Önlemler-Kurallar ve Fiziksel Ortam Uygunluğu alt boyutlarında da hekimler kurumdaki iş güvenliği düzeyini diğer meslek gruplarına kıyasla daha düşük değerlendirmiştir. Yapılan bazı çalışmalarda da hekimlerin kurumlardaki iş

güvenliği düzeyini daha düşük değerlendirdiği rapor edilmiştir (Bilgin ve ark. 2019; Karaer ve Özmen, 2016; Öztürk ve ark. 2012).

Çalışmamızda sağlık çalışanlarının %32.2'sinin iş kazası geçirdiği belirlenmiştir (Tablo 1). Yapılan çalışmalara bakıldığında; Terzi ve arkadaşlarının çalışmasında bu oran %37.6 olarak bildirilirken (Terzi ve ark. 2019), Öztürk ve arkadaşlarının çalışmasında %30-34 arasında (Öztürk ve ark. 2012), Aygün ve Özvurmaz'ın çalışmasında %36.9 (Aygün ve Özvurmaz, 2020), Ata Yüzügüllü ve arkadaşlarının çalışmasında ise %31 olarak bildirilmiştir (Ata Yüzügüllü ve ark. 2018). Çalışma sonucumuz literatür ile benzerlik göstermektedir. Bu sonucun, çalışmaların benzer koşullarda yapılmış olmasından kaynaklandığı düşünülmektedir. Çalışmamızda çalışanların hemen hemen 1/3'ünün iş kazası geçirdiği düşünüldüğünde bu oranın hem çalışan sağlığı hem de maliyet açısından getireceği olumsuz sonuçlar düşündürücüdür. Zira sağlık hizmeti sektöründe hastanelerde iş kazası maliyetlerinin yüksek olduğu ve %52 gibi yüksek bir oranda mali yük getirdiği bilinmektedir (Öztürk ve ark. 2012).

Bu çalışmada sağlık çalışanlarının %70.6'sının kurumdaki İş Sağlığı ve Güvenliği Kurulu'ndan haberdar olduğu ve %47.3'ünün hasta ve çalışan güvenliğine ilişkin tebliği okuduğu belirlenmiştir (Tablo 1). Yapılan bir çalışmada sağlık çalışanlarının tebliği okuma oranı %20 olarak bildirilirken (Terzi ve ark. 2019) başka çalışmalarda bu oran %46 (Akkaya ve Atay, 2018) ve %54 (Öztürk ve ark. 2012) olarak bildirilmiştir. Çalışma sonucumuz literatür ile benzerlik göstermektedir. Bu sonuç, sağlık çalışanlarının yaklaşık yarısının iş sağlığı ve güvenliğine ilişkin hak ve sorumluluklarının bilincinde olduğunu düşündürmektedir. Çalışan güvenliğine ilişkin tebliğ ile sağlık kurum ve kuruluşlarında hasta ve çalışan güvenliği ile ilgili risklerin azaltılması, iş güvenliği kültürünün geliştirilmesi, iş güvenliğine ilişkin uygun yöntem ve tekniklerin belirlenmesi ve yaygınlaştırılması, iş güvenliği anlamında nitelikli çalışanın ve farkındalığın artırılması amaçlanmaktadır (Öztürk ve ark. 2012; T.C. Sağlık Bakanlığı, 2009). Fakat çalışmamızda sağlık çalışanlarının yarısından fazlasının bu tebliği okumadığı belirlenmiştir. Bu sonuç, sağlık çalışanlarının güvenlik kültürü ve iş güvenliğinin önemi konusunda eksiklikleri olduğu ve konuyla ilgili çalışmalar yapılması gerekliliği sonucunu ortaya koymaktadır.

Çalışmamızda sağlık çalışanları tarafından iş kazasına neden olan faktör olarak en fazla "iş yetiştirmek için acele etmek" faktörü bildirilmiştir (%50.6) (Tablo 1). Yapılan bir çalışmada iş kazasına en fazla neden olan faktörler; çalışma saatlerinin uzun olması, çalışanların yeterli sayıda olmaması ve nöbet sayısının fazla olması olarak bildirilmiştir (Dikmen ve ark. 2014). Bir başka çalışmada ise sağlık çalışanlarının çok yoğun çalışması, hasta sirkülasyonunun oldukça hızlı olması nedeniyle aceleci davranılması iş kazasına neden olan öncü nedenler arasında gösterilmiştir (Kurttekin ve Taçgın, 2019). Genel olarak bildirilen iş kazası nedenlerine bakıldığında çalışma koşullarındaki sorun ve aksaklıklar iş kazalarının temel nedeni olarak görünmektedir. Sağlık çalışanlarının haftanın 7 gün 24 saat hizmet verdiği hastane ortamında çalışma koşullarında düzenlemeye gidilmesinin iş kazalarını azaltmada doğrudan olumlu etkisi olacağı düşünülmektedir.

Çalışma sonuçlarımıza göre, çalışanların iş güvenliğine ilişkin uygulamalardan memnuniyet durumları değerlendirildiğinde, en fazla çalışılan birim/servis/ünitede çalışmaktan (%65.4), çalışma ortamındaki kişiler arası ilişkilerden (%60) memnun oldukları belirlenmiştir. Memnun olmadıkları uygulamaların ise en fazla hemşire sayısının yeterliliği (%88.2) ve iş yükü (%84.9) olduğu belirlenmiştir. İş güvenliği uygulamalarından memnun olmayan sağlık çalışanları kurumdaki iş güvenliği düzeyini daha düşük değerlendirmişlerdir (Tablo 3). Yapılan bazı çalışmalarda da çalışmamızla benzer sonuçlar rapor edilmiştir (Burunkaya ve ark. 2017; Karaer ve Özmen, 2016). Yapılan bir çalışmada iş güvenliği ile iş memnuniyeti arasında pozitif yönde anlamlı bir ilişki saptandığı rapor edilmiştir (Bilgin ve ark. 2019). Bir diğer çalışmada sağlık çalışanlarında ki iş memnuniyeti durumunun çalışılan işin fiziki koşulları ile ilişkili olduğu belirtilmiştir (Ünsar ve ark. 2006). Tüm sektörlerde olduğu gibi hastanelerin başarısı da çalışanlarının memnuniyetine bağlı olarak artmaktadır. Özellikle iş güvenliği hizmetlerinin etkin sağlanabilmesi, çalışan güvenliğine ilişkin uygulamalardan memnuniyetin artması ile doğrudan ilişkilidir.

Araştırmanın Sınırlılıkları ve Güçlü Yönleri

Araştırma, tek bir ilde tek bir hastanenin sağlık çalışanları ile gerçekleştirilmiştir. Bu nedenle araştırma bulgularının evrenin tamamına genellenemeyecek olması araştırmanın sınırlılığıdır. Araştırmada iş ile ilgili memnuniyet durumunun iş sağlığı güvenliğini etkilediği net bir şekilde ortaya konmuştur. Bu da araştırmanın güçlü yanıdır.

SONUÇ

Çalışmamız sonuçlarına göre çalışmanın yürütüldüğü hastanede iş güvenliğinin yeterli düzeyde olmadığı ve çalışanların, iş güvenliğine ilişkin uygulamaların büyük çoğunluğundan memnun olmadığı belirlenmiştir. Kurumdaki yetersiz iş güvenliğinin nedenlerinin araştırılması, bunlara ilişkin strateji geliştirilmesi ve izlenmesi önem arz etmektedir. Yapılacak olan düzenlemeler için çalışanların görüş ve önerilerinin alınmasının, çalışanların bu uygulamalardan memnuniyet düzeyini de artıracağı düşünülmektedir.

Teşekkür

Yazarlar, çalışmaya katılan tüm sağlık çalışanlarına teşekkür etmektedir.

Çıkar Çatışması

Yazarlar tarafından herhangi bir potansiyel çıkar çatışması bildirilmemiştir.

Yazar Katkıları

Plan, tasarım: CYK, AÖ**; Gereç, yöntem ve veri toplama:** CYK, AÖ, LÖ**; Analiz ve yorum:** CYK**; Yazım ve eleştirel değerlendirme:** AÖ, CYK**.**

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Background Psychological Effects of War on Healthcare Employees Assigned to Refugee Camps

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ABSTRACT

Objective: This study has been carried out to evaluate the burnout, depression, anxiety and stress levels of healthcare employees temporarily assigned to refugee camps and factors related hereto. **Materials and Methods:** The population of this descriptive-cross-sectional study consisted of healthcare employees assigned to work temporarily in refugee camps in a certain province. A socio-demographic information form, the DAS-21 scale and the Maslach Burnout Inventory were used in this study as data collection tools. **Results:** A percentage of 64.5% of the participants was younger than 31 years old, 50.0% was employed as a paramedic, 31.2% had crossed the border and 54.7% was assigned to camps on a voluntary basis. It was determined that the Emotional Exhaustion, Desensitation and Personal Achievement score average of the participants assigned to National Medical Rescue Teams was statistically significant compared to those assigned to ambulance services. The rate of depression was found to be statistically higher in National Medical Rescue Team employees and those who had gone on cross-border missions ($p<0.05$). **Conclusion:** On the basis of this study, it was concluded that the rate of depression is higher in those who went on a cross-border mission, that emotional exhaustion was higher in those who had been assigned on a voluntary basis and that emotional exhaustion, depersonalization and anxiety levels were higher in women.
Keywords: Burnout, Healthcare Employees, Mental Health, Refugee Camp.

Mülteci Kamplarına Görevlendirilen Sağlık Çalışanlarında Savaşın Arka Plan Psikolojik Etkileri

ÖZ

Amaç: Bu araştırma mülteci kamplarına görevlendirilen sağlık çalışanlarının tükenmişlik, depresyon, anksiyete ve stres düzeyleri gibi ruhsal durumları ve bunlarla ilişkili faktörleri değerlendirmek amacıyla gerçekleştirilmiştir. **Gereç ve Yöntem:** Tanımlayıcı-kesitsel olarak tasarlanan bu araştırmanın evrenini bir ilde mülteci kamplarında geçici olarak görevlendirilen sağlık çalışanları oluşturmuştur. Araştırmaya toplam 234 sağlık çalışanı katılmıştır. Veri toplama aracı olarak "Sosyo-demografik Bilgi Formu", "DAS-21 Ölçeği", "Maslach Tükenmişlik Envanteri" kullanılmıştır. **Bulgular:** Katılımcıların %64.5'i 31 yaşından küçük, %50.0'ı Paramedik, %31.2'si sınır ötesine geçmiş ve %54.7'si gönüllü olarak kamplarda görevlendirilmiştir. Ulusal Medikal Kurtarma Ekibi olarak görevlendirilen katılımcıların Duygusal Tükenme, Duyarsızlaşma ve Kişisel Başarı puan ortalaması ambulans servisi çalışanı olarak görevlendirilenlere göre yüksek ve istatistiksel olarak anlamlı olduğu belirlenmiştir. Ulusal Medikal Kurtarma Ekibi çalışanlarında ve sınır ötesi göreve gidenlerde depresyon oranı istatistiksel olarak daha yüksek bulunmuştur ($p<0,05$). **Sonuç:** Bu araştırma ile sınır ötesi göreve gidenlerde depresyon oranının, gönüllü görevlendirilenlerde duygusal tükenmenin daha fazla olduğu, kadınlarda duygusal tükenme, duyarsızlaşma ve anksiyetenin daha fazla olduğu sonucuna ulaşılmıştır.
Anahtar Kelimeler: Tükenmişlik, Sağlık Çalışanları, Ruh Sağlığı, Mülteci Kampı.

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INTRODUCTION

Healthcare employees who are on the frontline have a profession in which they are exposed to high risks due to the continuing response to various critical and emergency situations (e.g. fires, natural disasters, motor vehicle accidents, medical emergencies, etc.) and providing emergency medical services (Jitnarin et al., 2022; Karter & Molis, 2013). Exposure to the pain of the sick and injured increases the vulnerability of the individual to the development of both physical and psychological problems over time (Jitnarin et al., 2022; Lee et al., 2018). In particular, the exposure of fire, ambulance and rescue workers to trauma due to the nature of their work causes an increase in the risk of accumulation of fatigue and burnout (Jahnke et al., 2016). In addition, other psychological disorders, including depression, anxiety and panic disorders, have also been associated with burnout (Stellman et al., 2008). Healthcare employees working with individuals who have left their countries due to conflicts, war, migration, etc. and whose routine life is disrupted, are under more stress compared with other sections of the society (Saglam & Cinna, 2008). Due to mass migration, conflicts, wars, increasing inequalities, global terrorism and climate change, refugees continue to be one of the increasingly important issues globally and in our country (Karadağ & Altıntaş, 2010; Küçükkendirci & Batı,2020). Currently, there are more than three million Syrian refugees in our country, some of them in temporary shelters and the majority of them living in different cities within the country (UNHRC, 2022). Some of the healthcare services provided to asylum seekers in temporary accommodation centers in Turkey are provided by healthcare employees who work on the basis of a temporary assignation. It is thought that the stress and anxiety levels of healthcare employees who are temporarily assigned, increase due to exposure to helping war victims, crossing the border or being at risk of conflict at their location.

Intense working conditions, a lack of psychological support and exposure to violence by patients and their relatives lead to burnout among healthcare employees, along with depression and anxiety (Çelebi, 2016). Difficulties in the working environment and conditions for healthcare employees employed at temporary shelters, treating trauma patients and the injured and the presence of additional stressors cause high levels of traumatic stress for the individual.

Whilst there are many studies in the literature about the health problems experienced by refugees and asylum seekers and the difficulties in making use of and accessing healthcare services (Karadağ & Altuntaş, 2010; Kördeve, 2017; Stellman et al., 2008), studies on the problems experienced by healthcare employees who provide healthcare services to refugees and asylum seekers, their burnout and depression rates are limited. The limited literature indicates that professionals and volunteers working with the displaced also experience psychological effects such as burnout, secondary traumatic stress and compassion fatigue (Jones and Williamson, 2014; Apostolidou, 2016; Roberts et al., 2021). In addition, these studies belonged to populations such as volunteers, mental health professionals, students. There is a need for a study involving ambulance service workers who are exposed to chronic stress due to their profession. In our country, there are no additional regulations such as risk management policy in order to reduce the work stress levels caused by the difficulties and inadequacies experienced by the health personnel working in the frontlines in the work environment and to protect their mental health. Considering that UMKE and 112 employees work hard in natural disasters and extraordinary situations, in conflict zones, their ability to fight against stress weakens and traumas occur in their psychological and behavioral reactions. At the same time, these front-line health workers do not receive regular psychosocial support training annually or at certain intervals (Ministry of Health, 2023). Considering the increasing number of refugees and asylum seekers in our country; It is thought that the evaluation of frontline personnel in terms of psychological trauma is of increasing importance. This study may contribute to the provision of appropriate psychosocial support that supports the staff working in refugee camps to adapt positively to normal life outside of work. When the relevant literature is examined, it is seen that most of the studies on mental trauma, both in the world and in our country, are carried out on health workers who are directly exposed to traumatic events such as disasters and wars. It is thought that this study will contribute to the literature by addressing the problems created by refugees and asylum seekers in health services, as well as the effects of health workers and related factors.

At the same time, the results of the study will be effective in taking necessary administrative measures by providing information about the social, psychological and functional effects of the difficulties experienced by the front-line personnel, how they cope, the difficulties they report, their support, and their stress levels.

Within the scope of all this information, this study was carried out to evaluate the burnout, depression, anxiety and stress levels of ambulance services employees temporarily assigned to refugee camps and the factors related thereto. The research results can be used to provide awareness on risk factors, opportunities for early diagnosis and early intervention and to improve environmental conditions in order to protect and maintain the mental health of frontline healthcare employees.

MATERIALS AND METHODS

Type of research

This descriptive cross-sectional study was set up to evaluate the burnout, depression, anxiety and stress levels of healthcare employees temporarily working in refugee camps and the factors affecting it.

Place, population and sample of the study

The population of the research consists of healthcare employees related with the Provincial Health Directorate in a province of Turkey. Since assignments to temporary shelters are realized through ambulance services and the National Medical Rescue Team (UMKE), employees working at these units were included in the study. Health workers work in camps located in provinces bordering Syria such as Gaziantep, Kilis, and Şanlıurfa in Turkey. At the province where the study was carried out, 465 healthcare employees were employed at the ambulance services of the Provincial Health Directorate and 149 persons were employed at the UMKE unit. The sample size was not calculated and it was aimed to reach the entire universe. 234 people who agreed to participate in the study and completed the data collection form were included.

Data collection tools of the study

The research data were collected through the Socio-Demographic Information Form, the Depression, Anxiety, Stress Scale *(DAS-21)* and the Maslach Burnout Inventory.

Socio-Demographic Information Form: *This* form, which was prepared by the researcher by scanning the literature (Choi, 2011; Kahil, 2016; Yeşil, 2010), consists of 11 questions meant to evaluate age, gender, educational status, marital status, employment unit, period of employment, assignment, presence of cross-border assignments, smoking and alcohol use.

Depression, Anxiety, Stress Scale (DAS-21): The DAS-21 was created by Lovibond and Lovibond (1995) and forms an abbreviation of DAS-42 (Lovibond and Lovibond, 1995). The psychometric properties of the Turkish version of the DAS-21 scale in normal and clinical samples were made by Saricam (Saricam, 2018). This scale is a 4-point Likert type scale and consists of seven questions measuring the "depression, stress and anxiety dimensions". Five points or more for the sub-dimension of depression, four points or more for anxiety and eight points or more for stress, indicate that the individual has a related problem. The Cronbach's alpha coefficient of the scale is .91 for depression, .84 for anxiety and .90 for stress (Saricam, 2018). This study Cronbach's alpha coefficient of the scale is .86 for depression, .89 for anxiety and .83 for stress.

Maslach Burnout Inventory: The Maslach Burnout Inventory (MBI), which was developed by Maslach and for which the validity and reliability study was conducted by Çam and Ergin for our country, was used. The MBI consists of three sub-dimensions, which are emotional exhaustion (EE), depersonalization (D) and personal achievement (PA), and 22 items (Maslach et al., 2001; Çam, 1991). The scale consists of 9 items on EE, 5 items on depersonalization and 8 items on PA. The items consist of 5-point Likert-type statements (0: never 1: very rarely; 2: sometimes; 3: often and 4: always). By adding these scores, scores ranging from 0-36 for EE, 0-20 for D, and 0-32 for PA are obtained. In the EE and D subgroups, high scores indicate high burnout levels, whereas in the PA subgroup, low scores indicate high burnout levels (Maslach et al., 2001; Çam, 1991). In our country, the reliability coefficients of the Turkish version of the scale by Çam (1991) were found to be 0.89 for EE, 0.71 for D and 0.72 for PA (Çam, 1991). This study were found to be 0.93 for EE, 0.78 for D and 0.83 for PA.

Collection of the research data

Data were collected online via Google Forms from healthcare employees employed at the Provincial Ambulance Service and Provincial UMKE unit on a voluntary basis between August and September 2022. The healthcare employees on duty were reached through social media groups and e-mail. In advance of the study, participants were informed about the research content, research questions and matters to be considered during data collection. The time to answer the questionnaires was approximately 20 minutes and the data were collected after obtaining the permission of the ethics committee and the institution.

Inclusion and exclusion criteria for the research

Healthcare employees employed at the healthcare ambulance services affiliated with the Provincial Directorate for Healthcare and the UMKE, who were assigned to temporary shelters at least once and volunteered for the study, were included in the research. Participants who did not meet these criteria and those who were diagnosed with anxiety or depression by a psychiatrist were excluded.

Dependent and independent variables of the research and research questions

The independent variables of the study are the socio-demographic characteristics of the participants (gender, occupation, educational status, unit of employment, type of assignment, cross-border assignment, etc.). The dependent variable of the study is the scores obtained by the participants according to the DAS-21 scale and the MBI scale.

Within the scope of the study, answers to the following questions were sought.

- What are the depression and anxiety levels of the participants?
- What is the burnout level of the participants?
- What are the factors affecting the depression, anxiety and burnout levels of the participants?

Statistical analysis

The research data were analyzed with the Statistical Package for Social Sciences (SPSS) 25.0 package program. Numbers, percentages and means were used in the evaluation of descriptive data. Before comparing the responses of participants to the DAS-

21 and MBI scales and their sub-dimensions according to the variables age, gender, marital status, and length of employment in order to test the assumption of normality, the kurtosis and skewness values of each variable were found to be between *+1.5* and *-1.5*, indicating that the data conformed to the normal distribution.

The t-test was used in the independent group to compare the mean scores of the MBI and scale sub-dimension scales. The relationship between age, length of employment, MBI sub-dimension scores and DAS-21 sub-dimension mean scores were analyzed through a correlation analysis. We divided the participants into two groups below and above the cut-off point of the DAS-21 scale. Whether depression, anxiety and stress states differ according to independent variables was analyzed with the chi-square test. In addition, age, length of employment, DAS-21 and MBI score averages, standard deviations, minimum and maximum values are given. A reliability level of 95% and significance level of $p<0.05$ in the interpretation of all analysis results was acknowledged.

Ethical considerations

Ethics committee approval was obtained from the Artvin Coruh University Ethics Committee (E-18457941-050.99-60372) prior to the study. This research was conducted in accordance with the principles of the Declaration of Helsinki. In addition, permission was not obtained from the institution, but consent was obtained from the participants.

RESULTS

The socio-demographic characteristics and introductory information of the individuals participating in the research are given in Table 1. A percentage of 64.5% of the participants was younger than 31 years, 65.0% was male, 85.5% was a university graduate, 50.0% was a paramedic, 31.2% had crossed the border and 54.7% was voluntarily assigned to camps. It was determined that 26.1% of the participants worked at UMKE, 45.7% smoked and 16.7% consumed alcohol (Table 1). The mean age of the participants was 30.95±11.13, the mean length of employment was 7.91±8.14, the mean total score for MBI was 37.22±15.75, the mean anxiety score was 5.72±4.02, the mean depression score was 4.63±3.44 and the mean stress score was 5.72±4.02. In addition, the mean score for emotional exhaustion was 15.14±7.15, the mean score for depersonalization was 8.87±4.79 and the mean score for personal achievement was 13.21±5.74 (Table 2).

Table 1. Distribution of the socio-demographical characteristics of the participants.

		Number	%
Age	<31	151	64.5
	31 and >	83	35.5
Sex	Male	152	65.0
	Female	82	35.0
Academic status	Secondary education	34	14.5
	University	200	85.5
Total Length of employment	<8 year	145	62.0
	8 year and >	89	38.0
Marital status	Married	79	33.8
	Unmarried	155	66.2
Title	Paramedic	117	50.0
	EMT	53	22.6
	Other*	64	27.4
Unit	112	173	73.9
	UMKE**	61	26.1
Cross-border	Yes	73	31,2
	No	161	68.8
Assignation	Voluntarily	128	54.7
	Assigned	106	45.3
Smoking	Yes	107	45.7
	No	127	54.3
Alcohol	Yes	39	16.7
	No	195	83.3

*Nurse, Midwife, Doctor, Lab Technician, ** National Medical Rescue Team

Table 3 shows the distribution of the Maslach Burnout Inventory Sub-Dimension mean score according to the socio-demographic characteristics and introductory information of the participants. When the results are examined, the emotional exhaustion sub-dimension scores of participants under the age of 31 (p=0.009), who were female (p=0.001), who had worked 8 years or less (p=0.027), who were married (p=0.017), who were employed at UMKE (p=0.024), who were voluntarily assigned (p=0.044), and who smoked and consumed alcohol (p=0.001) were found to be significantly higher (Table 3).

According to table 4, depression, anxiety and stress levels are higher in participants with a length of employment of less than eight years compared to participants with a length of employment of eight years or more, which is statistically significant. The depression level is higher in participants employed at the UMKE unit compared to those whose are employed in 112 services, which is statistically significant. The depression level is higher in those who go on cross-border missions compared to those who do not, which is statistically significant.

When table 5, which includes the correlation between some variables, is examined, it can be observed that a high level of negative correlation is present between EE, Depersonalization and PA on the one hand and age and length of employment on the other hand. There is a high level of negative correlation between the sub-dimensions of stress and the length of employment and a positive correlation with the number of assignments. It was determined that a high level of positive correlation is present between EE, Depersonalization and PA on the one hand and depression and anxiety on the other hand.

Table 2. Averages of some variables.

	n (%)*	Min	Max	Mean	SS
Age	-	18.00	43.00	30.95	11.13
Length of employment	-	1.00	38.00	7.91	8.14
Maslach Burnout Inventory Total	-	0.00	75.00	37.22	15.76
Emotional Exhaustion	-	0.00	34.00	15.14	7.15
Depersonalization	-	0.00	18.00	8.87	4.79
Personal achievement	-	0.00	24.00	13.21	5.74
Anxiety	123 (52.6)	0.00	14.00	3.78	3.04
Depression	120(51.3)	0.00	15.00	4.63	3.44
Stress	59(25.2)	0.00	18.00	5.72	4.02

* Prevalence by cut-off point.

Table 3. Differential analysis of the maslach burnout inventory sub-dimension mean scores according to some variables.

		Emotional Exhaustion			Depersonalization			Personal achievement		
		Mean-SD	t	p	Mean-SD	t	p	Mean-SD	t	p
Age	Age <31	16.05±6.99			9.61±4.78			10.84±5.96		
	Age 31 and >	13.49±7.17	2.652	**0.009**	7.53±4.53	3.240	**0.001**	14.51±5.19	4.897	**0.001**
Sex	Male	13.54±7.63			7.85±4.84			12.82±6.14		
	Female	18.11±4.97	-4.880	**0.001**	10.77±4.09	-4.639	**0.001**	13.92±4.87	-1.407	0.161
Length of employment	<8 years	15.95±6.51			9.55±4.77			14.55±5.73		
	8 years and >	13.83±7.95	2.220	**0.027**	7.76±4.63	2.812	**0.005**	11.02±6.54	4.772	**0.001**
Marital status	Married	16.71±7.88			8.89±4.51			13.16±5.58		
	Unmarried	14.34±6.63	2.412	**0.017**	8.85±4.83	0.061	0.951	13.23±5.84	-0.085	0.932
Unit	112	14.52±6.34			8.23±4.63			12.57±5.36		
	UMKE	16.91±8.88	-2.272	**0.024**	10.68±4.80	-3.528	**0.001**	15.03±6.41	-2.876	**0.004**
Cross-border	Yes	15.56±7.74			9.63±4.81			13.78±6.64		
	No	14.95±6.88	0.599	0.550	8.52±4.75	1.636	0.103	12.95±5.68	1.025	0.306
Assignation	Voluntarily	16.02±8.04			9.42±5.27			13.61±6.23		
	Through assignment	14.11±5.81	2.022	**0.044**	8.19±4.06	1.969	0.051	12.72±5.06	1.172	0.243
Smoking	Yes	17.67±7.24			10.31±4.38			14.57±5.06		
	No	13.02±6.35	5.236	**0.001**	7.65±4.79	4.402	**0.001**	12.05±6.03	3.426	**0.001**
Alcohol	Yes	18.82±4.34			12.02±2.73			15.28±2.53		
	No	14.41±7.38	3.605	**0.001**	8.24±4.87	4.661	**0.001**	12.79±6.11	2.497	**0.013**

Table 4. Examination of depression, anxiety and stress levels according to some variables.

		Depression			Anxiety			Stress		
		n (%)	Chi-square	p	n (%)	Chi-square	p	n (%)	Chi-square	p
Age	Age <31	82(54.3)			68(58.3)			35(23.2)		
	Age 31 and >	38(48.8)	1.557	0.222	35(42.2)	5.574	**0.020**	24(28.9)	0.935	0.349
Sex	Male	74(48.7)			70(46.1)			39(25.7)		
	Female	46(56.1)	1.172	0.337	53(64.6)	7.376	**0.009**	20(24.4)	0.045	0.876
Academic status	Secondary education	13(38.2)			13(38.2)			7(20.6)		
	University	107(53.5)	2.710	0.137	110(55.0)	3.276	0.094	52(26.0)	0.451	0.670
Length of employment	<8 years	91(62.8)			95(65.5)			50(34.5)		
	8 years and >	29(32.6)	20.098	**0.001**	28(31.5)	25.654	**0.001**	9(10.1)	17.370	**0.001**
Marital status	Married	41(51.9)			31(39.2)			28(35.4)		
	Unmarried	79(51.0)	0.018	0.998	92(59.4)	8.491	**0.004**	31(20.0)	6.618	**0.016**
Title	Paramedic	66(56.4)			72(61.5)			25(21.4)		
	EMT	26(49.1)			23(43.4)			19(35.8)		
	Other*	28(43.8)	2.790	0.248	28(43.8)	7.560	**0.023**	15(23.4)	4.204	0.222
Unit	112	76(43.9)			90(52.0)			40(23.1)		
	UMKE	44(72.1)	14.356	**0.001**	33(54.1)	0.078	0.882	19(31.1)	1.541	0.232
Cross-border	Yes	47(64.4)			41(58.2)			19(26.0)		
	No	73(45.3)	7.290	**0.008**	82(50.9)	0.552	0.483	40(24.8)	0.037	0.872
Assignation	Voluntarily	68(53.1)			74(57.8)			33(25.8)		
	Through assignment	52(49.1)	0.384	0.602	49(46.2)	3.122	0.088	26(25.5)	0.048	0.880
Smoking	Yes	52(48.6)			47(43.9)			34(31.9)		
	No	68(53.5)	0.568	0.512	76(59.8)	5.901	**0.018**	25(19.7)	4.502	**0.036**
Alcohol	Yes	20(51.3)			26(66.7)			14(35.9)		
	No	100(51.3)	0.000	1.000	97(49.7)	3.733	0.056	45(23.1)	2.833	0.107

Table 5. Correlation between some variables.

		Age	Length of employment	Number of ass.	EE	D	PA	Depression	Anxiety
Age	r	1							
	p								
Length of employment	r	0.651	1						
	p	**0.001**							
Number of assignments	r	0.053	-0.023	1					
	p	0.418	0.728						
Emotional exhaustion	r	-0.172	-0.322	-0.070	1				
	p	**0.009**	**0.001**	0.283					
Depersonalization	r	-0.208	-0.355	0.023	0.722	1			
	p	**0.001**	**0.001**	0.729	**0.001**				
Personal achievement	r	-0.306	-0.436	0.035	0.720	0.596	1		
	p	**0.001**	**0.001**	0.592	**0.001**	**0.001**			
Depression	r	-0.030	-0.375	0.002	0.562	0.474	0.355	1	
	p	0.649	**0.001**	0.973	**0.001**	**0.001**	**0.001**		
Anxiety	r	-0.112	-0.368	0.087	0.454	0.559	0.354	0.779	1
	p	0.086	**0.001**	0.184	**0.001**	**0.001**	**0.001**	**0.001**	
Stress	r	-0.092	-0.426	0.140	0.624	0.511	0.491	0.875	0.790
	p	0.161	**0.001**	**0.032**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**

DISCUSSION

The aim of this study was to examine burnout, depression, anxiety, stress levels and related factors among healthcare employees in refugee camps and to contribute to the subject matter.

Experiences such as war, terrorist attacks and migration are traumatic experiences that threaten the life, as well as the physical and mental wellbeing of an individual, which can affect not only the individual who is directly exposed to the experience, but also the people with whom the individual has a relationship with. When the literature on this subject is examined, it is observed that traumatic events experienced by professionals as a result of assistance during or after the trauma, may have a similar impact on individuals who are indirectly exposed to the trauma due to reasons such as witnessing death or the risk of injury (Choi, 2011; Kahil, 2016). It is inevitable that employees helping traumatized individuals, whether on a professional or voluntary basis, will show similar

psychological symptoms since they witness the life events of the individuals (Figley,2002; Kahil, 2016). In this context, it was determined in our study that the participants had higher levels of depression and anxiety compared to the Turkish population. According to the World Health Organization report, the depression rate in Turkey is 3.81% and the anxiety rate is 5.87% (WHO, 2020). The main reason why participants have higher rates of depression and anxiety compared to the general population is undoubtedly their chronic exposure to potentially traumatic events (for example natural disasters, car accidents) due to the nature of their work (Skeffington, Rees & Mazzucchelli, 2017; Stellman, 2008). When the literature on the subject is examined, it can be determined that 112 emergency healthcare employees showed signs of high traumatic stress because they witnessed violence and death during their work, treated severe physical injuries, witnessed child deaths and worked with individuals who were exposed to human-made attacks (Yeşil, 2010).

In our study, the mean scores for the sub-dimensions of the Maslach burnout scale were at a normal level of emotional exhaustion. When the data on depersonalization are observed, burnout levels are low. When the data on personal achievement are examined, the level of burnout is still low. In the study of Süloğlu (2009) similar results were obtained in our study. In the study conducted by Demirbilek and Uzman (2021), the level of burnout in ambulance service workers was found to be similar (Demirbilek & Uzman, 2021).

In the study, the level of depression was found to be higher in participants who went on cross-border missions. However, there was no significant difference in the level of stress and anxiety.The presence of serious stressors such as the fear for conflict situations at any time during the cross-border mission may have created a tendency for depression in individuals. In addition, difficult conditions, the stress of having to find out how to fix things and the difficulties they experience in meeting their health care needs, and the inadequacy of their ability to evaluate and manage the psychological state of the psychologically destroyed families and people who have lost their homes may be the cause. In his study, Erkaya (2003) stated that post-traumatic stress disorder is seen throughout life in emergency rescue teams, and that traumatic stress, especially depression, other anxiety disorders, alcohol substance addiction, etc. She reports that various psychopathologies such as she. Ben-Ezra et al.(2003) studied the effects of the Gaza War among Israeli nurses to understand the characteristics of post-traumatic stress symptoms. found that they had high scores. The findings of our study support the literature. In order to prevent this, it is necessary to determine the approaches that will minimize the negative impact levels of employees and to carry out preventive mental health studies.

Depression level was higher in UMKE employees. In the study conducted by Stellman et al. (2008) with the rescue workers who took part in the September 11, 2001 attack, it was observed that the depression frequency of the participants was higher than the general population (Stellman et al., 2008). It is stated in the literature that employees who participate in activities involving intense physical and psychological stress or respond to disasters are at risk of developing psychopathological symptoms and reactions because they often witness people's suffering and encountering death (Berger et al., 2007; Psarros et al., 2018). Occupational stress in healthcare workers working in emergency situations or working in the frontline can cause an acute or long-term stress disorder (Jonsson et al., 2003). Our research was compatible with the literature in this aspect.

The level of depression, anxiety and stress was significantly higher in participants who worked less than 8 years. In the study conducted by Alan and Demir (2022) with ambulance service employees, it is seen that the variable of working time does not affect the frequency of depression, anxiety and stress (Alan, Demir, 2022). The literature states that burnout, emotional exhaustion and depersonalization decrease in healthcare workers as the age increases and the working year increases (Barutçu & Serinkan, 2008). Age periods of the employees can affect their perceptions, wishes and expectations regarding their jobs (Yakut et al., 2013). Two-thirds of the participants in this study have 8 years or less of working experience and are a group of young workers. This situation can be explained by the inadequacy of young employees' ability to find solutions to problems in terms of working years and the disappointment experienced due to the high expectation level of young employees.

In our study, the level of anxiety and stress was higher in married participants, but there was no difference in the level of depression. When the literature was examined, different results were found regarding the effect of marital status on the level of depression, anxiety and stress. In the study conducted by Alan and Demir (2022) with ambulance service employees, it was seen that the marital status variable did not affect the frequency of anxiety and stress (Alan, Demir, 2022). In the study conducted by Stellman et al. (2008) with rescue workers who took part in the September 11, 2001 attack, the level of depression was significantly higher in married participants (Stellman et al., 2008). The reason for the different results suggests that there may be different confounding factors.

The frequency of anxiety and stress was higher in smokers. A meta-analysis by Zimmermann et al. (2020) has strikingly shown that smoking is the most studied risk factor and is also supported as a modifiable risk factor in the development of anxiety and stress disorders (Zimmermann et al., 2020).

When the gender characteristics of the participants were examined, there was no significant difference in depression and stress levels, but the frequency of anxiety was higher in female participants. In the study conducted by Alan and Demir (2022) with ambulance service workers, it was found that the anxiety level of female participants was significantly higher than male participants; it is seen that depression and stress levels do not make a difference according to the gender variable (Alan, Demir, 2022). In the study conducted by Stellman et al. (2008) with the rescue workers involved in the September 11, 2001 attack, the level of depression was significantly higher in women (Stellman et al., 2008). It is possible to explain this situation with the personality structures of women and men, their working environment and their roles in private life.

In our study, the mean EE score of the participants who worked voluntarily in temporary shelters, who were under the age of 31, female, smoking, use alcohol, married and had been working for 8 years or less was found to be significantly higher. Emotional exhaustion is accepted as the basic dimension and clearest symptom of burnout (Tümkaya, Çam & Çavuşoğlu, 2009). This means that healthcare employees who work on the frontline are emotionally fatigued, excessively worn out and tired, which leads to a decrease in productivity, missing work, being late at work, feelings of unhappiness, absenteeism from work due to psychosomatic complaints, resignation, regarding oneself as dysfunctional and such consequences, which causes an unproductive situation for both the employee and the institution on the long term (Demirbilek & Uzman, 2021).

In our study, it was determined that the burnout level score of participants employed at UMKE was significantly higher. The reason for this may be that UMKE employees intervene in more traumatic situations such as rescue efforts and they are more frequently at the frontline compared to other healthcare employees. Also they have a lot of experience and have great responsibilities such as refreshing their theoretical and practical education, which may be an explanation for higher levels of emotional exhaustion, depersonalization and personal achievement, compared with other professionals.

In the study, being female, working at UMKE and having a length of employment of 8 years or less were found to be significantly higher with regard to the sub-dimensions of depersonalization and personal achievement. When the literature is examined, it can be determined that 112 emergency healthcare employees and emotional exhaustion and depersonalization decrease as age and length of employment increase (Barutçu & Serinkan, 2008; Demirbilek & Uzman, 2021).

In our study, it was observed that using alcohol and cigarettes increased the mean scores of depersonalization. When the literature is examined, it is seen that smoking behavior is frequently used as a method of coping with the stress and burnout of employees (Yıldız et al.,2018; Kütükçü & Kocataş,2019). In a study conducted on nurses, depersonalization scores of nurses who smoked were higher than nurses who did not smoke (Kütükçü &Kocataş,2019), in a study conducted in Saudi Arabia; Among health professionals, smokers were found to be at higher risk for burnout compared to nonsmokers (Alqahtani et al., 2019), while another study on police and ambulance personnel in Norway found that personnel who drink alcohol to cope with occupational stress experience higher levels of depersonalization. (Sterud et al., 2007). On the contrary, it can be said that alcohol and cigarettes, which are used to reduce stress, are factors that negatively affect stress and stress, increase stress, and have no effect on coping.

According to the results of the correlation analysis, a positive relationship was found between stress and anxiety, depression and burnout sub-dimension scores.

A negative significant relationship was found between all sub-dimensions of burnout, age and working time. In the study conducted by Barutcu and Serinkan on nurses, it was observed that emotional exhaustion and depersonalization decrease as age progresses (Barutcu and Serinkan, 2008). Emotional exhaustion describes a situation where the individual has nothing left to give to others and his emotional resources are diminished. Depersonalization is the individual's negative perception of himself and the people he serves because of his lack of attention, distance, indifference and hostility to others.

It is possible to explain the lower burnout levels of the elderly compared to the young, with the increase in their ability to solve problems with increasing age, and the disappointment experienced by the young employees due to their high expectation levels. From this point of view, it can be said that there is a negative relationship between age and burnout. It can be said that with the progress of the working year, the experience increases, and therefore, it reduces the psychological reaction to the difficulties encountered chronically. There was a negative significant relationship between depression, anxiety and stress and working year. We think that it is due to the fact that the experience increases with the progress of the working year, and therefore, it reduces the psychological reaction to the difficulties encountered chronically.

It is seen that there is a positive and significant relationship between the sub-dimensions of burnout and the scores of depression, anxiety and stress. Traumatic stress-related depression, stress and panic disorder are often seen together in the same person, this is called comorbidity. Psychiatric comorbidity rates are higher in frontline personnel such as ambulance workers and rescuers (Stellman et al., 2008).

This study presents important findings in terms of determining the depression, stress and anxiety states of healthcare employees assigned to the frontlines and creating the necessary awareness and intervention programs to protect them from burnout. The results of these studies have important implications for developing future research programs, educational and psychosocial support initiatives, and international policies. For researchers, knowing the mental states and resilience of health workers working in refugee and asylum camps, and examining the associated factors that affect them, may improve procedures in responding to such situations. In addition, we reveal that many frontline health workers need support mechanisms to prevent the stress, burnout and weariness of the workforce; will start to invest significantly in healthcare professionals working in this field. This knowledge can identify the support systems these groups need. Finally, our study will provide very important information about the health consequences of refugees and asylum seekers to the policy makers of UMKE and 112 emergency health services at the front line.The strength of the study lies in the fact that it is one of the limited number of studies on the mental state of healthcare employees working in temporary shelters.

Limitations of the Study

Certain limitations are applicable to our study. The most important limitation of this study is that it cannot be generalized, since it was carried out in a cross-sectional descriptive manner. The fact that the study was implemented in only one province and the data were collected online, are other limitations. There is a necessity for future studies which examine stress and burnout experienced by healthcare employees working at refugee camps with different variables and which also include the examination of the effects of regulations and support mechanisms.

CONCLUSION

In conclusion, it can be stated that the depression, stress and anxiety levels of participants were high. The fact that the participants were female, aged 31 and younger, had a short length of employment and were UMKE staff members increased the level of burnout, while the depression levels of volunteer workers in the camps were higher. It is recommended to make arrangements in the working conditions in such a manner as to increase the job satisfaction and to reduce burnout in healthcare employees at refugee camps, to closely monitor workers in these regions and to provide the necessary psychological support. Regulations aiming to ensure that employees have a social support network both in and outside the working environment and engaging in interventional activities will be effective in strengthening coping mechanisms.

It is known that the studies in our country on burnout and depression in healthcare employees working in refugee camps are limited. It is thought that examining the stress and burnout experienced by healthcare employees working in refugee camps with different variables will contribute to the literature.

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Conflict of Interest

There is no conflict of interest between the authors.

Author Contributions

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Association between MPV and Cerebral Vascular Ischemic Burden in Mild to Moderate Alzheimers's Disease

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ABSTRACT

Objective: Vascular pathologies and chronic neuroinflammation play an important role in Alzheimer's Disease (AD). Increased platelet activity, which underlies the pathophysiology of atherosclerosis and systemic inflammation, has been reported several times of AD. However, the relationship between this increase and neuroimaging correlates has not been studied yet. This study aims to evaluate the relationship between mean platelet volume (MPV), as a reliable indicator of platelet activity, and vascular ischemic burden in neuroimaging of AD. **Materials and Methods:** Medical records of mild-moderate AD cases diagnosed in our dementia outpatient clinic between 2021-2022 were retrospectively reviewed. Patients were classified as having "mild" or "severe" vascular ischemic burden on MRI. Clinical findings and platelet markers (Platelet-PLT, Platelet Distribution Width-PDW, Mean Platelet Volume-MPV) were compared between the groups. Multivariate regression was applied for potential confounders regarding vascular ischemic burden. **Results:** Out of 59 patients, 36 had 'mild' and 23 had 'severe' ischemic burden. Demographic and clinical features were similar; however, MPV was significantly higher in the group with severe ischemia (p=0.013). Multivariate analysis revealed an independent association between MPV and ischemic burden. An MPV value of ≥8.7 fL had a sensitivity of 69.6% and a specificity of 61% for severe burden. **Conclusion:** Our results highlight the role of platelet activation in the vascular pathogenesis of AD. During the early evaluation of AD, increased MPV can serve as a marker to determine the high-risk group in terms of cerebral ischemic burden. This might enable close monitoring and timely management of high-risk patients regarding the development of vascular morbidities.

Keywords: Alzheimer's Disease, Mean Platelet Volume, MPV, Vascular Ischemic Burden, Inflammation.

Hafif-Orta Evre Alzheimer Hastalığında MPV'nin Serebral Vasküler İskemik Yükle İlişkisi

ÖZ

Amaç: Alzheimer Hastalığı'nın (AH) temelinde, vasküler patolojiler ve kronik nöroinflamasyon önemli yer tutmaktadır. Ateroskleroz ve sistemik inflamasyon patofizyolojisinde kritik rol oynayan trombosit aktivitesinin de, AH'de arttığı çok kez bildirilmiştir. Ancak bu artışın, hastalıktaki nörogörüntüleme korelatlarıyla ilişkisi henüz incelenmemiştir. Bu çalışmada amaç, trombosit aktivitesinin göstergesi olan ortalama trombosit hacminin (MPV), AH nörogörüntülemesindeki vasküler iskemik yükle ilişkisini değerlendirmektir. **Gereç ve Yöntem:** 2021-2022 yılları arasında demans polikliniğimizde tanı alan hafif-orta evre AH olgularının kayıtları retrospektif incelendi. Hastalar MRG'deki iskemik yüke göre "ağır" veya "hafif" olarak sınıflandırıldı ve klinik bulgular ile platelet belirteçleri (Platelet-PLT, Platelet Dağılım Genişliği-PDW, Ortalama Trombosit Hacmi-MPV) gruplar arasında karşılaştırıldı. Vasküler yükle ilişkili potansiyel değişkenlere yönelik çoklu regresyon analizi uygulandı. **Bulgular:** İncelenen 59 hastanın 36'sı MRG'de 'hafif', 23'ü 'ağır' vasküler iskemik yüke sahipti. Gruplar demografik ve klinik yönden benzerken; MPV ağır iskemik yükü olan grupta anlamlı yüksekti (p=0.013). Çoklu regresyonda, MPV ve iskemik yük arasında bağımsız ilişki gözlendi. ≥8.7 fL MPV değerinin ağır serebral iskemik yük varlığı açısından %69,6 duyarlılığa ve %61 özgüllüğe sahip olduğu görüldü. **Sonuç**: Bulgularımız AH vasküler patogenezinde trombosit aktivasyonunun rolünü vurgulamaktadır. Artmış MPV AH'nın erken dönem değerlendirmesinde, serebral iskemik yük açısından yüksek riskli grubun belirlenmesinde bir belirteç olarak kullanılabilir. Bu erken tespit; vasküler morbiditeler açısından yakın takibe ve korunma/tedavi stratejilerini zamanında planlamaya olanak sağlayacaktır.

Anahtar Kelimeler: Alzheimer Hastalığı, Ortalama Trombosit Hacmi, MPV, Vasküler İskemik Yük, Inflamasyon.

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INTRODUCTION

Alzheimer's disease (AD) is a chronic, heterogeneous neurodegenerative disease characterized by complex pathological processes involving neuroinflammation, neurodegeneration, and synaptic dysfunction. Among individuals over 65, vascular diseases are also accounted for significant risk factors that take part in the pathophysiology and cause a remarkable predisposition (De la Torre JC, 2010; Elman-Shina K et al., 2022). The possible link between such vascular disorders and AD is likely based on cerebral hypoperfusion and tissue ischemia, triggering neurodegeneration through a chronic neuroinflammatory response. Chronic inflammation facilitates neuronal death and consequently paves the way for the accumulation of amyloid plaques and neurofibrillary tangles, which result in both the onset and progression of the disease (Elman-Shina K et al., 2022; Custodio N et al., 2017; Snowdon DA et al., 1997). Furthermore, background inflammation in AD seems to extend far beyond the central nervous system (CNS), as numerous markers reflecting systemic inflammation have been demonstrated to increase during the disease course (Chen SH et al., 2017; Casoli T et al., 2010; Dong X et al., 2019). Out of them, platelets and related indices were found to be reliable indicators of the presence and severity of disease, according to the recent literature.

Many studies have shown significant alterations in terms of the number and activity of the platelets, which play a critical role in the pathophysiology of systemic inflammation and atherosclerosis result (Casoli T et al., 2010, Sevush S et al., 1998; Talib LL et al., 2012). Mean Platelet Volume (MPV), one of the most studied platelet-related indices, represents the average size of platelets in peripheral blood and provides notable information regarding their activity and functional status. It is easily accessible from routine hemogram studies and the elevation, which is known to be compatible with increased platelet activity and vascular inflammation, has been accepted as an inflammatory biomarker in the setting of several diseases (Slavka G et al., 2011; Korniluk A et al., 2019). Nonetheless, contradictory results regarding MPV were reported for patients with Mild Cognitive Impairment (MCI) or AD. While some authors reported an increase in MPV for this group compared to controls; some others suggested a decrease (Chen SH et al., 2017; Wang RT et al.,2013).

In this study, we aimed to evaluate the relationship between Mean Platelet Volume (MPV) and cerebral vascular ischemic burden on neuroimaging among patients with mild to moderate Alzheimer's disease who have no overt diagnosis of cardiac and/or cerebrovascular disease. Early identification (e.g., during the initial visits) of patients with severe burdens is essential since they could benefit from close monitoring to prevent the development of definite vascular accidents.

To the best of our knowledge, no similar study exists in the literature that evaluates the relationship between MPV alterations and neuroimaging correlates of cerebral ischemic burden in AD.

MATERIALS AND METHODS

Patients

Medical records of patients admitted to the outpatient clinic of dementia and neurocognitive disorders in the Neurology Department of Gazi University Research and Training Hospital between January 2021 and May 2022 were retrospectively reviewed. The patients with a final diagnosis of mild-moderate AD, according to National Institute on Aging and Alzheimer's Association (NIA-AA) criteria after clinical assessment and consequent diagnostic workup, were subjected to further analysis. Individuals with an already diagnosis of malignancy, active infection, an additional neurodegenerative disorder, definite cardio-cerebrovascular diseases (coronary artery disease, acute myocardial infarction, cardiac arrhythmias, and atrial fibrillation, heart failure, stroke) and autoimmune diseases, as well as the patients receiving any medication that could potentially affect hemogram parameters, were excluded (Benjamin EJ et al., 2018). Age, gender, and comorbid illnesses; results of clinical and neuropsychological examinations both including the structured interview with the patients and the family and neurological examinations; the scores of the Montreal Cognitive Assessment (MoCA) test; hemogram parameters and cranial MRI findings were recorded. The grade of the vascular ischemic burden on cranial MRI was classified according to the scoring system identified by Fazekas et al. (Fazekas F et al., 1987).

Laboratory

Venous blood samples for complete blood count were taken from all patients on the same morning with the first visit to the outpatient clinic following overnight fasting. The samples were collected into EDTA tubes and then subjected to an automatic hematological analysis (Unicel® DxH800 automated hematology analyzer). Platelet count and platelet-related markers, including mean platelet volume (MPV) and platelet distribution width (PDW), were recorded for each patient.

Magnetic resonance imaging

All patients underwent a standardized Cranial Magnetic Resonance Imaging (MRI) study under the dementia protocol following a detailed history and neurological and mental examination for dementia symptoms (MRI; 3-Tesla Magneton Aera; Siemens, Erlangen, Germany). The sections were examined in detail by an expert neuroradiologist, and the vascular burden with microangiopathic ischemic features observed in the T2 and FLAIR sequences were scored based on the scoring system described by Fazekas et al. [Fazekas 0: No lesion or single punctate lesion (subcortical hyperintensities), Fazekas 1: Multiple punctate lesions, Fazekas 2: Confluent lesions

(bridging), Fazekas 3: Diffuse confluent lesions]. Regarding this study, patients with a Fazekas score of 0 to 1 were referred to as having 'mild ischemic burden' and patients with a score of 2 to 3 as 'severe ischemic burden'.

Statistical analysis

The statistical analysis was conducted via IBM SPSS 20 software package (SPSS, Inc., Chicago, Illinois, USA). The normality of numeric data was assessed by the Shapiro-Wilk test. Normally distributed continuous variables were reported as mean (±SD), and skewed parameters were presented as median (min-max). Categorical variables were expressed as percentages (%) and evaluated with the Chi-square test. Demographic features, rate of comorbid diseases, Montreal Cognitive Assessment (MoCA) scores and hemogram results were compared between groups of patients who have neuroimaging findings compatible with either 'mild ischemic burden (Fazekas Stage 0-1)' or 'severe ischemic burden (Fazekas Stage 2-3)'. Pairwise comparisons regarding continuous variables were performed via independent sample's t-test or Mann-Whitney U test according to the normality. A logistic regression model was applied of analyze potential variables associated with vascular ischemic burden in neuroimaging. A two-tailed p-value of < 0.05 was considered statistically significant.

Ethical considerations

This retrospective research was conducted under the ethical standards of the Helsinki Declaration, and the study protocol was approved by the Ethics Committee of Gazi University Faculty of Medicine (2023 / 878).

RESULTS

Fifty-nine eligible patients with a diagnosis of mild to moderate Alzheimer's Disease who have accessible neuroimaging and laboratory data were included. Out of this 59, 34 (58%) were female and 25 (42%) were male. The mean age of the entire cohort was 73.2±7.9 years. The most common comorbidities were hypertension (HT) and diabetes mellitus (DM) which were referred to as cardiovascular (CV) risk factors. Among the entire cohort, 71% of the patients (n:42) had a positive history of hypertension, out of whom 52% had coexistent DM. The baseline demographic characteristics of the study population are summarized in Table 1.

Table 1. Baseline demographic and clinical characteristics of the study population (n=59).

Variable	
Age [years (mean ± SD)]	73.2±7.9
Gender	
Female [n (%)]	36 (61%)
Male [n (%)]	23 (39%)
Education	
None [n (%)]	7 (12%)
Primary [n (%)]	27 (46%)
High school and college [n (%)]	25 (42%)
Cardiovascular risk	42 (71%)

61% (n:36) of the patients had cranial MRI findings compatible with 'mild ischemic burden', and 39% (n:23) had features of 'severe ischemic burden'. The two groups were similar in terms of age, gender, education, CV risk, and Montreal Cognitive Assessment scores (MoCA) (p:0>05). Platelet count and platelet distribution width either did not demonstrate a significant difference between the two (p:0.18 and p:0.76, respectively). However, mean platelet volume (MPV) was shown to be significantly higher in the group with 'severe ischemic burden' (p:0.01) (Table 2).

Table 2. Pairwise comparisons between groups according to fazekas stage (mild vs severe) (n=59).

	Mild Stage [Fazekas 0-1] (n:36)	**Severe Stage [Fazekas 2-3] (n:23)**	**p**
Age [years (mean±SD)]	72±8.4	75±6.9	0.15
Sex [F (%) vs M (%)]	71% vs 29%	48% vs 52%	0.08
ED. (E0 vs E1 vs E2 %)	14% vs 42% vs 44%	9% vs 52% vs 39%	0.69
Positive history for CV risk [% (n)]	72% (n:26)	70% (n:16)	0.70
MOCA score	16.3±4.6	16.8±5.2	0.78
PLT (10^3/µl)	248.2±66.8	220.9±58.1	0.18
MPV (fL)	8.6±0.98	9.3±1.1	**0.01***
PDW (%)	16.5±1.6	16.3±1.7	0.76

Univariate and multivariate regression analyses for potential confounders regarding cerebral vascular ischemic burden revealed a significant association between MPV increase and advanced Stage of Fazekas. The relationship was independent of age, gender, and comorbid CV risk factors (Table 3).

A ROC curve analysis. Demonstrated that MPV values >8.7 fL had a sensitivity of 69.6% and a specificity of 61% for 'severe ischemic burden' in the setting of mild to moderate AD (AUC: 0.680, 95% CI: 0.542-0.818, p<0.021*) (Figure 1).

Table 3. Evaluation of covariates with potential influence on fazekas stage (n=59).

Variable	Univariate Analysis			Multivariate Analysis		
	Exp(B)	95% CI	p value	Exp(B)	95% CI	p
Age	1.05	0.98-1.13	0.15	1.07	0.99-1.16	0.08
Sex	0.39	0.13-1.13	0.08	0.33	0.10-1.1.	0.07
CV risk	1.14	0.36-3.59	0.83	1.59	0.41-6.17	0.50
MPV	1.93	1.11-3.37	**0.02***	2.32	1.21-4.46	**0.01***

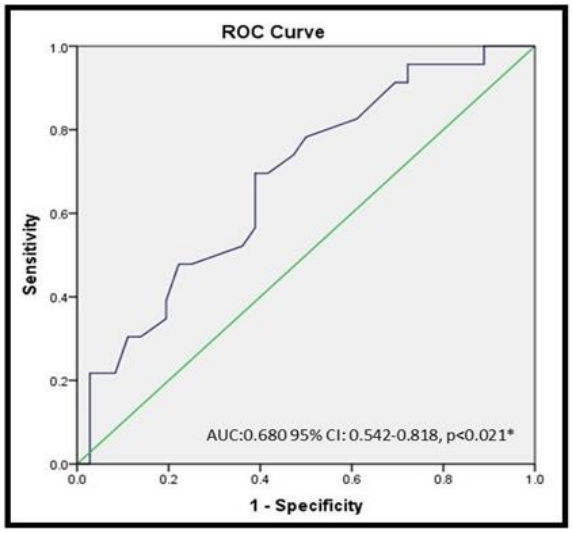

Figure 1. ROC curve analysis.

DISCUSSION

The current study's results demonstrated a significant relationship between MPV and cerebral ischemic burden in patients with mild to moderate AD who have similar demographic and clinical characteristics. MPV, accepted as a reliable marker of systemic inflammation, was found to be increased in patients with advanced MRI findings, as in the ones with mild features. To the best of our knowledge, this is the first study in the literature, searching for the relationship between MPV and neuroimaging correlates of vascular ischemic burden in AD.

In addition to typical pathological marks like senile plaques and neurofibrillary tangles, there is plenty of evidence regarding the ongoing inflammatory process in AD, which include enhanced aggregation of activated microglia, astrocytes around the postcapillary venules, and adhering leucocytes inside. Because neuroinflammation promotes the activation of the peripheral immune system, many inflammatory markers in circulation have been the subject of relevant research in AD. Platelets and their relative indices cover a remarkable proportion of these studies (Chen SH et al.,2017). Platelets have a prominent pro-inflammatory role and act as an important source of circulating amyloid-beta (a-ß) (Li QX et al.,1998; Talib LL et al., 2012). In activation, they adhere to leukocytes and endothelium with the aid of adhesion molecules and pave the way for the secretion of inflammatory mediators like interleukins and chemokines. Some other changes regarding the levels of enzymatic components inside, like cyclooxygenase-2 (COX-2) and phospholipase A2, which take part in the synthesis of inflammatory mediators, were also reported in the last decades (Krzystanek E et al.,2007; Bermejo P et al., 2008).

As an important platelet-derived parameter, mean platelet volume (MPV) is easily obtained from routine hemogram studies and represents the measure of average platelet size. The normal range varies between 7.5-12.0 fL; under physiological conditions, the ratio of large platelets / total platelets is not expected to exceed 0.2-5.0% (Korniluk A et al., 2019). Increasing MPV is an outcome of enhanced platelet aggregation, synthesis, and release of thromboxane TXA2 and β-thrombomodulin (Choi DH et al.,2016). In many pathological conditions that develop on the background systemic inflammation, such as cardiovascular and peripheral arterial diseases and cerebrovascular accidents, MPV increase was demonstrated to be a steady accompaniment reflecting overall vascular mortality (Slavka G et al., 2011; Korniluk A et al.,2019; Greisenegger S et al., 2004; B; Lance MD et al., 2012; Tohgi H et al.,1991). Its prognostic value was confirmed in acute ischemic stroke either (Greisenegger S et al., 2004). Taken together, MPV elevation in AD is not surprising due to the neuroinflammatory framework of the disease (Huang LT et al., 2022).

However, some few reports exist in the literature, that argue the opposite. Wang et al. examined platelet markers in Mild Cognitive Impairment (MCI), AD, and healthy controls in 2013. They reported a significant decrescent in MPV and PDW levels among patients with AD as to MCI and controls. The authors suggested a correlation between the grade of cognitive impairment and a decrease in MPV in that

study (Wang RT et al.,2013). One year later, the same group published similar results in a slightly different cohort consisting of two other dementia groups (AD and VaD) and controls; and again stated decreased values of MPV and PDW among dementia patients when compared to controls (Liang QC et al., 2014). However, the authors could not clarify the definite mechanism underlying this diminishment. They proposed a possible association between hematopoietic disorders and the onset/progression of AD and suggested that dysregulation in bone marrow cells, including megakaryocytes, may be responsible for this reduction.

In contrast, most of the papers in the literature, which are relevant to this issue, disclosed concordant findings with the current study. For instance, Chen et al. demonstrated high MPV values in 92 AD patients compared to 84 age, sex-matched controls (Chen SH et al., 2017). The results of another research from Dong et al. were similar to our findings, which reported an average MPV value of 8.78 fL among 57 patients with MCI, which was significantly higher than the mean (8.40 fL) of 59 controls (Dong X et al., 2019). Guzel et al. found increased levels of MPV among 38 patients with AD as to 29 controls, and further analysis revealed that the values of MPV in patients with moderate to severe AD were also higher than the ones with mild disease. The authors also introduced a negative correlation between MPV and MMSE in patients with AD (Guzel S et al., 2013). Yesil et al. identified an average MPV value of 8.46 fL among 126 patients with AD, while it was 8.17 for controls and significantly lower than the patient group (Prodan CI et al., 2011).

There are some limitations to the current study. First, the sample size is relatively small, making it difficult to generalize the findings. Second, the absence of follow-up data due to the retrospective design disables to presume the subsequent clinical implications of the observed results. On the other side, homogenous subgroups of patients in terms of demographic and clinical characteristics during pairwise comparisons, as well as persistent retrieval of a consistent relationship between elevated MPV and vascular burden after adjustment for all potential confounders, strengthen the reliability of our results.

CONCLUSIONS

The current study's findings support the role of platelet activation in the vascular pathogenesis of AD and indicate an independent association between MPV and ischemic vascular burden on neuroimaging. Early identification of patients with the high ischemic burden on initial evaluation is essential since completion of the diagnostic workup, particularly neuroimaging of the patients with cognitive complaints, AD could take some time; and this subset of patients might be more prone to cardio-cerebrovascular consequences. In such circumstances, an MPV value of >8.7 fL could serve as a marker for the physician to choose the right population that would benefit from close monitoring of prevent vascular morbidities.

Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: EEA; **Material, methods and data collection:** EEA, MU; **Data analysis and comments:** EEA, MU; **Writing and corrections:** EEA.

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Türkiye'de Covid-19 Pandemisi Sırasında Yaşlı Bireylerin Yalnızlığı ve İlişkili Faktörler

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ÖZ

Amaç: Bu çalışmada Covid-19 pandemisi sırasında evde yaşayan 65 yaş ve üstü bireylerdeki yalnızlık algısı ve bunu etkileyen faktörlerin incelenmesi amaçlanmıştır. **Gereç ve Yöntem:** Kesitsel tipte yapılan bu araştırmanın verileri Türkiye'nin Sakarya İlinde yaşayan, tabakalı örnekleme yöntemi ile belirlenen 1093 yaşlı bireyden toplanmıştır. Verilerin toplanmasında Tanımlayıcı Veri Kayıt Formu ve Yaşlılar İçin Yalnızlık Ölçeği kullanılmıştır. **Bulgular:** Çalışmamızda evli olmayanların, kentsel alanda yaşayanların, eğitim düzeyi düşük olanların, geliri giderine eşit veya az olanların, sosyal güvencesi olmayanların, eşi ile yaşayanların kronik hastalığı olanların Covid-19 tanısı alanların, genel sağlık algısı çok iyi/iyi olanlar ile hobisi olanların toplam yalnızlık düzeyleri karşılaştırıldıkları gruplara oranla anlamlı olarak daha yüksek olduğu bulunmuştur. **Sonuç:** Araştırma sonucunda, yalnızlığın yaşlılar için önemli bir risk faktörü olduğu belirlenmiş, katılımcıların medeni durumu, ikamet ettiği yer, eğitim, çalışma ve gelir durumu, birlikte yaşadığı kişiler, genel sağlık algısı, hobi varlığının yalnızlık duygusunda etkili olduğu saptanmıştır.
Anahtar Kelimeler: Yalnızlık, Yaşlı, Covid-19, Pandemi.

Loneliness of Elderly Individuals and Associated Factors During the Covid-19 Pandemic in Turkey

ABSTRACT

Objective: In this study, it was aimed to examine the perception of loneliness in individuals aged 65 and over living at home during the Covid-19 pandemic and the factors affecting it. **Material and Methods:** The data of this cross-sectional study were collected from 1093 elderly individuals living in Sakarya, Turkey, determined by stratified sampling method. Descriptive Data Registration Form and Loneliness Scale for the Elderly were used to collect data. **Results:** In our study, the total loneliness levels of those who are unmarried, those living in urban areas, those with low education levels, those whose income is equal to or less than their expenses, those without social security, those living with their spouses, those with chronic diseases, those diagnosed with Covid-19, those with very good/good general health perception and those who have hobbies. It was found to be significantly higher than the groups they were compared with. **Conclusion:** As a result of the research, it was determined that loneliness is an important risk factor for the elderly, and it was determined that the participants' marital status, place of residence, education, employment and income status, people they live with, general health perception, and the presence of hobbies were effective in the feeling of loneliness.
Keywords: Loneliness, Elderly, Covid-19, Pandemic.

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GİRİŞ

İnsanoğlunun içinde yaşadığı doğal çevre, insanlar için tehlike oluşturan birçok salgın hastalığı da içinde barındırmaktadır. Salgın hastalıkların, geçmişte ve bugün yaşandığı gibi, gelecekte de yaşanması muhtemeldir (Aslan, 2020). Dünya Sağlık Örgütü Çin Ülke Ofisi, 31 Aralık 2019 tarihinde, Çin'in Hubei eyaletinin Vuhan şehrinde, sebebi o an için bilinmeyen pnömoni vakaları bildirmiş ve 5 Ocak 2020 tarihinde ise, daha önce insanlarda tespit edilmemiş yeni bir koronavirüs tanımlanmıştır. Başlangıçta 2019-nCoV olarak ifade edilen bu hastalık, 11 Şubat 2020 de Covid-19 olarak adlandırılmış ve Çin'de ortaya çıktıktan sonra, üç ay gibi kısa bir süre içerisinde tüm dünyayı etkisi altına almıştır (WHO, 2020). 11 Mart'ta Türkiye'de ilk Covid-19 vakası görülmüş ve 12 Mart'ta Dünya Sağlık Örgütü, bu yeni gelişen virüsün bir pandemi olduğunu açıklamıştır.

Ortaya çıkışı itibariyle fiziksel, ruhsal ve sosyal olarak dünya insanlığını tehdit etmeye başlayan küresel koronavirüs (Covid-19) salgını dünyada ve Türkiye'de büyük bir stres kaynağına dönüşmüştür. Koronavirüs salgını bağışıklık sistemi daha zayıf olan yaşlı nüfus için hayati tehlike yaratmaktadır. Bu nedenle bulaşın önlenmesi amacıyla dünyada ve Türkiye'de sosyal hayattaki kısıtlamalar başta olmak üzere birçok tedbir kararları alınmıştır. Bu tedbirler kapsamında salgının başlangıcında Türkiye'de koronavirüs salgınına karşı alınan önlemlerden biri de yaşlılara sokağa çıkma yasağının getirilmesidir (Aki, 2020). Virüse karşı etkin aşıların uygulanmaya başlanması ve vaka sayılarındaki göreli azalmaya bağlı olarak 2021 yılının yaz aylarında yaşam normale dönmeye başlamıştır.

Yaşlılık döneminde meydana gelen fizyolojik ve psikolojik değişiklikler, bireyin kendini kabulünü zorlaştırmaya, sosyal ilişkilere girememeye, çekingen hissetmeye ve benlik saygısında düşmeye neden olmaktadır. Yaşlanma, zihinsel, fiziksel ve psiko-sosyal yönden birçok kayıpla ilişkili olduğundan, yaşlı bireylerin yalnızlığa karşı benzersiz bir duyarlılığı vardır (Bhutani ve Greenwald, 2021). Bunun sonucu olarak yaşlı bireyin çevresindekilerle iletişimi bozulmakta ve yalnızlık duygusu daha fazla hissedilmektedir (Erol vd., 2016). Buna ek olarak araştırma sonuçları yaşlılık döneminde bireyin yaşamdan aldığı doyumun azalmasına bağlı olarak, kendilerini daha yalnız hissettiklerini ortaya koymaktadır (Kaçan-Softa vd., 2015; Kalınkara ve Sarı, 2019).

Yaşlı bireylerin yalnızlık duygusuna neden olan faktörler; eş ya da arkadaş ölümü, emekli olma, evinden ayrılma, rollerde değişim, duyusal kayıplar, kronik hastalıklar, fiziksel sınırlılıklar, sosyal destek sistemlerinin azlığı, sosyokültürel koşullar, ekonomik güçlükler ve başkalarına bağımlılık olarak sıralanabilir (Akbaş vd., 2020). Kendisini olağan nedenlerle yalnız hisseden bu yaş grubu kişilerin Covid-19 salgını döneminde sosyal izolasyonun neden olduğu yalnızlık duygusu ile karşılaşması ruh ve beden sağlığı açısından pek çok riski de beraberinde getirmektedir (Aki, 2020). Buradan hareketle yalnızlık, yaşlılıkta depresyon gibi ruh sağlığı sorunları için temel risk faktörü olarak değerlendirilebilir (Ağırman vd., 2017; Steinman vd., 2020). Bu durum, tüm yaşlar için sosyal bir sorun olan yalnızlığı, yaşlılık döneminde daha da önemli bir sorun haline gelmektedir.

Yalnızlık, kişinin sosyal ilişki ağının, arzu ettiğinden daha az doyumlu algılamasına bağlı olarak yaşanan ve genel olarak olumsuz olarak ifade edilen bir duygu halidir. Günümüzde yalnızlık, hayatın bir gerçeği olarak bireylerin yaşamları boyunca karşılaştığı ve değişik derecelerde deneyimlediği bir duygu olarak açıklanmaktadır. Weiss, yalnızlığı, duygusal ve sosyal olmak üzere ikiye ayırmaktadır. Sosyal yalnızlık, algılanan sosyal etkileşimdeki yetersizlik ve kişinin çevresiyle ortak ilgiye dayalı etkinlikleri paylaşmada kendisini grubun, durumun ya da etkinliğin bir parçası olarak hissetmemesi olarak tanımlanabilir. Duygusal yalnızlık ise, özellikle bireysel olarak kişinin başka bir kişiye karşı kendini uzak görmesi, yakınlık bağlarını eksik olarak algılaması ve kabul edilmediğini hissetmedir (Heinrich ve Gullone, 2006).

Yalnızlık, başta yaşlılar olmak üzere birçok bireyin içinde bulunduğu önemli fakat ihmal edilen bir durumdur (Crewdson, 2016). Yalnızlık duygusunun neden olduğu depresyon ve diğer psikiyatrik bozukluklar kişilerin beden sağlıklarını da olumsuz etkilemektedir. Yalnızlığın kardiyovasküler hastalıklar açısından riski arttıran bir faktör olduğu ve inme geçirmiş hastalarda daha yüksek saptandığı rapor edilmiştir. Buna ek olarak yalnızlığın sağlık çıktılarının ele alındığı çalışmalarda, yalnızlığın, kişilik bozuklukları, psikozlar, intihar, kognitif fonksiyonlarda zayıflama, bilişsel gerileme, enfeksiyona karşı direncin azalması, depresyon ve demans ile ilişkili olduğu ifade edilmektedir. Tüm bunların yanında yalnızlığın, algılanan stres düzeyi, hata yapma korkusu, anksiyete, sinirlilik, iyimserlik ve öz saygı gibi duygu durumları ve yönelimleri de etkilediği belirtilmektedir (Boden-Albala vd., 2005; Hawkley ve Cacioppo, 2010; Fakoya vd., 2020; Bhutani ve Greenwald, 2021).

Yetersiz sosyal etkileşim içinde bir hayat süren yaşlılarda ihtiyaçları olan sosyal desteğin, duygusal bağlılığın veya sosyal bağların sağlanamadığı durumlarda yalnızlık duygusu daha fazla yaşanmaktadır. Bunun bir sonucu olarak da bu bireylerde ruh sağlığı ve yaşam kalitesi olumsuz yönde etkilenmektedir (Çam vd., 2018). Türkiye'de son yıllarda yapılan araştırmalarda (Ağırman vd., 2017; Balcı vd., 2012; Türkseven vd., 2020) yaşlılarda depresyon sıklığı yaklaşık %40 olarak rapor edilmiştir. Yaşam evresinin sonuna yaklaştıkça her bireyin karşı karşıya kaldığı bedenin fonksiyonel kapasitesinde ve işlevlerdeki azalmayla birlikte doğal bir sonuç olarak ortaya çıkan yalnızlık (Wilson vd.,

2007), yukarıda sözü edilen pandemi süreçlerinde bulaşın önlenmesi amacıyla sosyal hayatın kısıtlanmasına yönelik tedbirler çerçevesinde çok daha yoğun olarak yaşanan bir duygu hali olarak ortaya çıkmıştır. Huber ve Seifert (2022) tarafından yapılan araştırmada, sosyal olarak yalıtılmış bireylerin daha büyük bir yalnızlık riski altında olduğu ortaya konmuştur.

Covid-19 sürecinde yaşlı bireylerin sevdikleriyle fiziksel temasın olmaması, belirsizlik ve virüsün neden olduğu korkular, yaşlıları göreceli olarak yalnızlığa iterek mutluluklarını olumsuz yönde etkilemiştir (Liorente-Barroso vd., 2021). İsviçre'de yapılan bir araştırmada, pandemi sürecinde önerilen sosyal mesafe kurallarıyla birlikte yaşlılarda yalnızlık duygusunun arttığı, kısıtlamaların gevşetilmesinden sonra ise azaldığı saptanmıştır. Bu durum, yalnızlık ile Covid-19 kısıtlamaları arasındaki ilişkiyi göstermektedir (Seifert ve Hassler, 2020). Yalnızlık düzeyinin azaltılmasına yönelik müdahalelerin yaşlı bireylerin genel iyilik hali düzeyini ve yaşam kalitesini artırmak gibi etkileri bulunduğundan, Türkiye'de Covid-19 Pandemisi sırasında yaşlı bireylerin yalnızlık düzeyleri ve ilişkili faktörleri belirlenerek multidisipliner çözüm önerilerinin ortaya konması hem birey hem de toplumun sağlığı açısından oldukça büyük bir önem taşımaktadır.

Bu çalışmada Covid-19 pandemisi sırasında evde yaşayan 65 yaş ve üstü bireylerde yalnızlık düzeyini ve bunu etkileyen faktörlerin incelenmesi amaçlanmıştır.

GEREÇ VE YÖNTEM

Araştırmanın tipi, yeri ve zamanı

Kesitsel tipte yapılan bu çalışmada Sakarya İlinde 01 Eylül-26 Kasım 2021 tarihleri arasında elde edilen *"Yaşlı yetişkinlerin psikolojik sağlık ve fiziksel aktivite düzeyleri ile ilişkili etmenlerin belirlenmesi"* başlıklı projesinin verileri kullanılmıştır.

Araştırmanın evreni ve örneklemi

TÜİK verilerine göre 2020 yılı Sakarya İlinin 65 yaş ve üstü yaşlı nüfusu 105.605'tir. Openepi programı kullanılarak %3 margin of error, %95 güven düzeyi ile en az alınması gereken örnek büyüklüğü 1015 olarak hesaplanmıştır. Araştırmaya katılmayı kabul etmeme ya da evde bulunamayan yaşlıların yerine %10 yedek (n=101) alınarak, araştırmada toplam 1116 yaşlıya ulaşılması hedeflenmiştir. Örneklem için oturulan bölgeye göre tabakalı örnekleme yöntemi kullanılmıştır. Bu çalışmaya toplam 1093 yaşlı birey katılmış ve örnekleme ulaşma oranı ise %97.9 olarak hesaplanmıştır.

Verilerin toplanması

Veriler, gerekli izinler alındıktan sonra beş anketör tarafından yüz yüze görüşme yöntemi ile toplanmıştır. Veri toplamaya başlamadan önce anketörlere çalışmanın amacı ve yöntemi, yaşlılarla iletişim becerileri, anketle veri toplama konularında eğitim verilmiştir. Konuşma ve işitme engeli olan, yatağa bağımlı olan, demans öyküsü olan ve araştırmaya katılmayı kabul etmeyen yaşlılar araştırma kapsamı dışında tutulmuştur. Veri toplama aracı olarak; "Tanımlayıcı Veri Kayıt Formu" ve "Yaşlılar İçin Yalnızlık Ölçeği" kullanılmıştır.

Tanımlayıcı Veri Kayıt Formu: Literatürden yararlanarak araştırmacılar tarafından oluşturulan bu veri toplama aracı, 65 yaş ve üstü bireylerin sosyodemografik ve bireysel özellikleri, alışkanlıkları, kronik hastalık ve Covid-19 öyküsü, genel sağlık algısını belirlemeye yönelik soruları içermektedir.

Yaşlılar İçin Yalnızlık Ölçeği (YİYÖ): Yaşlı bireylerin yalnızlık düzeyini ölçmek için geliştirilen, Van Tilburg ve De John-Gierveld (1999) tarafından revize edilen bir özdeğerlendirme ölçeğidir. Ölçek 11 maddeden oluşmakta olup üçlü likert tipindedir. Ölçek "sosyal yalnızlık" ve "duygusal yalnızlık" olmak üzere iki alt boyuttan oluşmaktadır. Ölçeğin altı maddesi (2, 3, 5, 6, 9, 10) duygusal yalnızlığı ölçen, olumsuz maddeler; beş maddesi ise (1, 4, 7, 8, 11) sosyal yalnızlığı ölçen, olumlu maddelerdir. Toplam yalnızlığı hesaplamak için; duygusal yalnızlık sonuçları ile sosyal yalnızlık sonuçları toplanmalıdır. Bu iki boyutun toplamı genel yalnızlık puanını oluşturmaktadır (De Jong Gierveld ve Van Tilburg, 2011). Yaşlı bireylerin sosyal yalnızlığını ölçmeye yarayan ölçeğin beş maddesi olumlu (0= Evet, 1= Olabilir, 2= Hayır), duygusal yalnızlığını ölçmeye yarayan altı maddesi ise olumsuz (2= Evet, 1= Olabilir, 0= Hayır) ifadelerden oluşmaktadır. Ölçekten toplam alınacak minimum puan 0, maksimum puan 22'dir. Katılımcıların ölçekten aldıkları puanlar arttıkça yalnızlık düzeyleri de artmaktadır. Akgül ve Yeşilyaprak (2015) tarafından ölçeğin Türkçe geçerliliği yapılmış olup, Cronbach alfa değeri 0.85 olarak bulunmuştur. Bu araştırmada ise ölçeğin Cronbach alfa değeri 0.87 olarak hesaplanmıştır.

Araştırmanın etik yönü

Bu çalışma, World Medical Association Helsinki Deklarasyonu ilkelerine uygun olarak yapılmıştır. Sakarya Üniversitesi Tıp Fakültesi Girişimsel olmayan Araştırmalar Etik Kurulu'ndan yazılı izin alınmıştır (Tarih: 01.08.2021, no: 47687).

İstatistiksel analiz

İstatistiksel analiz SPSS 24.0 istatistik paket programı kullanılarak yapılmıştır. Verilerin normal dağılım gösterip göstermediğini belirlemek için Kolmogorov-Smirnov normallik testleri kullanılmıştır. Veriler normal dağılım göstermediğinden ($p<0.001$), grupları karşılaştırmak için parametrik olmayan testler (Kruskal Wallis testi, Mann-Whitney U testi) kullanılmıştır. İstatistiksel olarak anlamlılık düzeyinin yorumlanmasında $p<0.05$ kabul edilmiştir.

BULGULAR

Araştırmaya katılanların %62.6'sı kadın, %37.4'ü erkek olup, yaş ortalaması 71.9±5.9'dur (min=65, max=95). Yaşlı bireylerin %63.5'inin evli, %62.9'unun ortaokul ve altında eğitimi olduğu,

%61.8'inin emekli olup ek olarak herhangi bir işte çalışmadığı, %25.3'ünün ev hanımı olduğu, %50.9'unun sadece eşi ile birlikte yaşadığı saptanmıştır. Araştırmaya katılan yaşlı bireylerin, YİYÖ toplam puan ortalaması 9.57±4.6, sosyal yalnızlık puan ortalaması 3.11±2.78 ve duygusal yalnızlık puan ortalaması 6.46±2,52 olarak hesaplanmıştır. Katılımcıların yalnızlık düzeylerinin bazı sosyodemografik özellikler açısından karşılaştırılmasından elde edilen bulgular Tablo 1 de görselleştirilmiştir.

Tablo 1. Katılımcıların yalnızlık düzeylerinin bazı sosyodemografik özellikler açısından karşılaştırılması.

Sosyodemografik Özellikler		n	Sosyal Yalnızlık Ort.±SS	p	Duygusal Yalnızlık Ort.±SS	p	Toplam Yalnızlık Ort.±SS	p
Yaş	65-74	788	3.21±2.87	0.225	6.30±3.53	0.001*	9.50±4.77	0.645
	75-84	246	2.87±2.67		6.80±2.51		9.68±4.41	
	≥85	59	2.75±1.86		7.20±2.15		9.95±3.61	
Cinsiyet	Kadın	684	3.08±2.85	0.642	6.69±2.58	0.001*	9.77±4.81	0.078
	Erkek	409	3.15±2.68		6.07±2.38		9.22±4.29	
Medeni durum	Evli	694	2.96±2.88	0.005*	6.25±2.66	0.001*	9.20±4.95	0.001*
	Evli olmayan	399	3.38±2.58		6.82±2.23		10.20±3.94	
İkamet ettiği yer	Kentsel	775	3.38±2.75	0.001*	6.73±2.56	0.001*	10.11±4.56	0.001*
	Kırsal	318	2.44±2.76		5.80±2.30		8.24±4.54	
Eğitim düzeyi	≤Ortaokul	687	3.38±2.77	0.001*	6.81±2.51	0.001*	10.19±4.63	0.001*
	≥Lise	406	2.65±2.75		5.87±2.43		8.51±4.44	
Çalışma durumu	Emekli, çalışmıyor	675	2.52±2.80	0.001*	6.18±2.44	0.001*	8.70±4.75	0.001*
	Emekli, çalışıyor	50	4.10±1.91		6.06±2.73		10.16±3.65	
	Emekli değil, kendi hesabına çalışıyor	56	4.73±2.21		5.66±2.55		10.39±3.98	
	Emekli değil, çalışmıyor	36	5.42±1.9		7.17±2.11		12.58±2.98	
	Ev hanımı	276	3.72±2.61		7.29±2.53		11.01±4.23	
Gelir düzeyi	Giderden çok	285	2.71±2.74	0.012*	5.92±2.21	0.001*	8.63±4.21	0.001*
	Gidere eşit	536	3.20±2.70		6.69±2.55		9.88±4.62	
	Giderden az	272	3.35±2.96		6.57±2.71		9.92±4.96	
Sosyal güvence durumu	Var	1006	3.00±2.80	0.001*	6.38±2.52	0.001*	9.39±4.64	0.001*
	Yok	87	4.31±2.33		7.33±2.41		11.64±3.95	
Çocuk sahibi olma	Var	982	3.03±2.80	0.003*	6.46±2.51	0.689	9.48±4.63	0.059
	Yok	111	3.79±2.60		6.50±2.69		10.29±4.59	
Birlikte yaşanan kişi	Eşiyle	556	2.55±2.86	0.001*	5.97±2.64	0.001*	8.52±4.95	0.001*
	Çocuklarıyla	147	3.51±2.53		7.23±2.35		10.74±4.24	
	Eş ve çocuklarıyla	123	5.02±2.01		7.74±2.25		12.76±3.11	
	Yalnız	267	3.15±2.65		6.47±2.16		9.63±3.87	

SS= Standart sapma, *(p<0.05)

Tablo 1 incelendiğinde, yaşı ≥85 olan yaşlıların duygusal yalnızlık düzeylerinin daha genç yaşta olan yaşlılara oranla anlamlı ölçüde daha yüksek olduğu görülmektedir. Kadınların duygusal yalnızlık düzeylerinin de erkeklere oranla anlamlı ölçüde daha yüksektir. Evli olmayan yaşlı bireylerin evli olanlara oranla sosyal, duygusal ve toplam yalnızlık düzeylerinin anlamlı olarak daha yüksek olduğu belirlenmiştir. Kentsel alanda yaşayan yaşlı bireylerin sosyal, duygusal ve toplam yalnızlık düzeyleri kırsal alanda yaşayanlardan anlamlı olarak daha yüksektir. Ortaokul ve daha düşük eğitimi olan yaşlı bireylerin sosyal, duygusal ve toplam yalnızlık düzeyleri eğitimi lise ve üstünde olanlardan anlamlı olarak daha yüksektir. Emekli değil, çalışmayanların sosyal yalnızlık düzeyleri emekli, çalışmıyor olanlar ve ev hanımı olanlardan; ev hanımı olanların duygusal yalnızlık düzeyleri emekli değil kendi hesabına çalışanlardan; emekli değil, çalışmayanlar ve ev hanımı olanların toplam yalnızlık düzeyleri de emekli olup çalışmayanlardan anlamlı olarak daha yüksektir. Geliri giderine eşit ve geliri giderinden az olanların sosyal yalnızlık, duygusal yalnızlık ve toplam yalnızlık düzeylerinin geliri giderinden çok olanlardan anlamlı olarak daha yüksektir. Sosyal güvencesi olmayanların sosyal, duygusal ve toplam yalnızlık düzeyleri sosyal güvencesi olanlardan anlamlı olarak daha yüksektir. Çocuğu olmayanların sosyal yalnızlık düzeyinin çocuğu olanlara göre anlamlı olarak daha yüksek olduğu saptanmıştır. Eşi ile birlikte yaşayanların sosyal, duygusal ve toplam yalnızlık düzeylerinin diğer gruplara oranla anlamlı düzeyde düşük olduğu saptanmıştır.

Katılımcıların yalnızlık düzeylerinin sağlık/hastalık durumu açısından karşılaştırılmasından elde edilen bulgular Tablo 2'de sunulmuştur.

Tablo 2. Katılımcıların yalnızlık düzeylerinin sağlık/hastalık durumu açısından karşılaştırılması.

Sağlık/hastalık durumu		n	Sosyal Yalnızlık Ort.±SS	p	Duygusal Yalnızlık Ort.±SS	p	Toplam Yalnızlık Ort.±SS	p
Kronik hastalık	Var	788	3.21±2.77	0.058	6.68±2.48	0.001*	9.88±4.52	0.001*
	Yok	305	2.84±2.81		5.90±2.55		8.74±4.81	
Genel sağlık algısı	Çok iyi-iyi	758	2.84±2.81	0.001*	6.00±2.50	0.001*	8.84±4.65	0.001*
	Orta	244	3.64±2.66		7.50±2.06		11.14±4.04	
	Kötü-çok kötü	91	3.88±2.59		7.54±2.68		11.42±4.44	
Covid-19 tanısı	Evet	102	4.75±1.99	0.001*	6.67±2.61	0.115	11.41±3.46	0.001*
	Hayır	991	2.99±2.80		6.44±2.51		9.38±4.70	
Covid-19 nedeniyle karantinaya	Alınan	117	3.40±2.63	0.248	6.53±2.85	0.591	9.93±4.75	0.413
	Alınmayan	976	3.07±2.80		6.45±2.48		9.52±4.62	
Çevresinde Covid-19 kişi vakası	Var	292	3.03±2.45	0.764	6.91±2.06	0.056	9.95±3.67	0.083
	Yok	801	3.13±2.90		6.29±2.65		9.43±4.93	
Hobi	Var	455	1.18±2.24	0.001*	5.45±2.38	0.001*	6.63±4.20	0.001*
	Yok	638	4.48±2.27		7.18±2.38		11.66±3.70	
Sigara	İçen	145	3.83±2.54	0.001*	6.06±2.78	0.149	9.88±4.51	0.271
	İçmeyen	948	3.01±2.80		6.52±2.48		9.52±4.65	

SS= Standart sapma, *(p<0.05)

Tablo 2'deki bulgular kronik hastalığı olan yaşlı bireylerin duygusal ve toplam yalnızlık düzeylerinin hastalığı olmayanlardan anlamlı olarak daha yüksek olduğunu göstermektedir. Genel sağlık algısı "çok iyi-iyi" olan bireylerin sosyal yalnızlık, duygusal yalnızlık ve toplam yalnızlık düzeyleri diğer gruplara (genel sağlık algısı orta; kötü-çok kötü) göre anlamlı olarak daha düşüktür. Covid-19 geçiren yaşlı bireylerin sosyal ve toplam yalnızlık düzeyleri hastalığa yakalanmayanlara göre anlamlı olarak daha yüksektir. Herhangi bir hobisi olmayan yaşlı bireylerin sosyal, duygusal ve toplam yalnızlık düzeyleri hobisi olanlardan anlamlı olarak daha yüksektir. Sigara içen yaşlı bireylerin sosyal yalnızlık düzeylerinin sigara içmeyenlerden anlamlı olarak daha yüksek olduğu görülmektedir.

TARTIŞMA

Covid-19 salgını sürecinde ≥65 yaş bireylerdeki yalnızlık düzeyini ve bunu etkileyen faktörlerin incelendiği bu araştırmada yalnızlığın yaşlılar için önemli bir risk faktörü olduğu ortaya konmuştur. Benzer olarak Hollanda'da 65 ve üzeri yaştaki bireylerle yapılan bir araştırma sonucunda yalnızlık hissinin arttığı (Van Tilburg vd., 2020), Amerika Birleşik Devletleri'nde insanların pandemi sürecinde yaşadıkları yalnızlık duygusunu belirlemek amacıyla yapılan bir araştırmada da özellikle 65 yaşında duygusal yalnızlığın daha yoğun olduğu saptanmıştır (Luchetti vd., 2020). Bunlara ek olarak Bhutani ve Greenwald (2021) tarafından yapılan çalışmada da yalnızlığın yaşlı bireyler için Covid-19 bağlamında birçok olumsuz sonucu olduğu ortaya konmuştur. Pandemi öncesinde önemli bir halk sağlığı sorunu olan yaşlı yalnızlığının, pandemi önlemleri ile artması bilim insanlarının öncelikli kaygısı olmuştur (Armitage ve Nellums, 2020; Ayalon vd., 2021; Brooke ve Jackson, 2020).

Bu araştırmada yaş değişkeninin yaşlı bireylerin duygusal yalnızlık düzeylerinde belirleyici bir faktör olduğu sonucuna ulaşılmış olmasına ragmen, alanyazında yalnızlığın yaş ile ilişkisi üzerinde karar birliğine varılamamıştır. Bunun nedeni araştırmaların örneklem farklılığı ile açıklanabilir. Bununla birlikte bu araştırmada ortaya konan cinsiyetin yaşlı bireylerin yalnızlık düzeyleri üzerinde belirleyici bir etkiye sahip olduğu sonucu alanyazındaki birçok araştırma (Akgün, 2001; Bilgili vd., 2012; Kaçan-Softa vd., 2015; Kalınkara ve Sarı, 2019; Kapıkıran, 2016; Khorshıd vd., 2004; Paul vd., 2006) sonucu ile tutarlılık göstermektedir. Diğer yandan, alanyazında yaşlılardaki yalnızlık düzeylerinin cinsiyet açısından anlamlı olarak farklılaşmadığını ortaya koyan çalışmalar da yer almaktadır (Bilgili vd., 2012; Bozo vd., 2009; Dereli vd., 2010; Tel ve Sabancıoğulları, 2006). Araştırmalarda elde edilen farklı sonuçlar, araştırmaların örneklem farklılıkları ile açıklanabilir.

Bu araştırmada ulaşılan medeni durumun yalnızlık düzeyi üzerinde belirleyici bir etkiye sahip olduğu, başka bir anlatımla, evli olmayanların evlilere göre kendilerini daha yalnız hissettiklerine ilişkin sonuç alanyazındaki araştırma sonuçlarıyla tutarlılık göstermektedir (Arslantaş vd., 2006; Dereli vd., 2010; Erbatu, 2017; Luanaigh ve Lawlor, 2008; Ünal ve Bilge, 2005). Bu sonuçlar, evil olan yaşlı bireylerin eşleriyle olan paylaşımlarının yalnızlık duygusunu daha az hissettiklerinin göstergesi olarak yorumlanabilir.

Araştırma sonucunda kentsel alanda ikamet edenlerin kırsal alanda ikamet edenlere oranla kendilerini daha yalnız hissettikleri saptanmıştır.

Benzer olarak Erol vd. (2016) tarafından yapılan araştırmada da yalnızlık puanlarının kentte yaşayan yaşlılarda kırsalda yaşayanlara göre daha yüksek olduğu, belirlenmiştir. Elde edilen bu sonuç, kentsel alanda yaşayan yaşlı çevresinin kırsal alandakilere oranla şehir ve iş yaşamındaki yoğunluklarından dolayı önceliklerinin farklılaşması, bunun sonucu olarak da yaşlı bireylere gereken zamanı ayıramamalarının göstergesi olarak yorumlanabilir.

Bu araştırmada ortaya konulan eğitim düzeyi düşük olanların eğitim düzeyi yüksek olanlara oranla yalnızlık algısının anlamlı düzeyde yüksek olduğuna ilişkin sonuç, Bilgili vd. (2012), Khorshid vd. (2004), Luanaigh ve Lawlor (2008) ile Routasalo ve Pitkala (2003) tarafından yapılan çalışmalarda ulaşılan eğitim düzeyi düştükçe yalnızlığın arttığı sonucu ile tutarlıdır. Öğrenim düzeyi yüksek olan yaşlıların ekonomik ve entelektüel düzeylerinin daha iyi olması gibi nedenlerle sosyo-kültürel faaliyetlere katılım olanaklarına sahip olmaları, daha az yalnızlık duygusu yaşamalarının nedeni olarak yorumlanabilir.

Araştırma ile iş yaşamı deneyimi olmayanların olanlara oranla kendilerini daha yalnız hissettikleri saptanmıştır. İş yaşamında deneyimi olmayan grubun olanlara oranla sosyal ortam ve ilişkileri daha az yaşama olasılığı bu durumun nedeni olarak yorumlanabilir.

Araştırma sonucunda, gelir düzeyi yükseldikçe yalnızlık algısının azaldığı, diğer bir anlatımla yaşlıların gelir düzeyi düştükçe yalnızlık algısının arttığı sonucu alayazındaki birçok araştırmada da rapor edilmiştir (Kaçan-Softa vd., 2015; Kapıkıran, 2106; Routasalo ve Pitkala, 2003). Gelir düzeyi yüksek olan yaşlıların gezi vb. sosyal etkinliklere daha fazla katılım gösterebilmesi bu sonucun nedenlerin biri olarak değerlendirilebilir.

İnsanlar genellikle çocuklarını yaşlılıklarında sosyal güvence olarak algılamakta ve onların varlığını önemli bir sosyal destek olarak görmektedirler. Bu nedenle çocuk sahibi olmayanların olanlara oranla kendilerini daha yalnız hissettikleri sonucu Bilgili vd. (2012), Erbatu (2017) ile Liu ve Guo (2007) tarafından yapılan araştırma sonuçları ile tutarlıdır. Diğer yandan, Khorshid vd. (2004) tarafından yapılan araştırma sonucunda çocuk sahibi olmanın yalnızlık algısı üzerinde belirleyici bir etkiye sahip olmadığı saptanmıştır.

Araştırma sonunda eşi ile yaşayanların sosyal, duygusal ve toplam yalnızlık düzeylerinin diğer gruplara oranla anlamlı düzeyde düşük olduğu ortaya konmuştur. Elde edilen bu sonuç, yaşlı bireylerin eşleriyle hayata ilişkin paylaşımların devamlılığının yalnızlık duygusunu azaltmada önemli bir faktör olduğunun göstergesi olarak yorumlanabilir.

Covid-19'a bağlı ölümlerin %95'inin 60 yaş üzerinde olduğu düşünüldüğünde ve her 10 ölümden 8'inin en az bir kronik hastalığı (kardiyovasküler hastalık, hipertansiyon ve diyabet) bulunması yaşlı nüfus oranının pandemiden minimum düzeyde etkilenmesi daha da önemli hale gelmektedir (European Center for Disease Prevention and Control, 2020; World Health Organization, 2020). Bu araştırmada ortaya konan kronik hastalık varlığı ve genel sağlık algısının yalnızlık algısı üzerinde belirleyici bir etkiye sahip olduğu sonucu alanyazında araştırma sonuçları (Bilgili vd., 2012; Ünal ve Bilge, 2005) ile benzerdir. Kronik hastalığı bulunan yaşlıların, sağlıklı bireylere oranla daha fazla sosyal etkileşime ihtiyaç duymaları bu durumun nedeni olarak yorumlanabilir. Bununla birlikte hastalıkla birlikte zamanla yaşlı bireyin sosyal aktivitelerindeki azalma ve bundan sonraki hayatını var olan hastalığıyla geçireceği düşüncesi yalnızlık hissinin artmasına neden olmaktadır (Polat ve Kahraman, 2013).

Araştırmanın Covid-19 tanısı alanların almayanlara oranla kendilerini daha yalnız hissetmelerine ilişkin sonucu, pandemi sürecindeki önlemler çerçevesindeki karantina sürecinde sosyal izolasyon kuralının beklenen bir çıktısı yorumlanabilir. Buna ek olarak araştırma sonucunda hobisi olmayanların hobisi olanlara göre kendilerini daha yalnız hissettikleri ortaya konmuştur.

SONUÇ

Bu araştırma sonucunda yalnızlığın yaşlılar için önemli bir risk faktörü olduğu saptanmış, medeni durum, ikamet yeri, eğitim düzeyi, gelir ve çalışma durumu, sosyal güvence durumu, birlikte yaşanan kişiler, genel sağlık algısı ve hobi varlığının sosyal yalnızlık, duygusal yalnızlık ve toplam yalnızlık düzeylerini anlamlı düzeyde etkilediği ortaya konmuştur.

Bu araştırmada elde edilen sonuçlar, Türkiye'de ve Dünya'da sayısı gittikçe artan yaşlı nüfusun ruh sağlığına ve yaşam kalitesine olumsuz etkisi olan yalnızlığı ve bunu etkileyen faktörleri ortaya koyması bakımından önemlidir. Elde edilen bu sonuçlar, yaşlıların yalnızlık düzeylerini olumsuz etkileyen faktörlerin kontrol altına alınmasına yönelik olarak önlemlerin alınmasına rehberlik edebilir. Yalnızlık düzeyinin azaltılmasına yönelik müdahalelerin yaşlı bireylerin yaşam kalitesini artırmak gibi bireysel bir yönü olduğu kadar, toplumsal refah açısından da oldukça büyük bir önem arz ettiği söylenebilir. Bu nedenle bütüncül bir bakış açısıyla, özellikle yalnızlık açısından riskli yaşlılar (yalnız yaşayan, kentlerde yaşam süren, eğitim ve gelir düzeyi düşük olan, çalışmamış ve sosyal güvencesi olmayan, eşini kaybetmiş ve yalnız yaşayan, genel sağlık durumu kötü olan ve bir hobisi olmayanlar) düzenli olarak izlenmelidir. Yalnızlık yok edilemez, ancak azaltılabilir. Yaşlı bireylerin yalnızlık duygusunu azaltabilecek ve iletişim becerilerini güçlendirebilecek yoga, meditasyon, (sağlık ve yaş durumlarına uygun olmak şartıyla) gezi, hobi ve spor gibi etkinlikler oluşturulabilir. Bu çerçevede gönüllü kuruluşlar ve belediyeler iş birliği ile yaşlıları desteklemek ve onlarla sosyal iletişim sağlamak için çeşitli etkinlikler düzenlenebilir.

Bu çalışma, yalnızca evde yaşayan yaşlıların yalnızlık düzeyleri ve bu düzeyleri etkileyen faktörlerin saptanması ile sınırlıdır. Araştırma yalnızlık düzeyleri üzerinde anlamlı etkiye sahip değişkenlerin, yalnızlığı etkileme düzeylerini ve nedenlerini ortaya koymak amacıyla nitel araştırma yöntemiyle zenginleştirilebilir. Araştırma evde yaşayan yaşlılar ile huzurevinde yaşayan yaşlıların yalnızlık düzeyleri ve bu düzeyleri etkileyen faktörlerin karşılaştırılmasına yönelik olarak genişletilmiş biçimiyle tekrarlanabilir.

Teşekkür
Araştırmaya katılan tüm katılımcılara teşekkürlerimizi sunarız.

Çıkar Çatışması
Araştırmada herhangi bir çıkar çatışması yoktur.

Yazar Katkıları
Plan, tasarım: AGŞ, AA, SY, DSG; **Gereç, yöntem ve veri toplama:** AGŞ, AA, SY, DSG; **Analiz ve yorum:** AGŞ, AA; **Yazım ve eleştirel değerlendirme:** AGŞ, AA, SY, DSG.

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Hemşirelikte Farklı Eğitim Sistemlerinin Stres, Mesleki Hazıroluşluk ve Mobil Öğrenme Açısından Karşılaştırılması

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ÖZ

Amaç: Bu araştırmada pandemi süreci nedeni ile hemşirelik eğitiminde kullanılan hibrit ve uzaktan eğitim yöntemlerinin hemşirelik öğrencilerinin algıladıkları stres, mesleki hazıroluşluk ve mobil öğrenme tutumları acısından karşılaştırılması amaçlandı. **Gereç ve Yöntem:** Tanımlayıcı ve kesitsel olan çalışma 2021 yılı Mart-Nisan ayları arasında Türkiye'nin İç Anadolu Bölgesi'nde uzaktan eğitim yapan bir üniversite (n=101) ile Ege Bölgesi'nde hibrit eğitim yapan bir üniversitenin hemşirelik bölümü son sınıf öğrencileri (n=145) ile gerçekleştirildi. Verilerin analizinde, sayı, yüzde, Mann-Whitney U, Kruskal Wallis, Spearman korelasyon analizi kullanıldı. **Bulgular:** Öğrencilerin Hemşirelik Öğrencileri için Algılanan Stres Ölçeğin'den aldıkları toplam puan incelendiğinde; uzaktan eğitim alan öğrencilerin 70.60 ± 23.70, hibrit eğitim alan öğrencilerin ise 54.96±21.79 olduğu ve toplam puanları arasında istatistiksel açıdan anlamlı fark olduğu (Z=5.380, p=.000) tespit edildi. **Sonuç:** Araştırma, uzaktan eğitim alan öğrencilerinin algıladıkları stres puanlarının hibrit eğitim alanlara göre daha yüksek olduğunu, mobil öğrenmeyi kullanışlı ve öğrenme özgürlüğü olarak gören öğrencilerin stres algısının daha düşük, mobil öğrenmeyi sınırlılık olarak gören öğrencilerin ise stres algısının daha yüksek olduğunu, ayrıca öğrencilerin algıladıkları stres düzeyleri arttıkça mesleki hazıroluşluk düzeylerinin olumsuz etkilendiğini göstermiştir.

Anahtar Kelimeler: Algılanan Stres, Hemşirelik Öğrencileri, Hibrit Eğitim, Mesleki Hazır Oluş, Uzaktan Eğitim.

Comparison of Different Education Systems in Nursing in terms of Stress, Professional Readiness and Mobile Learning

ABSTRACT

Objective: The aim of this study was to compare the hybrid and distance education methods used in nursing education due to the pandemic process in terms of perceived stress, professional readiness and mobile learning attitudes of nursing students. **Materials and Methods:** This descriptive and cross-sectional study was conducted with senior nursing students from a university providing distance education in the Central Anatolian Region (n=101) and (n=145) a university providing hybrid education in the Aegean Region in Turkey between March and April 2021. Number, percentage, Mann-Whitney U test, Kruskal Wallis test, and Spearman correlation analysis were used in the data analysis. **Results:** When Perceived Stress Scale for Nursing Students total score of the students was examined, it was determined that Perceived Stress Scale for Nursing Students total score was 70.60 ± 23.70 in the students receiving distance education and 54.96 ± 21.79 in the students receiving hybrid education and there was a statistically significant difference between their total scores (Z=5.380, p=.000). **Conclusion:** The study revealed that the perceived stress scores of the students receiving distance education were higher than those who received hybrid education; the students who considered mobile learning as useful and learning freedom had a lower perception of stress; and as perceived stress levels of the students increased, their professional readiness levels were negatively affected.

Keywords: Perceived Stress, Nursing Students, Hybrid Education, Professional Readiness, Distance Education.

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GİRİŞ

Kısa sürede tüm dünyaya yayılan, ilk kez Çin'in Wuhan kentinde ortaya çıkan Covid-19 şiddetli pnömoni belirtileri nedeniyle günümüze kadar 6.950.655 kişinin ölümüne sebep olmuştur (WHO, 2023). Mart 2020 tarihi itibarıyla Dünya Sağlık Örgütü 114 ülkede görülen ve hızla yayılan bu virüs karşısında pandemi ilan etmiştir (WHO, 2021). Pandeminin ilan edilmesiyle ülkeler ölüm oranlarını düşürmek, bulaşın ilerleme hızını azaltmak ve tedavi çalışmaları için zaman kazanmak amacıyla kendi politikaları çerçevesinde bir dizi önlem almıştır. Türkiye'de Covid-19'la mücadele ile ilgili ilk müdahalelerden birisi eğitime ara verilmesidir. Yüksek Öğretim Kurulu (YÖK) Mart 2020 itibariyle üniversitelerde eğitim-öğretime üç hafta ara verildiğini ve virüsün yayılımını önlemek için 2019-2020 eğitim öğretim döneminde yüz yüze eğitim yapılmayacağını açıklamıştır (YÖK, 2020). Üniversitelerden bazıları 2019-2020 eğitim-öğretim yılı bahar yarıyılında yapılacak olan dersleri bir sonraki sene yapmayı seçerken, bazı üniversiteler ise uzaktan eğitimi destekleyen sistemleri kullanarak öğrencilerin dönem kaybetme ve dolayısıyla mezun olamama gibi mağduriyetlerinin önüne geçmeye çalışmıştır (Kürtüncü & Kurt, 2020). Virüsün yayılımının devam etmesi, aşı çalışmalarının yetersiz kalması ve ölümlerin hız kesmemesi nedeniyle 2020-2021 eğitim öğretim döneminde de üniversiteler arasında faklı eğitim-öğretim uygulamaları gündeme gelmiştir (Vatan, Avdal, Yağcan, & Şanlı, 2020). Bu süreçte bazı üniversiteler tamamen uzaktan eğitime geçmiş, bazı üniversiteler özellikle uygulamalı derslerin yoğunlukta olduğu bölümlerde (tıp, diş hekimliği, hemşirelik) yüz yüze eğitime devam etmiş, bazı üniversitelerde ise hibrit (karma) eğitim uygulanmıştır. Nisan 2020 tarihinde YÖK tarafından hemşirelik bölümü son sınıf öğrencileri için "2019-2020 eğitim yılı bahar dönemiyle sınırlı kalmak şartı ile öğrencilerin uygulama eğitimlerini sıkı kişisel koruyucu önlemler alınmak kaydı ile sağlık kuruluşlarında yapabilecekleri ya da farklı eğitim faaliyetleri (uzaktan öğretim, simülasyon eğitimi, proje, vaka analizi vb.) ile de tamamlayabilecekleri" şeklinde belirtilmiştir (YÖK, 2020).

Hemşirelik eğitimi teorik ve klinik uygulamalardan oluşan bir bütündür ve klinik uygulamalar mezuniyet sonrası mesleki performans için gerekli bilgi, uzmanlık ve gerekli tutuma sahip öğrenciler yetiştirmek için öğrencilere teorik ve klinik öğrenme deneyimlerinin bir kombinasyonunu sağlamayı içerir (HEMED, 2014). Hemşirelik programının başarısı büyük ölçüde etkin klinik deneyime bağlıdır. Klinik uygulamalardan öğrencilerin öğrendikleri bilgileri uygulamaya yansıtma yeteneği kazanmaları ve mesleki hazır oluşun gelişmesi beklenmektedir (İbrahimoğlu, Mersin, & Kılıç, 2019) bu nedenle hemşirelik eğitiminde toplam eğitim süresinin en az üçte biri teorik eğitim, yarısı ise klinik eğitimden oluşmaktadır (HEMED, 2014). Uzaktan eğitim sistemi ülkemizde ilk kez 1993 yılında hemşirelik eğitiminde kullanılmaya başlanmıştır, lisans tamamlama programları eğitimde fırsat eşitliği sunan, örgün eğitimi destekleyen, yaşam boyu öğrenmeyi pekiştiren bir yöntem olarak kullanılmaya devam etmiştir (Şenyuva, 2013). Öğrencilerin hemşirelik bilgi ve becerilerini klinikte birleştirerek mesleki hazıroluşluklarını sağlamak için klinik uygulama süresinin ve uygulamanın niteliğinin yeterli olması gerekmektedir (İbrahimoğlu, Mersin, & Kılıç, 2019). Pandemi sürecinde çok kısa sürede çok fazla hastanın enfekte olması ve hastaların yoğun bakım gereksinimlerinin artması ile hemşirelik bakımının önemi ve dolayısıyla hemşirelik eğitimlerindeki uygulama becerisinin önemi ortaya çıkmıştır. Fakat pandemi süreci, profesyonel hasta bakımı verebilme yeterliliği kazandırmayı amaçlayan hemşirelik uygulama eğitimini derinden etkilemiştir (İlaslan & Demiray, 2021). Özellikle eğitimlerin tamamen uzaktan olması, eğitimcilerin ve öğrencilerin böyle bir süreçle ilk defa karşılaşmış olmaları, hemşirelik eğitiminin en önemli unsurlarından olan temel beceri uygulamalarının nasıl sürdürüleceği konusunda öğrencilerde kaygıya neden olmuştur. Bu araştırmada pandemi süreci nedeni ile hemşirelik eğitiminde kullanılan hibrit ve uzaktan eğitim sitemlerinin hemşirelik öğrencilerinin algıladıkları stres, mesleki hazıroluşluk ve mobil öğrenme tutumları acısından karşılaştırılması amaçlanmıştır.

GEREÇ VE YÖNTEM

Araştırmanın tipi

Tanımlayıcı ve kesitsel olan bu araştırma pandemi sürecinde uzaktan eğitim ve hibrit eğitim yapan farklı üniversitelerin sağlık bilimleri fakültesi hemşirelik bölümü son sınıf öğrencileri ile Mart-Nisan 2021'de gerçekleştirilmiştir.

Araştırmanın evren ve örneklemi

Araştırmada evreni, uzaktan eğitim yapan İç Anadolu Bölgesi'ndeki bir üniversitedeki sağlık bilimleri fakültesi hemşirelik bölümü son sınıf öğrencileri (N=110) ve Ege Bölgesi'nde hibrit eğitim yapan bir üniversitedeki sağlık bilimleri fakültesi hemşirelik bölümü son sınıf öğrencileri (N=155) oluşturmuştur. Araştırmada örneklem seçimine gidilmemiş, araştırmaya katılmaya gönüllü olan tüm öğrencilere ulaşılmaya çalışılmıştır. Uzaktan eğitim alan (n=101) ve hibrit eğitim alan (n=145) toplam 246 öğrenci örneklemi oluşturmuştur (Cevaplanma oranı: %92.83).

Araştırmanın bağımlı ve bağımsız değişkenleri

Araştırmanın bağımsız değişkeni uzaktan eğitim ve hibrit eğitim sistemleri, bağımlı değişkeni ise algılanan stres, mesleki hazır oluş ve mobil öğrenme tutumudur.

Veri toplama araçları

Kişisel Bilgi Formu: Araştırmacılar tarafından hazırlanan ve öğrencilerin kişisel ve klinik deneyimlerine ilişkin bilgilerini belirlemeye yönelik 15 adet sorudan oluşmaktadır.

***Hemşirelik Öğrencileri İçin Algılanan Stres Ölçeği (HÖASÖ*):** Sheu ve arkadaşları tarafından 2002 yılında geliştirilmiştir. Karaca ve arkadaşları tarafından 2015 yılında Türkçe geçerlik ve güvenilirlik çalışması

yapılan ölçek; mesleki bilgi ve beceri eksikliğinden kaynaklanan stres (2, 7, 11. maddeler), ödevlerden ve iş yükünden kaynaklanan stres (3, 9, 13, 17, 21. maddeler), akranlardan ve günlük yaşamdan kaynaklanan stres (22, 24, 28, 29. maddeler), hastaya bakım verirken yaşanan stres (1, 4, 6, 8, 10, 12, 14, 19. maddeler), öğretim elemanları ve hemşirelerden kaynaklanan stres (5, 16, 18, 20, 25, 27. maddeler), ortamdan kaynaklanan stres (15, 23, 26. maddeler) olmak üzere 6 alt boyuttan ve 29 maddeden oluşmaktadır. Cronbach's alfa katsayısı .67-.93 arasında bulunmuştur. Toplam puan, 0-116 arasında değişmektedir. Toplam puan arttıkça algılanan stres düzeyi artmaktadır (Karaca ve ark., 2015). Bu çalışmada ölçeğin Cronbach alfası .94 bulunmuştur.

Hemşirelikte Mesleki Hazır Oluşluk Algısı Ölçeği (HMHÖ): Tarhan ve Yıldırım tarafından 2018 yılında geliştirilen HMHÖ, mesleki uyum (1, 2, 7, 8, 9 maddeler), iletişim ve iş birliği (3, 10, 11,12, 13, 14, 15 maddeler) ve mesleki yeterlilik (4, 5, 6 maddeler) olmak üzere üç alt boyut ve toplam 15 sorudan oluşmaktadır. Beşli likert şeklinde olan ölçekte, olumsuz anlam içeren maddeler yer almamaktadır. Tüm ölçek ve alt boyuttan alınan toplam puanın madde sayısına bölünmesiyle ölçek ve alt boyut puanları hesaplanmaktadır. Tüm ölçek ve her alt boyuttan en düşük 1 puan, en yüksek 5 puan alınabilmektedir. İlgili alt boyuttan alınan puan ortalamasının yüksek olması, öğrencilerin ilgili alt boyuttaki mesleki hazıroluşluk algısının yüksek olduğu şeklinde yorumlanmaktadır. HMHÖ ve alt boyutlarının Cronbach's alfa iç tutarlılık katsayılarının .81-.90 arasında değiştiği belirlenmiştir (Tarhan ve Yıldırım, 2021). Bu çalışmada ölçeğin Cronbach alfası .89 bulunmuştur.

***Mobil Öğrenme Tutum Ölçeği*:** Hemşirelik öğrencilerinin mobil öğrenmeye yönelik tutumlarının belirlenmesi için Çelik (2013) tarafından geliştirilen M-Öğrenme Tutum Ölçeği' nde toplam 21 madde ve 4 faktör bulunmaktadır. Ölçek faktörleri; Öğrenmenin avantajları (1, 2, 3, 4, 5, 6, 7. maddeler), m-öğrenmede sınırlılıklar (8, 9, 10, 11, 12. maddeler), m-öğrenmede kullanışlılık (13, 14, 15, 16, 17. maddeler) ve m-öğrenmede özgürlük (18, 19, 20, 21. maddeler) olarak gruplandırılmıştır. Ölçekten en düşük 21 puan alınırken, en yüksek 105 puan alınmaktadır. Ölçeğin Cronbach's alfası .88 olarak ölçülmüştür. Ölçekteki maddeler "Kesinlikle katılmıyorum-Kesinlikle katılıyorum" şeklinde 5'li likert tipindedir (Çelik, 2013). Bu çalışmada ölçeğin Cronbach alfası .74 bulunmuştur.

İstatistiksel analiz

Verilerin analizi IBM SPSS 20.0 (IBM Corp., Armonk, NY, USA) paket programı ile yapılmış olup normal dağılıma uygunluk testi Kolmogorov Smirnov testi ile değerlendirilmiştir. Veriler normal dağılım göstermediği için gruplar arasındaki farklılıklar Mann Whitney U testi, Kruskal Wallis Tek Yönlü Varyans analizi ve Dunn's çoklu karşılaştırma testi ile test edilmiştir. Değişkenler arasındaki ilişkiler Spearman korelasyon analizi, bağımlı değişken ile bağımsız değişkenler arasındaki ilişki regresyon analizi ile belirlenmiştir.

Araştırmanın etik yönü

Araştırma için bir üniversitenin "Girişimsel Olmayan Araştırmalar Etik Kurulu'ndan" 12.02.2021 karar tarihli ve 2021/ 19 karar no'lu etik kurul onayı alınmıştır. Etik kurul alındıktan sonra çalışmanın uygulanabilmesi için araştırmanın yapılacağı fakültelerin dekanlıklarından da uygulama izni alınmıştır. Ölçeklerin araştırmamızda kullanılması için ölçek sahiplerinden e-posta yolu ile yazılı izin alınmıştır. Araştırmaya gönüllü olarak katılan öğrencilere araştırma ve veri toplama formları hakkında bilgi verilmiş, sözel ve yazılı onamları alınmıştır. Araştırmada Helsinki bildirgesine uyulmuştur.

BULGULAR

Araştırmaya katılan hemşirelik öğrencilerinin tanımlayıcı özelliklerini incelediğimizde; uzaktan eğitim (UE) alan öğrencilerin (n=101) yaş ortalaması 22.33±1.09, hibrit eğitimdeki (HE) öğrencilerin (n=145) ise 22.78±1.43 olup, uzaktan ve hibrit eğitimdeki öğrencilerin çoğunluğunun (HE: %53.1; UE: %77.2) cinsiyeti kadındır. Öğrencilerin çoğunluğu (HE: %97.2; UE: %97) bir işte çalışmamaktadır. Öğrencilerin çoğunluğu (HE: %63.4'ü, UE: %61.4) aldıkları hemşirelik eğitiminden memnun olduklarını ve HE alan öğrencilerin %35.2'sinin, UE alanların ise tümünün kendisini mesleğe hazır hissettiği belirtilmiştir. HE alan öğrencilerin %44.8'sinin, UE alanların ise tamamının aldıkları teorik eğitimi yeterli buldukları, buna karşın her iki gruptaki öğrencilerin çoğunluğunun (HE: %79.3; UE: %73.3) eğitim sürecindeki uygulamayı yeterli bulmadıkları saptanmıştır. Yine her iki gruptaki öğrencilerin çoğunluğunun (HE: %92.4; UE: %100) hemşire olarak çalışmayı düşündükleri ve çoğunluğunun (HE:%51.0; UE:%100) klinikte en çok korku duydukları deneyimin "Yanlış uygulama yapmak" olduğu belirlenmiştir. Uzaktan eğitimde kullandıkları mobil cihazın çoğunlukla telefon olduğu (HE: %44.1; UE: %61.4) ve uzaktan eğitimde en rahatsız eden durumun "verimli olmaması" (HE: %37.2) ve internet sıkıntısı (UE: %39.6) sorunun olduğu saptanmıştır. Ayrıca öğrencilerin büyük çoğunluğunun (HE: %89.0; UE: %88.1) uzaktan eğitimin hemşirelik bölümünün eğitimi için tamamen uygun olmadığı, sadece teorik eğitim için uygun olabileceği görüşünde oldukları belirlenmiştir (Tablo 1).

Tablo 1. Hemşirelik öğrencilerinin tanımlayıcı özelliklerinin dağılımı.

Özellikler	Hibrit eğitim alan öğrenciler		Uzaktan eğitim alan öğrenciler	
	n	%	n	%
Yaş X±SS		**22.78±1.43**		**22.33±1.09**
Cinsiyet				
Kadın	77	53.1	78	77.2
Erkek	68	46.9	23	22.8
Çalışma durumu				
Çalışan	4	2.8	3	3.0
Çalışmayan	141	97.2	98	97.0
Eğitimden memnuniyet				
Memnun	92	63.4	62	61.4
Memnun değil	53	36.6	39	38.6
Mesleğe hazır hissetme durumu				
Evet	51	35.2	101	100.0
Hayır	94	64.8	-	-
Teorik eğitimin yeterliliği				
Yeterli bulan	65	44.8	101	101
Yeterli bulmayan	80	55.2	-	-
Uygulamanın yeterliliği				
Yeterli bulan	30	20.7	27	26.7
Yetersiz bulan	115	79.3	74	73.3
Hemşire olarak çalışmayı düşünme				
Evet	134	92.4	101	100.0
Hayır	11	7.6	-	-
Klinik uygulamada korku duyduğu deneyim				
Yanlış uygulama yapmak	74	51.0	101	10.0
Hastaya zarar vermek	46	31.7	-	-
Bilmediği bir uygulamaya müdahale etmek	16	11.0	-	-
Hasta ile iletişim güçlüğü	9	6.3	-	-
Uzaktan eğitimde kullandığı mobil cihazı				
Telefon	64	44.1	62	61.4
Laptop	52	35.9	13	12.9
Masaüstü bilgisayar	13	9.0	3	3.0
Hepsi	16	11.0	23	22.7
Uzaktan eğitimde rahatsız edici durumlar				
Verimli olmaması	54	37.2	16	15.8
İnternet sıkıntısı	35	24.1	40	39.6
Süre yetersizliği	4	2.8	5	5.0
Sağlık problemine yol açması	4	2.8	1	1.0
Teorik bilgiyi uygulama transfer edememe	-	-	22	21.8
Rahatsız edici durum yok	48	33.1	17	16.8
Uzaktan eğitimin hemşirelik bölümü için uygunluğu				
Uygun	16	11.0	12	11.9
Sadece teorik eğitim için uygun	129	89.0	89	88.1
TOPLAM	**145**	**100.0**	**101**	**100.0**

Tablo 2. de hemşirelik öğrencilerinin uzaktan ya da hibrit eğitim alma durumlarına göre HÖASÖ, HMHÖ ve MÖTÖ' nin alt boyut ve toplam puanları sunulmuştur. Öğrencilerin HÖASÖ' nin tüm alt boyutları ve toplam puanları açısından bakıldığında; uzaktan eğitim alan öğrencilerin algıladıkları stresin hibrit eğitim alan öğrencilerden daha yüksek olduğu ve farkın istatistiksel açıdan anlamlı olduğu (p=0.000) belirlenmiştir. HMHÖ'nin alt boyutları ve toplam puan bakımından uzaktan eğitim (4.03±0.61) ile hibrit eğitim alan öğrencilerin (4.01±0.55) puanları arasında istatistiksel açıdan anlamlı bir farklılık olmadığı (Z=0.135, p=0.893) saptanmıştır. MÖTÖ'nin eğitimde sınırlılıklar alt boyutu puanlarının uzaktan eğitim alan öğrencilerde 16.75±4.85 ve hibrit eğitim alan öğrencilerde ise 15.50±4.83 olduğu, aralarındaki fark istatistiksel olarak anlamlı (Z=4.868, p=0.030) bulunmuştur.

Tablo 2. Hemşirelik öğrencilerinin eğitimlerini uzaktan ve hibrit alma durumlarına göre HÖASÖ, HMHÖ ve MÖTÖ alt boyut ve toplam puanlarının dağılımı.

Ölçekler	Alt Boyutlar	Uzaktan Eğitim	Hibrit Eğitim	Test değeri	p
		X±SS	X ± SS		
HÖASÖ	Mesleki bilgi ve beceri eksikliğinden kaynaklanan stres	7.04±3.13	6.22±2.97	Z=-2.077	**0.038**
	Ödevlerden ve iş yükünden kaynaklanan stres	13.00±4.20	9.44±4.44	Z=-5.900	**0.000**
	Akranlardan ve günlük yaşamdan kaynaklanan stres	8.89±4.07	5.40±3.99	Z=-6.113	**0.000**
	Hastaya bakım verirken yaşanan stres	19.33±7.46	15.68±6.62	Z=-4.043	**0.000**
	Öğretim elemanları ve hemşirelerden kaynaklanan stres	15.19±5.31	12.07±5.02	Z=-4.794	**0.000**
	Ortamdan kaynaklanan stres	7.12±2.98	5.84±2.88	Z=-3.479	**0.000**
	HÖASÖ toplam	**70.60±23.60**	**54.69±21.79**	**Z=-5.380**	**0.000**
HMHÖ	Mesleki uyum	3.69±0.77	3.64±0.67	Z=-0.274	0.784
	İletişim ve iş birliği	4.38±0.62	4.45±0.65	Z=-0.732	0.464
	Mesleki yeterlilik	3.78±0.82	3.57±0.74	Z=-1.674	0.094
	HMHÖ toplam	**4.03±0.61**	**4.01±0.55**	**Z=-0.135**	**0.893**
MÖTÖ	Öğrenmenin avantajları	21.86±6.98	22.32±6.03	Z=-0.740	0.459
	Öğrenmede sınırlılıklar	16.75±4.85	15.50±4.83	Z=-2.167	**0.030**
	Öğrenmede kullanışlılık	16.29±4.91	17.44 ±4.33	Z=-1.699	0.089
	Öğrenmede özgürlük	13.30±3.57	14.02±3.37	Z=-1.509	0.131
	MÖTÖ toplam	**68.21±11.57**	**69.29±10.26**	**Z=-1.064**	**0.287**

Hemşirelik öğrencilerinin algıladıkları stres ile mesleki hazır oluşları ve mobil öğrenme tutumları arasındaki ilişkiyi gösteren korelasyon analizi sonuçları Tablo 3' de yer almaktadır. Hemşirelik öğrencilerinin HÖASÖ, HMHÖ ve MÖTÖ' den aldıkları puanlar arasındaki korelasyon analizinde; HMHÖ toplam puanı ile HÖASÖ tüm alt boyutları arasında negatif yönde kuvvetli ilişki olduğu (p=.000) belirlenmiştir. MÖTÖ ile HÖASÖ toplam ve alt boyutları arasında bir ilişki saptanmamıştır (Tablo3).

Tablo 3. Hemşirelik öğrencilerinin HÖASÖ, HMHÖ VE MÖTÖ arasındaki korelasyon analizi.

HÖASÖ Toplam ve Alt Boyutları	HMHÖ Toplam	MÖTÖ Toplam
Mesleki bilgi ve beceri eksikliğinden kaynaklanan stres	-0.262**	-0.037
Ödevlerden ve iş yükünden kaynaklanan stres	-0.202**	0.036
Akranlardan ve günlük yaşamdan kaynaklanan stres	-0.227**	0.035
Hastaya bakım verirken yaşanan stres	0.316**	0.050
Öğretim elemanları ve hemşirelerden kaynaklanan stres	-0.181**	0.110
Ortamdan kaynaklanan stres	-0.305**	0.100
HÖASÖ toplam	-0.292**	0.073

**p≤0.001.

Tablo 4. Uzaktan ve hibrit eğitim alan hemşirelik öğrencilerinde HÖASÖ, HMHÖ ve MÖTÖ yordayıcı değişkenler.

Değişkenler	HÖASÖ Toplam (β, p)	HMHÖ Toplam (β, p)	MÖTÖ Toplam (β, p)
Eğitim sistemi (1=Uzaktan 2=Hibrit)	-0.328**	0.023	0.049
R Square	0.10	0.004	0.002

**p<0.001.

Tablo 4.'te sunulan regresyon analizi sonuçlarına göre; eğitim sistemi hemşirelik öğrencilerinin algıladıkları stres düzeyini olumsuz ve anlamlı olarak yordamaktadır. Buna göre algılanan stres düzeyindeki varyansın %10'u (R^2 adjusted=0.10) uzaktan eğitim sistemindeki stres düzeyini açıklamaktadır. (β: -0.328, t: -5.432, p=0.000). Ancak eğitim sistemi, hemşirelik öğrencilerinin mesleki hazıroluşlukları ve mobil öğrenme tutumları üzerinde anlamlı düzeyde herhangi bir yordayıcılık oluşturmamıştır.

TARTIŞMA

Pandemi süreci tüm dünyada olduğu gibi Türkiye'de de hemşirelik eğitimini önemli ölçüde etkilemiştir. Bu dönemde tüm teorik ve uygulamalı dersler bazı üniversitelerde uzaktan eğitim kullanılarak, bazı üniversitelerde ise hibrit eğitim kullanılarak yapılmaya çalışılmıştır (Dewart, Corcoran, Thirsk & Petrovic, 2020). Pandemi süreci hemşirelik öğrencilerinin yaşamlarında, fiziksel sağlık konusunda endişeler, izolasyon önlemlerine ilişkin endişeler ve eğitimdeki değişiklikle ilgili kontrol kaybına bağlı olarak stresli bir dönem oluşturmuştur (Majrashi, et al., 2021). Araştırmamızda HE alan öğrencilerin %44.8'sinin, UE alanların ise tamamının aldıkları teorik eğitimi yeterli buldukları, buna karşın her iki gruptaki öğrencilerin çoğunluğunun eğitim sürecindeki uygulamayı yetersiz buldukları saptanmıştır. HE alan öğrencilerin %36.6'sı UE alan öğrencilerin ise %38.6'sı bu süreçte aldıkları eğitimden memnun olmadıklarını bildirmiştir. Ayrıca öğrencilerin büyük çoğunluğunun uzaktan eğitimin hemşirelik eğitimine tamamen uygun olmadığını sadece teorik eğitim için uygun olabileceği görüşünde oldukları belirlenmiştir. Araştırma bulgularımızla paralel olarak Kürtüncü ve Kurt (2020) ve Durgun ve ark.'nın (2021) çalışmasında da hemşirelik eğitiminin teorik ve uygulama derslerinin uzaktan eğitimle gerçekleştirilmesi konusunda öğrencilerin olumsuz düşünceye sahip oldukları belirlenmiştir. Ramos-Morcillo ve ark. (2020) İspanya'daki hemşirelik öğrencilerinin e-öğrenmeye ilişkin deneyimlerini araştırdığı bir çalışmada 1. ve 2. sınıf öğrencileri pandemideki geçici e-öğrenimin eğitimleri üzerinde özel bir etkisinin olmayacağını, buna karşılık 3. ve 4. sınıf öğrencilerinin klasik eğitimdeki klinik uygulamaların hemşirelik uygulamalarına ilişkin yeterlilikleri kazandırmada daha etkili olduğunu ifade etmiş ve 4. sınıf öğrencilerinin bir kısmı, tüm klinik eğitimleri yapmak için daha sonra mezun olmayı tercih ettiklerini belirtmişlerdir. Teorik eğitim ve klinik uygulama hemşirelik eğitiminin ayrılmaz ve birbirini tamamlayan parçalarıdır. Klinik eğitim öğrencilerin mesleki becerileri öğrenmesinde ve profesyonel kimlik kazanımında çok önemlidir (Raines, 2018). Bu bilgiler birlikte değerlendirildiğinde, hemşirelik öğrencilerinin pandemi dönemindeki klinik uygulamalara ilişkin memnuniyetsizliğinin; klinik alanlarda gözlem yapamama, psikomotor becerileri uygulayarak deneyim elde edememe, etkileşim kuramama ve geri bildirim alamamalarından kaynaklandığı düşünülmüştür. Araştırmamızda HE ve UE alan öğrencilerin klinikte çalışmaya başladıklarında en çok korku duydukları deneyimin "Yanlış uygulama yapmak" olduğu belirlenmiştir. Araştırma bulgularımızı destekler nitelikte Köse Tosunöz, Güngör ve Öztuç'un (2021) araştırmasında da ilk kez klinik uygulamaya çıkacak hemşirelik 1.sınıf öğrencilerin klinik uygulamada en çok yaşamaktan korktukları deneyimin "yanlış uygulama yapmak" olduğu bildirilmiştir. Bir önceki bulgumuzla paralel olarak uzaktan eğitim nedeniyle psikomotor beceri kazanmada yetersiz kalan öğrencilerin çalışmaya başladıklarında birçok girişimi ilk kez yapacakları için hata yapmaktan korkması kaçınılmazdır. Araştırmada öğrencilerin uzaktan eğitimde kullandıkları mobil cihazın çoğunlukla telefon olduğu ve uzaktan eğitimde en rahatsız eden durumun "verimli olmaması" (HE: %37.2) ve "internet sıkıntısı" (UE: % 39.6) sorunun olduğu saptanmıştır. Michel ve ark.(2021) Amerika Birleşik Devletinin 5 farklı bölgesindeki hemşirelik öğrencileri ile yaptıkları çalışmada pandemide hemşirelik öğrencilerinin çevrim içi öğrenmeye ilişkin zorluklar yaşadıklarını bunun nedeninin ise uzaktan eğitim için sınırlı internet erişimlerinin olduğu ve bu sınırlı interneti diğer aile bireyleri ile paylaşmak zorunda kaldıklarını, çevrimiçi eğitimlerin yetersiz olduğunu, evde yalnız çalışırken motive olmakta zorlandıklarını ve çok fazla ödev olduğundan iş yüklerinin arttığını ifade etmişlerdir (Michel ve ark., 2021). Kürtüncü ve Kurt (2020)'un pandemi döneminde hemşirelik öğrencilerinin uzaktan eğitim konusunda yaşadıkları sorunları inceledikleri araştırmada da öğrencilerin yaşadıkları yerler ve

sosyoekeonomik nedenlere bağlı internet sıkıntısı çektikleri, var olan interneti evdeki diğer üyelerle paylaşmak zorunda kaldıkları, bazı öğrencilerin ise telefonları ile derslere katılmak zorunda kaldıkları ve verilen ödevleri telefon aracılığı ile yapmakta zorlandıklarını belirtmişlerdir. Uzaktan eğitim, imkânı olan öğrencilere eğitime daha kolay ve yerinden ulaşma fırsatı sağlarken imkanı olmayan ve sosyoekonomik zorluklar yaşayan öğrenciler için eğitimler esnasında derslere ulaşmada stresör kaynağı olmuştur. Tüm bu stresörlerle mücadele etmek zorunda kalan öğrencilerin uzaktan eğitim sistemini "verimli değil" şeklinde değerlendirmesi beklenen bir sonuçtur. Çalışmamızda hemşirelik öğrencilerinin uzaktan ya da hibrit eğitim alma durumlarına göre HÖASÖ'nin tüm alt boyutları ve toplam puanları karşılaştırıldığında; UE alan öğrencilerin algıladıkları stresin HE alan öğrencilerden daha yüksek olduğu belirlenmiştir. Pandemi öncesi hemşirelik öğrencilerinde aynı ölçeği kullanan araştırmalar incelendiğinde; pandemi öncesi hemşirelik öğrencilerinin algıladıkları stresin daha az olduğu belirlenmiştir (Ergin ve ark.,2018; Hançer Topal ve ark., 2019). Bu bulgular pandemi ile algılanan stresin arttığı yönünde yorumlanabilir. Literatürdeki araştırmalar hemşirelik öğrencilerinin Covid-19 pozitif hasta bireylere bakım verme, klinik uygulamalardaki yetersizliklere bağlı özgüven eksikliği, öğretim elemanlarından yetersiz destek, diğer sağlık profesyonelleri ile iletişim sorunları ve pandemi sürecinde yaşanan sıra dışı birçok yeni gelişmenin öğrencilerin stres düzeylerini arttırmış olabileceğini öngörmektedir (Arslan&Pekince, 2020; Rohmani & Andriani, 2021). Hemşirelik öğrencilerinin uzaktan ya da hibrit eğitim alma durumlarına göre HMHÖ'nin tüm alt boyutları ve toplam puanları açısından bakıldığında, istatistiksel açıdan anlamlı farklılık olmadığı belirlenmiştir. Araştırmaya katılan her iki gruptaki öğrencilerin mesleki hazıroluşluklarının yüksek olduğu tespit edilmiştir. Literatürde farklı ülkelerde yapılan araştırmalarda son sınıf hemşirelik öğrencilerinin mesleki hazıroluşluk algılarının yüksek ya da orta düzeyde olduğunu göstermektedir (Jamieson et al., 2019; Leufer and Cleary-Holdforth, 2020). Pandemi öncesi aynı ölçeğin kullanıldığı bir başka çalışmada ise hemşirelik öğrencilerinin mesleki hazıroluşluklarının daha yüksek olduğu belirlenmiştir (Tarhan &Yıldırım, 2021). Pandemi süreci ile son sınıf öğrencilerinin klinik uygulama eğitimlerinin yetersizliği öğrencilerde yanlış uygulama yapma endişesi nedeniyle hastaya zarar vereceği kaygısını ortaya çıkardığı ve mesleki hazıroluşluğu pandemi öncesine göre olumsuz etkilediği düşünülmüştür.

MÖTÖ'nin eğitimde sınırlılıklar alt boyut puanlarının uzaktan eğitim alan öğrencilerin hibrit eğitim alan öğrencilere göre yüksek olduğu belirlendi. Hibrit eğitim alan öğrencilerin teorik dersleri uzaktan fakat klinik uygulamaları yüz yüze yaptıkları düşünüldüğünde farkın uzaktan eğitim alan öğrencilerin özellikle klinik eğitimde mobil öğrenmenin sınırlılık yarattığını düşünmüş olabileceğinden, aynı zamanda pandemi sürecinin beklenmedik bir şekilde ortaya çıkması, virüsün yayılımını önlemeye yönelik eğitimde alınan önlemlerin hızlı bir şekilde gerçekleşmesi hem öğrencilerin hem akademisyenlerin hem de üniversitelerin mobil öğrenme alt yapılarının hazır olmamasına bağlı olduğu ve bunun öğrenciler acısından bir sınırlılık olarak değerlendirildiği düşünülmüştür. Literatürde mobil öğrenmede öğrencilerin hazırbulunuşluğunun önemli olduğu vurgulanmaktadır. Özkütük ve ark.'nın (2021) pandemi öncesi dönemde hemşirelik öğrencileri ile yaptıkları bir araştırmada öğrencilerin m-öğrenmeye hazır bulunuşluk seviyeleri yüksek olmasına rağmen, yüz yüze eğitimi (%87.9'unun) m-öğrenmeye (%12.1'inin) göre daha fazla tercih ettikleri bulunmuştur. M-öğrenme araçları, iş ve akademik hayatımızın yanı sıra günlük hayatımızın da önemli bir parçası olmasına rağmen e-öğrenmenin dayatılmasının, e-öğrenme platformlarının kullanım zorluğunun, kırsal alanlarda yaşayanlar ile aile sorumlulukları olan, sınırlı elektronik kaynaklara ve internet erişimine sahip olanlar için uzaktan eğitimin sınırlamalar getirdiği bildirilmiştir (Kürtüncü ve Kurt, 2020; Şenyuva, 2013; Durgun ve ark., 2021; Fogg et al., 2020; Keskin ve Kaya, 2021).

SONUÇ

Araştırma bulgularına göre, uzaktan eğitim alan hemşirelik öğrencilerinin hibrit eğitim alan hemşirelik öğrencilere göre algıladıkları stresin daha yüksek olduğu ve eğitim sistemlerinin hemşirelik öğrencilerinin algıladıkları stres düzeyini olumsuz ve anlamlı olarak yordadığı, her iki gruptaki öğrencilerin mesleki hazıroluşluklarının yüksek ve benzer olduğu, uzaktan eğitim alan öğrencilerin mobil öğrenmeyi bir sınırlılık olarak gördüğü belirlenmiştir. Bu araştırmada hemşirelik son sınıf öğrencilerinin mesleğe hazırlık aşamasında değişen eğitim sistemleri nedeniyle yaşadıkları zorluklar ve stres düzeylerine dikkat çekilmiştir. Hemşirelik eğitiminde pandemi gibi olumsuz koşullara hazırlıklı olmak açısından gelecek online eğitimler için beceri geliştirme videolarının hazırlanması, izlenilmesi, vaka tartışması ve kahoot, edpuzzle, google classroom gibi interaktif programların kullanılması, uygulama laboratuvarlarında daha küçük gruplarla gerekli önlemler alınarak yüz yüze eğitimlerin uygun şekillerde entegre edilerek eğitim müfredatının aksatılmadan sürdürülmesi önerilmektedir. Pandemi sürecinde uzaktan eğitim alan ve klinik eğitimleri aksayan öğrenciler için hem akademisyenlerin hem de çalışmaya başladıkları kurumların bu hemşirelere yönelik destekleyici çalışmalar planlaması önemlidir. Bu eğitimler planlanırken dış paydaş görüşü bağlamında; klinik hemşirelerin görüş ve deneyimlerinden yararlanılması önerilmektedir.

Teşekkür
Yazarlar araştırmaya katılan Muğla Sıtkı Koçman Üniversitesi Fethiye Sağlık Bilimleri Fakültesi ve Çankırı Karatekin Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü son sınıf öğrencilerine teşekkür etmektedir.

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Yazarlar, bu makalenin araştırılması, yazarlığı ve/veya yayınlanması ile ilgili olarak herhangi bir potansiyel çıkar çatışması beyan etmemiştir.

Yazar Katkıları
Plan, tasarım: PÇÖ; **Gereç, yöntem ve veri toplama:** PÇÖ, SD, TY; **Analiz ve yorum:** SD, TY; **Yazım ve eleştirel değerlendirme:** PÇÖ, SD, TY

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Genç Kadınların Menstrual Deneyimleri ile Depresyon, Anksiyete ve Stres Düzeylerinin Karşılaştırılması

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ÖZ

Amaç: Bu çalışma genç kadınların menstruasyon döneminde deneyimleri ile depresyon, anksiyete ve stres düzeylerinin karşılaştırılması amacıyla tanımlayıcı karşılaştırmalı tipte tasarlanmıştır. **Gereç ve Yöntem:** Araştırmanın evrenini İstanbul'da bir vakıf üniversitesine bağlı meslek yüksekokulunda eğitim gören birinci sınıf kız öğrenciler (N=857) oluşturmaktadır. Araştırmada, örneklem seçimine gidilmemiş, dahil edilme kriterlerine uyan ve çalışmaya katılmaya gönüllü 361 öğrenci ile çalışma yürütülmüştür. Veriler Google form aracılığıyla katılımcı bilgi formu, "Menstrual Deneyimler Ölçeği" ve "Depresyon, Anksiyete ve Stres Ölçeği Kısa Formu" araçları kullanılarak toplanmıştır. Formlar hazırlanırken her bir soru gerekli olarak işaretlendiğinden katılımcının soruları gözden kaçırma olasılığının önüne geçilmiştir. **Bulgular:** Katılımcıların ortalama yaşı 19.30±2.11, menarş yaşı ortalama 13.18±1.36, BKİ ortalama 22.24±10.06 olduğu, %89.2'sinin menstruasyon sırasında ağrı yaşadığı, %39,1'inin menstruasyon sırasında yaşadığı ağrı nedeniyle okula gidemediği, %59.6'sının menstruasyon ağrısı için ağrı kesici ilaç kullandığı belirlendi. DASS skorları ve "Depresyon" ve "Stres" alt boyut puanlarının MDÖ "Malzeme güvenilirliği endişesi" alt boyutu ile pozitif yönde anlamlı bir ilişki olduğu belirlendi. Ayrıca katılımcıların MDÖ toplam ortalama puanı 2.23±0.38, DASS-21 toplam ortalama puanı 32.12±14.98 olduğu belirlendi. **Sonuç:** Sonuç olarak genç kadınların menstruasyon döneminde malzeme güvenilirliği endişesi yaşadıkları ve bunun depresyon ve stres skorları ile ilişkili olduğu belirlendi. Genç kadınların menstrual sürecin yönetimi ile ilgili ihtiyaçlarının eğitim ve danışmanlıkların yanı sıra kamusal stratejilerin belirlenmesi gerekmektedir.
Anahtar Kelimeler: Menstruasyon, Depresyon, Anksiyete, Stres, Kadın Sağlığı.

Comparison of Menstrual Experiences of Young Women with Depression, Anxiety and Stress Levels

ABSTRACT

Objective: This study was designed as a descriptive comparative type in order to compare the experiences of young women during menstruation with their depression, anxiety and stress levels. **Material and Methods:** The universe of the research consists of first-year female students (N=857) studying at a foundation university in Istanbul. In the study, no sample selection was made, the study was conducted with 361 students who met the inclusion criteria and volunteered to participate in the study. Data were collected using the participant information form, "Menstrual Experiences Scale" and "Depression, Anxiety and Stress Scale Short Form" tools via Google form. As each question was marked as necessary while the forms were being prepared, the possibility of the participant to overlook the questions was prevented. **Results:** The mean age of the participants was 19.30±2.11, the mean age of menarche was 13.18±1.36, the mean BMI was 22.24±10.06, 89.2% had pain during menstruation, 39.1% It was determined that they could not go to school because of the pain they experienced during menstruation, and 59,6% of them used pain medication for menstruation pain. It was determined that the DASS scores and the "Depression" and "Stress" sub-dimension scores were positively and significantly correlated with the MDS "Material reliability concern" sub-dimension. In addition, the participants' MDS total mean score was 2.23±0.38, and DASS-21 total mean score was 32.12±14.98. **Conclusion:** As a result, it was determined that young girls experienced material safety concerns during menstruation and this was associated with depression and stress scores. In addition to training and counseling, the needs of young girls regarding the management of the menstrual process should be determined by public strategies.
Keywords: Menstruation, Depression, Anxiety, Stress, Women's Health.

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GİRİŞ

Menarş, kadın hayatında üreme evresinin başlangıcını işaret ettiği için önemli bir biyolojik dönüm noktasıdır. Menstruasyon menarşla beraber başlayan ve periyodlarla devam eden, bir kadının yaşam döngüsünde özel dikkat gerektiren bir dönem olarak kabul edilir. Menstrual döngünün üç fazı vardır: foliküler faz (proliferatif), yumurtlama fazı ve luteal faz (sekretuar). Menstruasyon hormonlar tarafından düzenlenir; bu süreçte rahim iç zarı olan endometrium giderek kalınlaşıp dökülerek normalde 3-5 gün, bazen 7 güne kadar çıkan kanamalara neden olur. Menstrual kanama, mukus ve vajinal salgılar da içerir (Kaur ve ark., 2018).

Menstruasyon ve menstrual dönem her ne kadar fizyolojik bir olay olsa da bu dönemde yaşanan problemler kadın yaşamının önemli bir bölümünü etkiler. İlk menstruuasyon hakkındaki bilgiler ve premenstrüel faz sürecindeki tecrübeler, menstrüasyona karşı tutumu belirlemektedir. Reprodüktif çağda periyodik olarak her ay tekrarlayan menstrüasyon ve menstrüel dönem kadın yaşamının önemli bir bölümünü (30-35 yılını) etkilemektedir Üreme çağındaki kadınların %70-90'ında menstruasyona bağlı bazı semptomlar vardır. Dismenore, amenore ve premenstrüel sendrom bu problemlerin en başta gelenleridir (American College Obstetric Gynecology (ACOG), 2015). Kadınların menstruasyona ilişkin tutumlarını bireysel bilgiler, yaş, deneyimler, mitler, gelenekler, sosyal ve kültürel inançlar etkilemektedir (Sánchez-Borrego ve García-Calvo, 2008). 14-17 yaş grubundaki kız öğrenciler ile yapılan bir çalışmada, ilk menstrual deneyimini olumsuz olarak değerlendiren bireylerin büyük çoğunluğunun menstruasyona ilişkin sonraki görüşlerinin de olumsuz olduğu, daha önce menarşa ilişkin bilgi alanların ilk deneyim ve sonraki tutumlarının olumlu olduğu bulunmuştur (Akbaş ve Sanberk, 2012). Ilk menstruasyon deneyiminde kültürel ve dini faktörlere ek annenin verdiği tepki kadınların menstruasyon tutumunda etkili olabilmektedir. Premestrual değişimler ve menstruasyona yönelik tutumlar birbiriyle yakından ilişkilidir. Türkiye'de yapılan bir çalışmada, premenstrual sendrom yaşamayan kadınların menstruasyonu daha fazla doğal bir olay olarak gördükleri saptanmıştır (Sönmezer ve Yosmaoğlu, 2014). Menstruasyon, Hong Kong, Çin ve Hindistan gibi bazı Asya ülkelerinde doğal bir olay olarak algılanmaktadır. Bu ülkelerdeki kadınlarda premenstrual dönemde vücutta su tutulumu, ağrı, yorgunluk ve soğuk algınlığı gibi semptomlar artmasına rağmen, olumsuz duygusal değişimleri daha az yaşadıkları belirtilmektedir (Hoerster, Chrisler ve Rose, 2003). Menstruasyon döneminde hijyen yönetimini kolaylaştıran üç temel faktör vardır, bunlar kişisel bilgi, malzeme/materyal ve sosyal çevredir. Çeşitli sosyokültürel faktörlerin etkisi ve menstruasyon fizyolojisi tam bilinmediği için menstruasyon döneminde bilinçsizce doğru ya da yanlış uygulamalar yapılabilmektedir. En temel bilgi, menstruasyonda emici hijyenik bir ped kullanılması ve pedlerin üç-dört saatte bir, günde altı-sekiz kez değiştirilmesi gerektiğidir (Upashe, Tekelab ve Mekonnen, 2015). Dolayısıyla kadınlar, menstruasyon döneminde ev, iş ve okul gibi pek çok ortamda pedlerini değiştirmeye gereksinim duymaktadır (Hennegan ve Montgomery, 2016). Kalabalık ortamlarda ortak banyo ve tuvalet kullanımı, hijyen sağlamada suyunun temizliği ve ortak kullanım alanlarının uygun şekilde temizlenmemesi önemli çevresel faktörlerdendir. Tüm bunlara ek olarak toplumda menstruasyonun tabu olarak görülmesi ve kadınların "kirli" olarak etiketlenmesi, bazı kültürlerde inzivaya zorlanması ya da okula gönderilmemesi, yemek pişirmeme gibi günlük aktivitelerin bazılarına katılamaması da menstruasyon hijyenini yönetebilmeyi zorlaştırmaktadır (Dündar ve Özsoy, 2018). Özellikle düşük ve orta gelirli ülkelerde genç kadınlar arasında kötü adet hijyeni uygulamaları yaygındır. Okulların yetersiz altyapısı ve sınırlı kaynakları nedeniyle okullarda yeterli ve uygun su, sanitasyon ve hijyene erişimde sıklıkla zorluklar yaşanmaktadır. Nitekim özellikle genç kadınların menstruasyon hijyenini sağlamayla ilgili birtakım ihtiyaçları karşılamak için yaptıkları uygulamalar üreme sağlığına direk etkisi olduğu için distres kaynağı olarak ortaya çıkmaktadır (Kaur ve ark., 2018).

Menstruasyon döneminin sağlıklı yönetimi, kadınları sadece fiziksel olarak değil psiko-sosyal açıdan da olumlu etkilemektedir. Nitekim kadınların yaşamlarının büyük bir kısmında menstruasyon devam etmektedir. Bu süreçte yeterli bilgi, yeterli malzeme/materyale sahip olma ve yeterli psiko-sosyal destek üreme sağlığını olumlu yönde etkileyecektir (Dündar ve Özsoy, 2018). Menstrual sağlık kavramı menstrual ürünlere ulaşma, hijyenik menstrual uygulamaları sürdürme ve gerektiğinde rahatça doktora gitme gibi durumları içermektedir (Mostafa, 2019).

Altıntaş ve arkadaşları (2020) çalışmasında öğrencilerin menstruasyonu doğal bir olgu olarak görmesinin menstrual hijyen davranışlarını olumlu etkilediği bulunmuştur. Bu doğrultuda ilk deneyimden itibaren menstruasyonla ilgili kazandırılacak olumlu tutumların, kadınların tüm hayat dönemlerinde genel sağlık durumunu olumlu yönde etkileyeceği düşünülmektedir. Uganda'da genç kadınların menstruasyon deneyimleri ile ilgili yapılan çalışmada, katılımcıların %58,6'sının bir sonraki menstruasyon dönemi için endişeli oldukları bildirilmiştir. Menstrual anksiyete düzeyi; annesiyle birlikte yaşamayanlarda, menstruasyon döneminde egzersiz yapma, bisiklete binme gibi menstrual mitlere inananlarda (kirli olduğunu kabul etmesiyle ilgili), menstruasyona yönelik diğer kadınlarla konuşmaktan çekinenlerde, diğer bireylerin menstruasyon hakkında kendisiyle dalga geçtiğini düşünen ve alay konusu olmaktan endişelenenlerde daha fazla bulunmuştur (Tanton ve ark., 2021).

Ekici ve arkadaşları (2017) premenstrual belirtiler açısından olumsuz etkilenen kadınlarda anksiyete ve depresyon bulgularının daha fazla olduğunu ortaya çıkarmıştır. Benzer şekilde Özcan ve Subaşı (2013), premenstrual sendrom yaşayan kadınların sendromun şiddeti ile anksiyete, somatizasyon, obsesif kompulsif davranışlar, kişilerarası duyarlılık, depresyon, öfke, düşmanlık, fobik kaygı, paranoyak düşünceler ve psikotizm gibi alt boyutları olan psikolojik belirti ölçeği puanlarının arttığı bildirilmiştir. Literatür incelemesi sonucunda premenstrual ve menstrual dönemde menstruasyon yönetiminde ağrı, hijyen, üreme sağlığı sorunları, premenstrual semptomlar ve ilişkili psikolojik sorunlar ele alınmıştır. Literatürde menstrual periyodda hijyen yönetiminin ergenler arasında utanç, stres ve anksiyete ile

ilişkili olduğu belirtilmekle beraber depresyon gibi yaygın ruh sağlığı bozuklukları ile ilişkisi hakkında sınırlı veri vardır (Nabwera ve ark., 2021; Hennegan ve ark., 2016). Ancak ülkemizde yapılan çalışmalarda menstruasyon döneminde kullanılan hijyenik malzemelerin rahatlığı, uygunluğu, evde, okulda ve farklı ortamlarda malzeme güvenirliği, değişim sırasında yaşanılan kaygı ve bu konuda yaşanılan stres ve endişeye odaklanan bir çalışma bulunmamaktadır. Bu nedenle mevcut çalışma genç kadınların menstruasyon sırasında malzeme ve hijyen ortamları ile ilgili yaşanılan deneyimlerin stres ve anksiyete ile ilişkisini incelemeye odaklanmıştır.

GEREÇ VE YÖNTEM

Araştırmanın tipi

Bu araştırma genç kadınların menstruasyon döneminde deneyimleri ile depresyon, anksiyete ve stres düzeylerinin karşılaştırılması amacıyla tanımlayıcı karşılaştırmalı tipte tasarlanmıştır.

Araştırmanın evreni ve örneklemi

Araştırmanın evrenini İstanbul'da bir vakıf üniversitesine bağlı meslek yüksek okulunda eğitim gören birinci sınıf kız öğrenciler (N=857) oluşturmaktadır. Araştırmada, dahil edilme kriterlerine uyan (üniversiteye kayıtlı öğrenci olma, cinsiyetinin kadın olması, araştırmaya gönüllü olarak katılma) Google form linklerinin ulaştırılabildiği öğrencilerden çalışmaya katılmayı kabul etmeyen 58 öğrenci çalışma dışı bırakılarak, gönüllülük onamını onaylayan 361 öğrenci ile çalışma yürütülmüştür. Çalışma sonucunda korelasyon sonuçları temel alınarak yapılan post hoc (G* Power 3.1) analizinde 0,3 etki büyüklüğü, 0,05 hata payı ile 361 veri ile çalışmanın gücü 0,99 olarak hesaplanmıştır. Araştırmanın bağımlı değişkenleri Menstrual Deneyimler Ölçeği ve Depresyon, Anksiyete ve Stres Ölçeği Kısa Formu toplam ve alt boyutlarının puan ortalamasıdır. Bağımsız değişkenlerini ise katılımcıların sosyo-demografik özellikleri ve menstrual döneme ilişkin özellikleri oluşturmaktadır.

Veri toplama araçları

Veriler Google form aracılığıyla katılımcı bilgi formu, "Menstrual Deneyimler Ölçeği" ve "Depresyon, Anksiyete ve Stres Ölçeği Kısa Formu" araçları kullanılarak toplanmıştır. Formlar hazırlanırken her bir soru gerekli olarak işaretlendiğinden katılımcının soruları gözden kaçırma olasılığının önüne geçilmiştir.

Katılımcı Bilgi Formu katılımcıların sosyodemografik ve menstrual özelliklerine ilişkin bilgilerinin olduğu, araştırmacıların literatür bilgileri doğrultusunda hazırladığı 20 sorudan oluşmaktadır.

Menstrual Deneyimler Ölçeği (MDÖ) Hennegan ve arkadaşları (2020) tarafından geliştirilmiştir (Hennegan vd., 2020). MDÖ'nin Türkçe geçerlilik güvenirliği Irmak Vural ve Varışoğlu (2021) tarafından yapılmıştır. Bu ölçeğin 4 alt boyutu bulunmaktadır, bunlar; 1-Malzeme ve ev ortamı ihtiyaçları (1,2,3,4,10,11,12,13,16,17,18. maddeler), 2-Taşıma ve okul ortamı ihtiyaçları (8,9,23,24,25. maddeler), 3-Malzeme güvenilirliği endişeleri (5,6,7. maddeler), 4-Değiştirme ve imha güvensizliği (14,15,19,20,21,22,26,27. maddeler) olarak belirlenmiştir. Dörtlü (4'lü) likert tipi ölçekte puanlama; asla = 0, bazen = 1, sık sık = 2 ve her zaman = 3 pozitif olarak kodlanmış maddeler için ve negatif olarak kodlanmış maddeler için ters hesaplanmaktadır. "Malzeme güvenilirliği endişeleri" ve "Değiştirme ve imha güvensizliği" alt boyutlarının içerdiği maddeler ters hesaplanmaktadır. Ölçekten alınan yüksek puanlar daha olumlu menstrual deneyimleri temsil etmektedir. MDÖ orijinal formunda Cronbach alfa değeri 0,77, Türkçe formunun Cronbach alfa değeri ise 0,78 olarak belirtilmiştir (Hennegan vd., 2020; Irmak Vural ve Varışoğlu, 2021). Bu çalışmada Cronbach alpha değeri 0.857 olarak saptanmıştır.

Depresyon, Anksiyete ve Stres Ölçeği Kısa Formu (DAS-21) Lovibond ve Lovibond tarafından DAS-42'nin kısaltılmasıyla oluşturulmuştur (Lovibond ve Lovibond, 1995). DAS-21 ölçeğinin normal ve klinik örneklemde Türkçe versiyonun psikometrik özellikleri Sarıçam tarafından yapılmıştır (Sarıçam, 2018). Bu ölçek 4'lü Likert tipi ölçek olup "depresyon, stres ve anksiyete boyutlarını" ölçen yedişer sorudan oluşmaktadır. Bireyin depresyon alt boyutundan 5 puan ve üzeri, anksiyeteden 4 puan ve üzeri, stresten 8 puan ve üzeri alması ilgili probleme sahip olduğunu göstermektedir. Türkçe geçerlik güvenirliğinde Cronbach alfa değeri depresyon alt boyutu için 0.85, anksiyete alt boyutu için 0.80 ve stres alt boyutu için 0.77 olarak bulunmuştur (Sarıçam, 2018). Bu çalışmada Cronbach alfa değeri depresyon alt boyutu için 0.873, anksiyete alt boyutu için 0.818 ve stres alt boyutu için 0.834 olarak saptanmıştır.

Araştırmanın yeri ve zamanı

Veriler gerekli izinler alındıktan sonra 10 Ocak-15 Şubat 2022 tarihlerinde Google form aracılığıyla katılımcı bilgi formu, MDÖ ve DAS-21 araçları kullanılarak toplanmıştır. Formlar hazırlanırken her bir soru gerekli olarak işaretlendiğinden katılımcının soruları gözden kaçırma olasılığının önüne geçilmiştir.

İstatistiksel analiz

Google form aracılığıyla elektronik tabloya kaydedilen veriler SPSS Versiyon 25'e aktarılmıştır. İlk olarak, tanımlayıcı istatistiklerde sayı, yüzde, ortalama, standart sapma kullanılarak sosyo-demografik özellikler analiz edilmiştir. Bağımlı değişken (MDÖ ve DAS-21 ölçeği puanları) ile bağımsız değişkenlerin her birinin (düzenli egzersiz yapma, sigara kullanma durumu, beden kitle indeksi (BKİ) ve menstrual ağrı yaşama durumu) ikili karşılaştırmaları ikili gruplarda bağımsız t testi, çoklu gruplarda Kruskal Wallis testleri kullanılarak analiz edilmiştir. MDÖ ve DAS-21 ölçekleri ve alt boyutları arasındaki ilişkiyi incelemek üzere Pearson Korelasyon analizi kullanılmıştır. Anlamlılık düzeyi $p<0.05$ olarak kabul edilmiştir.

Araştırmanın etik yönü

Araştırmaya başlarken İstanbul Medipol Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulundan etik izin alınmıştır (E-10840098-772.02-105/03). Bu çalışma COVID-19 pandemi döneminde yapılmış olup, sosyal mesafe kuralları göze alınarak verilerin toplanması için Google form linki kullanılmıştır. Katılımcıların araştırmaya katılımlarına ilişkin onam formu çevrimiçi anket aracına dahil edilmiştir. Çalışmanın amacı Google anket formunda açıklanmıştır. Ankette cep telefonu numarası, e-posta adresi ve adı gibi kişisel bilgiler sorulmamıştır. Ayrıca katılımcılar çalışmaya katılımlarından dolayı herhangi bir risk olmayacağı,

toplanan bilgilerin gizliliğinin korunacağı, istedikleri zaman katılımlarını reddetme veya geri alma hakkına sahip oldukları ve reddetmeleri nedeniyle kendilerine herhangi bir zarar veremeyeceği konusunda bilgilendirilmiştir.

BULGULAR

Katılımcı öğrencilerin ortalama yaşı 19.30±2.11, menarş yaşı ortalama 13.18±1.36, BKİ ortalama 22.24±10.06 olduğu, %89.2'sinin menstruasyon sırasında ağrı yaşadığı, %39.1'inin menstruasyon sırasında yaşadığı ağrı nedeniyle okula gidemediği, %59.6'sının menstruasyon ağrısı için ağrı kesici ilaç kullandığı belirlendi. Öğrencilerin büyük çoğunluğu menstruasyon öncesi bilgi edinmişti ve ailesinde menstruasyon ağrısı yaşayan abla/kız kardeş ve/veya anne sorulduğunda %39.5'i evet cevabı verdi. Ayrıca öğrencilerin yaklaşık 1/5'inin düzenli egzersiz yaptığı ve 1/3'ünün düzenli beslendiği saptandı (Tablo 1).

Tablo 1. Katılımcıların sosyodemografik ve menstrual özellikleri.

Özellikler	**X±SS**	**Özellikler**	**X±SS**
Yaş	19.30±2.11	**Kilo (kg)**	59.35±28.19
Menarş yaşı	13.18±1.36	**Boy (cm)**	163.68±5.77
Menstruasyon süresi (gün)	5.96±1.49	**BKİ (kg/m²)**	22.24±10.06
Menstruasyon sırasında ağrı yaşama	**n(%)**	**Düzenli egzersiz**	**n(%)**
Evet	322(89.2)	Evet	74(20.5)
Hayır	39(10.8)	Hayır	287(79.5)
Menstrual ağrı okula gitmeye engel mi?		**Düzenli beslenme**	
Evet	141(39.1)	Evet	128(35.5)
Hayır	220(60.9)	Hayır	233(64.5)
Ağrı kesici kullanma		**Sigara kullanımı**	
Evet	215(59.6)	Evet	78(21.6)
Hayır	146(40.4)	Hayır	283(78.4)
Ailede menstrual ağrı yaşayan var mı?		**Menstruasyon öncesi bilgi alma**	
Evet	139(39.5)	Evet	303(83.9)
Hayır	222(60.5)	Hayır	58(16.1)
Menstrual ağrı süresi		**BKİ (kg/m²)**	
İlk gün	188(52.1)	Zayıf (<18.9)	79(21.9)
2 ve 3. günlerde	155(42.9)	Normal (19-24.9)	218(60.4)
4. gün ve üzeri	18(5.0)	Hafif şişman (25-29.9)	48(13.3)
		Obez (30-34.9)	16(4.4)

X=Ortalama, SS=Standart sapma, BKİ=Beden kitle indeksi.

Tablo 2'de öğrencilerin MDÖ ve DAS-21 puanları verilmiştir. Buna göre MDÖ toplam ortalama puanı 2.23±0.38, DAS-21 toplam ortalama puanı 32.12±14.98 olduğu belirtilmiştir. Katılımcıların düzenli egzersiz yapma, sigara kullanma durumu, BKİ ve menstrual ağrı yaşama durumu ile MDÖ ve DASS ölçeğinden aldıkları puanların karşılaştırması Tablo 3'te yer almaktadır. Menstrual periyodda ağrı yaşama durumu MDÖ'nin toplam puanı "Malzeme güvenirliği endişesi" ve "Değiştirme ve imha güvensizliği" alt boyutları puanlarını daha olumlu etkilendiği saptanmıştır. Yani menstrual periyodda ağrı yaşayan öğrencilerin yaşamayanlara göre daha olumlu bir tutuma sahip olduğu belirlendi ($p<0.05$). Menstrual periyodda ağrı yaşayan öğrencilerin DAS-21 puanları incelendiğinde "depresyon" alt boyut ortalama puanının ağrı yaşamayan öğrencilere göre daha yüksek olduğu ve bu farkın istatistiksel olarak anlamlı bulunduğu belirlendi (Tablo 3).

Öğrencilerin düzenli egzersiz yapma durumuna göre MDÖ ve DAS-21 genel ölçek ve alt boyutlarının ortalama puanları karşılaştırıldığında istatistiksel olarak bir fark bulunmadı. Sigara içme durumuna göre MDÖ ve DAS-2 ortalama puanları incelendiğinde ise MDÖ "Malzeme ve ev ortamı ihtiyaçları" alt boyutunda sigara içenlerin daha olumsuz tutuma sahip olduğu belirlendi. Diğer alt boyutlar ve DAS-21 ortalama puanları sigara içme durumuna göre benzer olarak saptandı ($p>0.05$) (Tablo 3). BKİ düzeylerine göre öğrencilerin MDÖ ve DAS-21 genel ölçek ve alt boyutlarının ortalama puanları incelendiğinde obez öğrencilerin zayıf, normal ve hafif şişman kategorisindeki öğrencilere göre DAS-21 ortalama puanlarının daha yüksek olduğu bulundu ancak aradaki farkı istatistiksel olarak anlamlı değildi ($p>0.05$). BKİ düzeylerine göre öğrencilerin MDÖ ve DASS ortalama puanlarının benzer olduğu belirlendi (Tablo 3).

Tablo 2. Katılımcıların MDÖ ve DAS-21 ölçek puanları.

MDÖ toplam ve alt boyutları	**X±SS**	**Min-Max**
Malzeme ve Ev Ortamı İhtiyaçları	2.53±0.24	1.45-3.0
Taşıma ve Okul Ortamı İhtiyaçları	2.22±0.60	0.20-3.0
Malzeme Güvenilirliği Endişeleri	1.64±0.74	0-3.0
Değiştirme ve İmha Güvensizliği	2.52±0.45	0.67-3.0
Toplam	2.23±0.38	1.24-2.93
DAS-21 Toplam ve Alt Boyutları		
Depresyon Boyutu	10.96±6.19	0-7.0
Anksiyete Boyutu	9.55±5.58	0-7.0
Stres Boyutu	11.66±5.55	0-7.0
Toplam	32.12±14.98	0-21.0

SS=Standart sapma, Min=minimum, Max=maximum

Tablo 3. Katılımcıların bazı özelliklerine göre MDÖ ve DAS-21 toplam ve alt boyut ortalama puanlarının karşılaştırılması.

	MDÖ					**DASS-21**			
Özellikler	**1. Boyut**	**2. Boyut**	**3. Boyut**	**4. Boyut**	**Toplam**	**Depresyon**	**Anksiyete**	**Stres**	**Toplam**
	X±SS	**X±SS**	**X±SS**	**X±SS**	**X±SS**	**X±SS**	**X±SS**	**X±SS**	**X±SS**
Menstrual Ağrı (n)									
Evet (322)	2.52±0.24	2.23±0.60	1.67±0.73	2.54±0.44	2.24±0.38	11.81±5.99	9.82±5.82	11.53±5.68	32.56±14.88
Hayır (39)	2.54±0.27	2.21±0.63	1.37±0.75	2.34±0.44	2.11±0.37	10.73±6.23	9.42±5.23	11.69±5.53	28.39±15.49
p	0.648	0.885	**0.016**	**0.018**	**0.045**	**0.012**	0.458	0.403	0.105
t	-0.456	0.144	2.417	2.379	2.015	2.519	0.744	0.838	1.626
Düzenli Egzersiz Yapma (n)									
Evet (74)	2.49±0.24	2.19±0.62	1.65±0.75	2.56±0.39	2.23±0.38	11.24±6.16	9.58±5.60	11.75±5.49	33.56±14.89
Hayır (287)	2.53±0.24	2.23±0.59	1.64±0.74	2.51±0.46	2.23±0.38	8.58±6.08	8.87±5.45	10.95±6.08	31.85±15.01
p	0.192	0.64	0.891	0.39	0.909	0.183	0.534	0.819	0.504
t	-1.307	-0.468	0.137	0.861	-0.114	1.334	0.551	-..233	0.67
Sigara Kullanma (n)									
Evet (78)	2.48±0.24	2.11±0.63	1.68±0.74	2.59±0.37	2.22±0.35	11.44±6.18	9.74±5.72	11.88±5.63	33.06±15.19
Hayır (283)	2.54±0.24	2.26±0.59	1.63±0.75	2.49±0.46	2.23±0.38	10.82±6.21	9.44±5.55	11.59±5.54	31.86±15.93
p	**0.049**	0.06	0.622	0.075	0.736	**0.012**	0.458	0.403	0.105
t	-1.975	-1.888	0.494	1.785	-0.337	2.519	0.744	0.838	1.626
BKİ (kg/m²) (n)									
Zayıf (79)	2.52±0.25	2.36±0.57	1.69±0.76	2.52±0.48	2.27±0.39	11.25±6.39	8.93±5.64	11.03±5.84	31.22±15.94
Normal (218)	2.52±0.25	2.16±0.63	1.61±0.75	2.50±0.45	2.20±0.38	10.78±6.06	9.45±5.50	11.75±5.44	31.97±14.65
Hafif şişman (48)	2.53±0.19	2.25±0.53	1.70±0.68	2.57±0.43	2.26±0.34	11.17±6.52	10.32±6.05	12.45±5.77	33.93±15.58
Obez (16)	2.59±0.19	2.33±0.58	1.73±0.72	2.59±0.31	2.31±0.29	11.25±6.52	10.75±4.85	11.25±5.03	33.25±13.45
p	0.868	0.097	0.671	0.682	0.364	0.933	0.467	0.515	0.766
KW	0.72	6.322	1.549	1.503	3.186	0.436	2.548	2.288	1.145

X=Ortalama, SS=Standart sapma, BKİ=Beden kitle indeksi, t=bağımsız t testi, KW=Kruskal Wallis testi

Tablo 4'te öğrencilerin MDÖ ve DAS-21 ölçeğinden aldığı puanlar arasındaki korelasyona yer verilmiştir. DAS-21 toplam puanı, "Depresyon" ve "Stres" alt boyut puanlarının MDÖ "Malzeme güvenilirliği endişesi" alt boyutu ile pozitif yönde zayıf bir ilişki olduğu saptandı ($p<0.05$).

Tablo 4. MDÖ VE DAS-21 alt boyutları ve toplam puanların ilişkisi.

MDÖ VE DAS-21 Alt Boyutları ve Toplam Puanlar	1	2	3	4	5	6	7	8	9
1-Malzeme ve ev ortamı ihtiyaçları									
2-Taşıma ve okul ortamı ihtiyaçları	0.373**								
3-Malzeme güvenilirliği endişeleri	0.333**	0.333**							
4-Değiştirme ve imha güvensizliği	0.383**	0.390**	0.444**						
5-MDÖ Toplam	0.578**	0.737**	0.809**	0.731**					
6-Depresyon boyutu	-0.035	0.026	0.104*	0.089	0.092				
7- Anksiyete boyutu	0.008	0.022	0.067	0.047	0.068	0.577**			
8- Stres boyutu	-0.034	0.012	0.118*	0.017	0.064	0.671**	0.618**		
9-DAS-21 Toplam	-0.024	0.023	0.112*	0.061	0.087	0.860**	0.858**	0.876**	

*p<0.05, **p<0.01.

TARTIŞMA

Genç kadınlarda menstruasyon döneminde deneyimleri ile depresyon, anksiyete ve stres düzeylerinin karşılaştırılması amacıyla yürütülen bu çalışmada DASS skorları ve "Depresyon" ve "Stres" alt boyut puanlarının MDÖ "Malzeme güvenilirliği endişesi" alt boyutu ile pozitif yönde anlamlı bir ilişki olduğu belirlendi. Katılımcıların DASS-21 skorları yüksek bulundu, bu bağlamda menstrual periyodda genç kadınların depresyon, anksiyete ve stres yaşadıkları ortaya çıkarıldı. Çalışmanın COVID-19 pandemi sürecinde yapılmış olmasının bu sonucu etkilediği düşünülmektedir. Nitekim COVID-19 salgınının gençlerde ve diğer bireylerde stres, anksiyete, depresyon gibi ruhsal değişikliklere yol açtığını bildiren çalışmalar yaygındır (Tian ve ark., 2020; Chen ve ark., 2020). Menstruasyon yönetimi, global bir halk sağlığı konusu haline gelmiştir. Dünyanın dört bir yanında insanlar ve çeşitli paydaşlar, düşük ve orta gelirli ülkelerdeki birçok genç kadının regl ile ilgili utanç, mahcubiyet ve tabuları ele almak için dikkat ve kaynak getirmek için çalışmalar yapılmaktadır (Sommer ve ark., 2015). Menstruasyon, her kadının üreme çağı boyunca karşılaşması gereken doğal bir süreçtir. Menarş yaşı coğrafi bölgeye, ırka, etnik kökene ve diğer özelliklere göre değişir ancak "normalde" düşük gelirli ortamlarda 8 ila 16 yaşları arasında meydana gelir ve medyan 13 yaş civarındadır (ACOG, 2015). Bu çalışmada da benzer şekilde katılımcıların ortalama menarş yaşı 13.18±1.36 olarak bulundu. Aynı zamanda öğrencilerin büyük çoğunluğunun (%89.2) menstruasyon öncesi ve sırasında ağrı yaşadığı, %39.5'inin ailesinde (anne, kız kardeş) menstrual ağrı yaşandığı ve %39.1'inin menstrual ağrı nedeniyle okula gidemediği belirlenmiştir ve bu sonuçlar gelişmekte olan ve orta gelişmiş ülkelerde yapılan çalışmalar ile uyumlu bulunmuştur (Pitangui ve ark., 2013; Ahmad ve ark., 2021). Bilgi eksikliği ergenlerin zihninde yersiz korku, endişe ve yanlış fikirlere neden olmaktadır (Ahmad ve ark., 2021). Bu çalışmada katılımcıların %83.9'u menstruasyon öncesi annesi tarafından menstrual deneyimler hakkında bilgilendirilmişti. Ancak gelişmekte olan ülkelerde menstruasyon hakkında konuşmak bile halen tabu olarak görülebilmektedir. Hindistan'da da kadınların ilk kişisel deneyimlerine kadar menstruasyon hakkında hiçbir şey söylemedikleri bildirilmektedir. Bazı annelerin kızlarına regl döneminde adet görme ve hijyen kurallarını öğretmedikleri de görülmüştür (Ahmad ve ark., 2021). 2019 yılında Birleşmiş Milletler insan hakları uzmanları tarafından; menstruasyonla ilgili klişelerin yarattığı damgalama ve utanç, dahil olmak üzere kadınların ve kız çocuklarının eşitlik, sağlık, barınma, su, sanitasyon, eğitim, özgürlük gibi insan hakları, din veya inanç gereği, güvenli ve sağlıklı çalışma koşulları ve kültürel yaşam ve kamusal yaşam ayrım gözetmeksizin insan haklarının tüm yönleri üzerinde ciddi etkileri olduğu kabul bildirilmiştir (Birleşmiş Milletler, 2019). Yunanistan'daki göçmen çadırlarında yaşayan Suriyeli kadınlarla yapılan bir nitel çalışmada; kadınların menstruasyon malzemelerini değiştirmede zorluklar (tuvaletler çadırdan uzak olduğu için, tuvaletlere girebilmek için sıra bekleme süresinin uzunluğu), malzemelere erişimde (tuvalet kâğıdı, ped, iç çamaşırı gibi malzemelerin olmayışı) sıkıntılar ve tuvaletlerde gizlilik ve güvenlik endişesi yaşadıkları bildirilmiştir (VanLeeuwen ve Torondel, 2018). Bu çalışmada da genç kadınların özellikle malzeme güvenirliği konusunda yani giysilerine menstrual kanın bulaşması konusunda endişeleri olduğu ve bunun depresyon, anksiyete ve stres durumları ile ilişkili olduğu belirlendi. Tabu ile güçlü bir şekilde bağlantılı olan utanç ve özellikle giysilerden kanama ve tuvalete giden yolda adet ürünleri ile görülme konusundaki endişe tuvaletlerin cinsiyete veya aileye göre ayrılmasının sağlanmasının ve menstruasyonu onurlu bir şekilde yönetmek için gereken yeterli mahremiyet ihtiyacının önemini doğrulamaktadır (VanLeeuwen ve Torondel, 2018; Sommer ve ark., 2016). Anormallikler, düzensiz döngüler ve diğer sorunlar, ergen kadınların gelişimini ciddi şekilde etkiler. Büyüme ve gelişmenin ruh sağlığı

üzerinde ihmal edilemez bir etkisi vardır ve duygusal bozukluklar ile yakından ilişkilidir (Wang ve Zhang, 2020). Bu çalışmada menstruasyon sırasında ağrı yaşayan genç kadınların yaşamayanlara göre depresyon skorları yüksek bulunmuştur. Bu bulguları destekler nitelikte Çaltekin ve arkadaşlarının (2021) çalışmasına göre dismenore yaşayan kadınların sağlıklı kontrollere göre anlamlı olarak daha yüksek anksiyete ve depresyon puanlarına sahip olduğu bildirilmiştir. Yine bir başka çalışmada ergenlerde menstruasyon yönetimi ve ilişkili sorunların araştırıldığı çalışmada, menstrual ağrının depresyon ile ilişkili olduğu bildirilmiştir (Nabwera ve ark., 2021).

Araştırmanın Sınırlılıkları

Bu çalışmada bazı sınırlılıklar bulunmaktadır. Öncelikle verilerin toplanması COVID-19 salgın sürecinde kısıtlamaların yaşandığı zamana denk gelmesi öğrencilerin depresyon skorlarının oldukça yüksek olmasına neden olmuş olabilir. Ayrıca İstanbul'da sadece bir üniversitede yapılmış olması nedeniyle araştırma tüm evrene genellenemez. Örneklem sayısındaki kısıtlamalar da salgın ve kısıtlamalar nedeniyle öğrencilerin herhangi bir çalışmaya katılmak istememelerinden kaynaklanabilir.

SONUÇ

Bu çalışma genç kadınlarda menstruasyon döneminde malzeme güvenirliği endişesi yaşadıkları ve bu endişenin depresyon, anksiyete ve stres mevcudiyeti ile ilişkili olduğu belirlenmiştir. Ayrıca menstruasyon sırasında ağrı yaşayan genç kadınların depresyon düzeylerinin ağrı yaşamayanlara göre daha yüksek olduğu ortaya çıkmıştır. Menstrual sürecin yönetimindeki ihtiyaçların eğitim ve danışmanlıkların yanı sıra kamusal stratejilerle belirlenmesi gerektiği kanısındayız. Okullar, menstruasyon hakkında hedefli, uygun maliyetli ve verimli bir şekilde ve geniş erişimle eğitim verilebilecek, sağlık eğitimi için önemli bir ortamdır. Kısıtlayıcı okul uygulamaları, politikaları ve çerçevelerinin gözden geçirilmesi, okul ve sınıf devamsızlığının yönetilmesine yardımcı olacaktır. Gelişimlerinin bu kritik döneminde genç kadınların sağlığını ve esenliğini optimize etmek için erken araştırma ve müdahaleler zorunludur. Özellikle malzeme güvenirliği endişesi yaşayan öğrencilerin ev dışında, okulda ve/veya kamusal alanda gerekli malzemelere erişebilmesi, menstruasyon sırasında devamsızlık kullanabilme hakları ve eğitim/danışmanlık ihtiyaçlarının giderilmesi için toplumsal bir müdahaleye ihtiyaç duyulmaktadır. Toplumda kadınlarla iç içe çalışan meslek grubu olarak hemşirelerin eğitim/danışmanlık ihtiyaçlarında öncülük ettiği eğitim programları ve malzeme ihtiyaçlarının karşılanabilmesi için devlet desteğinin gerekli olduğu düşünülmektedir.

Çıkar Çatışması

Yazarlar, bu makalenin araştırılması, yazarlığı ve/veya yayınlanması ile ilgili olarak herhangi bir potansiyel çıkar çatışması beyan etmemiştir.

Yazar Katkıları

Plan, tasarım: Y.V, P.I.V; **Gereç, yöntem ve veri toplama:** Y.V, P.I.V; **Analiz ve yorum:** Y.V, P.I.V; **Yazım ve eleştirel değerlendirme:** Y.V, P.I.V.

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Investigation of Environmental Risk Perception and Environmental Attitudes of University Students

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ABSTRACT
Objective: This study was carried out to determine the level of knowledge and environmental attitudes of the students at the Faculty of Health Sciences of Medipol University against the risks that cause environmental pollution, and the relationship between them. **Materials and Methods**: 1586 students participating in the study; "Environmental Attitude Scale", "Environmental Risk Perception Scale", "Student Individual Characteristics Information Form" questionnaires were applied. The analyzes of the data obtained from the questionnaires were carried out using SSPS 21.0 statistical informatics programs. **Results**: It was determined that the mean score of the Environmental Risk Perception Scale was at a good level with 5.45±1.05. From the sub-items of the scale; "Radiation" had the highest average score with 5.89. It was determined that the mean score of the Environmental Attitude Scale was moderate with 3.71±0.55. From the sub-items of the scale, "The thinning of the ozone layer threatens all people" got the highest average score of 4.24. These results showed that there is a positive relationship between students' environmental attitude scores and environmental risk perception levels, but there is no strong correlation between them ($r=0.316$; $p<0.001$). Well; It has been determined that the students "could not show their sensitivity to take action against the dangers they perceive as environmental risks as an attitude". **Conclusion**: It will take time for environmental sensitivity to emerge as a behavior, depending on the increase in the level of knowledge about what environmental risks are. Therefore, in order to achieve the desired results in the long term; visual education programs on Health-Environment issues should be organized at all levels of education levels. In order to increase awareness about the risks that cause environmental pollution, environmental activities should be carried out with students and students should be encouraged to become members of environmental organizations.
Keywords: Environmental Science, Environmental Pollution, Environmental Risk Assessment, Environmental Protection.

Üniversite Öğrencilerinin Çevresel Risk Algısı ve Çevresel Tutumlarının İncelenmesi

ÖZ
Amaç: Bu çalışma, Medipol Üniversitesi Sağlık Bilimleri Fakültesi'ndeki öğrencilerin, çevrenin kirlenmesine neden olan risklere karşı bilgi seviyeleri ile çevresel tutumlarının düzeylerini ve aralarındaki ilişkiyi belirlemek amacıyla yapılmıştır. **Gereç ve Yöntem**: Çalışmaya katılan 1586 öğrenciye; "Çevresel Tutum Ölçeği" , "Çevresel Risk Algısı Ölçeği", "Öğrenci Bireysel Özellikleri Bilgi Formu" anketleri uygulanmıştır. Anketlerden elde edilen verilerin analizleri, SSPS 21.0 istatistik bilişim programları kullanılarak gerçekleştirilmiştir. **Bulgular:** Çevresel Risk Algısı Ölçeği puan ortalamasının 5.45 ±1.05 ile iyi düzeyde olduğu tespit ediliştir. Ölçeğin alt maddelerinden; "Radyasyon" 5.89 ile en yüksek puan ortalaması almıştır. Çevresel Tutum Ölçeği puan ortalamasının ise 3.71±0.55 ile orta düzeyde olduğu tespit edilmiştir. Ölçeğin alt maddelerinden; "Ozon tabakasındaki incelme tüm insanları tehdit etmektedir" 4.24 ile en yüksek puan ortalaması almıştır. Bu sonuçlar; öğrencilerin çevresel tutum puanları ile çevresel risk algısı seviyeleri arasında pozitif yönlü bir ilişki olduğunu fakat aralarında kuvvetli bir bağ bulunmadığını göstermiştir ($r=0.316$; $p<0.001$). Yani; öğrencilerin "Çevresel risk olarak algıladıkları tehlikeler karşısında bu tehlikelere karşı eyleme geçme duyarlılıklarını tutum olarak gösteremedikleri" tespit edilmiştir. **Sonuç:** Çevresel risklerin neler olduğuna dair bilgi seviyelerinin artmasına bağlı olarak, çevresel duyarlılığın bir davranış şekli olarak ortaya çıkması zaman alacaktır. Bu nedenle, uzun vadede istenilen sonuçlara ulaşmak için; öğretim kademelerinin her düzeyinde, Sağlık-Çevre konularında görsel eğitim programları düzenlenmelidir. Çevresel kirliliğe yol açan risklere karşı farkındalığı arttırmak için, öğrencilerle çevre etkinlikleri yapılmalı ve öğrencilerin çevre kuruluşlarına üye olmaları teşvik edilmelidir.
Anahtar Kelimeler: Çevre Bilimi, Çevre Kirliliği, Çevre Risk Değerlendirmesi, Çevre Koruma.

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INTRODUCTION

The natural balance arising from the harmony between humans and the environment has affected the environment due to human-related reasons, and environmental problems have occurred. In the face of the production, methods and tools in the hands of humanity, nature's ability to protect and renew itself has decreased, and environmental degradation has become irreversible (Sarkis, 2010). Today, as a result of the damage to the natural environmental balance, worldwide; Global climate change, melting of glaciers at the poles, depletion of the ozone layer, destruction of tropical forests and reduction of biological diversity, radioactive pollution caused by nuclear power plants, water pollution, depletion of natural resources appear as the most current and important Global environmental problems. Although not on a Global scale, affecting many countries and internationally; Problems such as acid rain, erosion and desertification, toxic wastes, pesticide pollution from agricultural activities, pollution in the seas caused by oil tankers and mercury pollution in the seas are environmental problems seen today. In recent years, environmental disasters such as mucilage in the seas, forest fires, floods and landslides, and the drying up of natural lakes have been experienced in our country. Environmental problems cause health problems and diseases. These diseases have a cost to the individual as well as to the society. According to the new numerical data published in the Health and Environment Alliance report; In the European Union, there are more than 18200 premature deaths and approximately 8500 cases of chronic bronchitis each year. The economic cost of health effects from coal use in the European Union is estimated to be 42.8 billion Euros per year (Healt and Environment Alliance [HEAL] 2018; Bostancıoğlu et al. 2017).

In the HEAL (2021) chronic coal pollution report in Turkey; One-year health effects from coal-fired power plants are as follows; 4.818 premature deaths 3.070 premature births, 237.037 days with asthma and bronchitis symptoms in children with asthma, bronchitis cases in 26.500 children, new bronchitis cases in 3.230 adults, 5.664 hospital admissions due to respiratory and cardiovascular diseases, 1.480.000 work days lost, 8.850 due to mercury exposure Loss of IQ score is estimated to have an economic cost of 26.07-53.60 billion Turkish Liras (2.86-5.88 billion EUR), ie 27% of health expenditures (HEAL, 2021).

The most effective and permanent solution in the fight against environmental problems is to raise individuals responsible for the environment. An effective method for raising environmentally responsible individuals is "good environmental education" (Tamam et al.2017).

A livable environment is possible by realizing the environmental awareness of individuals who make up societies and taking precautions for the environment. National and international organizations and formations frequently raise the importance of environmental education in order to develop sensitivity towards environmental problems. Key issues in reducing climate change and environmental pollution that will ensure the survival of the human generation; It is a good environmental education that will form the environmental attitudes of future generations (Inmaculada Aznar et al. 2019). Health department students, who have an important role in protecting public health against diseases caused by environmental pollution, should be graduated with conscious and competent equipment in terms of the effects of the environment on health and ways of protection. Creating and developing environmental awareness in the society and encouraging everyone to protect the environment they live in is an important step towards solving environmental problems (Tunç et al. 2012). As a result of academic publications, There are also very few studies in which both "environmental risk perceptions" and "environmental attitudes" of university students are measured together and the relationship between them is evaluated. With this study, university students, who are considered to be the most sensitive part of the society, asked, “How concerned are they about environmental problems and environmental risks? The answer to the question ” has been researched.

MATERIALS AND METHODS

Study type

It was carried out to determine the environmental risk perception and environmental attitudes of the students studying at Istanbul Medipol University Faculty of Health Sciences in the 2017-2018 academic year. In the research; a study was conducted to search for a statistical relationship between the Environmental Risk Perception Scale and the Environmental Attitude Scale.

Study group

The universe of this research consists of 1947 students studying at the Undergraduate Department of the Faculty of Health Sciences of Istanbul Medipol University. In this context, 1586 volunteer students who accepted to participate in our study formed the sample of our research. Since the research was conducted on eligible and volunteer students, the convenient sampling method, which is one of the non-random sampling methods, was used (Baydar, Gül, & Akçil, 2007).

Data collection tools

In the study, the “Environmental Risk Perception Scale (ERPS)”, which was created by Slimak and Dietz and translated into our language by Bahattin Deniz Altunoğlu and Esin Atav, was used to measure the risk perception ability that would cause environmental problems (Altunoğlu and Atav, 2009). In order to measure environmental attitude, the “Environmental Attitude Scale (EAS)” developed by Erdoğan Şama after testing its reliability and validity was used (Şama, 2003). A socio-demographic questionnaire form, which includes students' individual personal characteristics and their approach to environmental issues, was prepared by me.

Procedures

Permission was obtained from Esin ATAV to use the Environmental Risk Perception Scale and from Erdoğan ŞAMA to use the Environmental Attitude Scale.

Statistical analysis

The analysis of the data obtained as a result of the surveys conducted in Istanbul Medipol University Faculty of Health Sciences was carried out using SSPS 21.0 statistical informatics programs. Statistical relationship between ERPS and EAS was investigated with Kolmogorov-Smirnov test.

Ethical considerations

Official permission was obtained from the Istanbul Medipol University, where the research would be conducted, regarding the ethical suitability of the research. To the students participating in the research; It is assured that personal information will not be used other than for its intended purpose and will not be shared with others. After explaining the purpose of the survey, it was explained to the students that the participation was on a voluntary basis. Istanbul Medipol University Ethics Committee Presidency (Approval no.: 10840098-604.01.01-E.14382).

RESULTS

In this section, the findings regarding the comparison of the item averages obtained from the scales and the individual characteristics of the students who participated in the research by filling out the questionnaire are given in Table 1. The mean scores of the environmental risk perception scale are given in Table 2 and Table 3. The mean scores of the Environmental Attitude Scale of the students are given in Table 4. The data between the scores of the students in the ERPS and EAS scales are given in Table 5.

In Table 1, when the education levels of the students and the item point averages they got from the ERPS and EAS are examined; It was determined that the fourth-year students' ERPS item average score was significantly higher than that of the students in the other class. It was determined that the average of the EAS item scores of the students studying in the third year was much lower than the students studying in the other class.

In Table 1, when the age groups of the students and the item score averages they got from the ERPS and EAS are examined; There was no significant difference in the numerical data of the students' ERPS. It was determined that the mean EAS item scores of the students in the 21-year-old group were significantly lower than those in the 19-year-old and younger-22 and 22-year-old groups.

In Table 1, when the gender of the students and the mean scores of ERPS and EAS are examined; It was observed that the mean scores of the environmental risk perception scale and environmental attitude scale of female students were higher than the average scores of male students.

In Table 1, when the geographical region where the students' families live, and the item score averages they got from the ERPS and EAS; The average scores of students from student families living in the Marmara Region were high.

In Table 1, when the mean scores of the students' family type and the sub-dimensions of ERPS are examined; It has been determined that students with large families have higher risk perceptions against environmental problems.

In Table 1, it is concluded that the students whose income level is "medium and above" have more positive views on environmental health.

In Table 1, it was determined that there was no significant difference between the number of siblings of the students and the mean scores of environmental risk perception and environmental attitude. However, it was observed that the environmental risk perception and environmental attitudes of students with a sibling were higher than the others. It was observed that the environmental attitude scores of the students decreased as the number of siblings increased.

In Table 1, when the maternal education level of the students and the item score averages they got from the ERPS and EAS are examined; The EAS item average of the students whose mothers are primary school graduates is much lower than that of the students whose mothers are high school graduates.

In Table 1, when the father's education level and the item score averages they got from the ERPS and EAS are examined; It has been determined that the EAS item average of the students whose fathers are high school graduates is significantly higher than the students whose fathers are primary school graduates.

In this study, it was observed that the students' general environmental risk perceptions were at a good level (5.45 ±1.05). When the sub-dimensions of the environmental risk perception scale are examined; It was determined that the students with the highest average score focused on “chemical waste risk” (5.65±1.12) (Table 2).

When the scores of the students in ERPS are examined, the most important environmental risks are; radiation, genetically modified agricultural product, sewage, hazardous waste areas, habitat degradation (Table 3).

In this study; it was observed that the mean score of the students' environmental attitude scale was close to good (3.71±0.55) (Table 2).

When the students' EAS scores are examined, the environmental problems with the highest average are; The depletion of the ozone layer threatens all people, Those who litter or spit on the ground should be intervened, Countries should establish Ministries of Environment to solve environmental problems (Table 4).

The relationship between the ERPS and the mean scores of the EAS items in Table 5 were analyzed by Spearman correlation analysis. As a result of the examination; It was determined that there was a weak positive correlation between the ERPS and the mean scores of the EAS items ($r=0.316$; $p<0.001$).

Table 1. Comparison of students' individual characteristics and ERPS and EAS scores (n=1586).

Özellikler	ERPS		EAS	
	Mean±Standard Deviation	Test and p value	Mean±Standard Deviation	Test and p value
Department of education				
Nutrition and dietetics[a]	5.43±0.99	KW=1.404	3.80±0.54	KW=43.773
Nursing[b]	5.46 ±1.11	p=0.705	3.59±0.55	p=0.000
Physical therapy and rehabilitation[c]	5.47±1.01		3.78±0.53	a.c>b*
Healthcare management[d]	5.45±1.07		3.68±0.58	
Education level				
First grader[a]	5.47±1.00	KW=16.054	3.78±0.51	KW=101.684
Sophomore[b]	5.39±1.02	p=0.001	3.78±0.57	p=0.000
Third grade student[c]	5.32±1.22	d>c*	3.49±0.52	a.b.d>c*
Fourth grade[d]	5.68±0.83	d>b**	3.86±0.55	
Age groups				
19 years and under[a]	5.40±1.03	KW=5.001	3.77±0.53	KW=19.258
20 years old[b]	5.42±1.08	p=0.172	3.69±0.56	p=0.000
21 years old[c]	5.50±1.09		3.61±0.53	a. d>c**
22 years and older[d]	5.45±1.05		3.76±0.58	
Gender				
Woman	5.49±1.02	Z=-3.094	3.73±0.55	Z=-2.986
Boy	5.26±1.14	p=0.002	3.62±0.56	p=0.003
Region where the family lives				
The Mediterranean region[a]	5.47±1.03	KW=40.954	3.72±0.62	KW=15.193
Eastern Anatolia region[b]	5.14±1.15	p=0.000	3.62±0.50	p=0.034
Aegean region[c]	5.41±1.10		3.82±0.59	
Southeast Anatolia region[d]	5.01±1.34	a. c. g>h*	3.59±0.64	c>h***
Central Anatolia region[e]	5.24±0.95	b. e. f>h**	3.54±0.55	
Blacksea region[f]	4.99±1.08	d>h***	3.65±0.48	
Marmara region[g]	5.52±0.99		3.73±0.55	
Abroad[h]	3.60±1.98		3.32±0.50	
Family type				
Nuclear family	5.43±1.03	KW=5.941	3.72±0.56	KW=0.062
Extended family	5.57±1.00	p=0.051	3.70±0.50	p=0.969
Broken family	5.42±1.46		3.70±0.61	
Family income status				
High income	5.35±1.05	KW=0.525	3.65±0.53	KW=5.224
Middle income	5.46±1.02	p=0.769	3.72±0.55	p=0.073
Low income	5.29±1.48		3.58±0.61	
Number of siblings				
Only child	5.38±1.28	KW=5.012	3.64±0.59	KW=6.752
1 sibling	5.49±1.01	p=0.171	3.76±0.56	p=0.081
2 siblings	5.38±1.03		3.72±0.53	
3 siblings or more	5.50±1.00		3.67±0.54	
Mother education status				
Primary education[a]	5.41±1.12	KW=1.799	3.64±0.56	KW=36.981
High school[b]	5.54±0.85	p=0.407	3.82±0.52	p=0.000
University[c]	5.37±1.17		3.76±0.53	b>a* c>a***
Father educational status				
Primary education[a]	5.41±1.16	KW=8.044	3.67±0.57	KW=8.645
High school[b]	5.56±0.87	p=0.018	3.74±0.54	p=0.013
University[c]	5.30±1.12	b>a* b>c**	3.76±0.53	b>a*

Table 2. Mean scores of the environmental risk perception scale.

Scales and Sub-Dimensions	Mean±Standard Deviation	Min.	Max.
Ecological Risks	5.54±1.11	1	7
Chemical Waste Risk	**5.65±1.12**	1	7
Risk of Depletion of Resources	5.04±1.23	1	7
Global Environmental Risks	5.54±1.24	1	7
ERPS	5.45±1.05	1	7
EAS	**3.71±0.55**	2.43	5

Table 3. Ranking of students' environmental risk perception scale scores.

Question No	Risk Substances	Arrangement	Factors	$\bar{x}$	SD
1	Acid rains	14	Global Environmental Risk	5.39	1.52
2	Greenhouse effect	7	Global Environmental Risk	5.62	1.40
3	Depletion of the ozone layer	9	Global Environmental Risk	5.56	1.41
4	Oil extraction	15	Global Environmental Risk	5.37	1.40
5	Hazardous waste	4	Chemical Waste Risk	5.76	1.28
6	**Radiation**	**1**	**Chemical Waste Risk**	**5.89**	1.31
7	Persistently toxic organic compounds	6	Chemical Waste Risk	5.66	1.36
8	Heavy metals	10	Chemical Waste Risk	5.56	1.34
9	Pesticides	20	Chemical Waste Risk	5.28	1.38
10	Eutrophication	18	Ecological Risks	5.34	1.4
11	**Sewage**	**3**	**Chemical Waste Risk**	**5.78**	1.28
12	**Genetically Modified Agricultural Product**	**2**	**Ecological Risks**	**5.79**	1.30
13	Invasive species	12	Ecological Risks	5.50	1.38
14	Cutting trees in forests	8	Ecological Risks	5.59	1.38
15	Habitat degradation	5	Ecological Risks	5.72	1.30
16	Dam construction	17	Ecological Risks	5.36	1.40
17	Loss of wetlands	11	Ecological Risks	5.52	1.37
18	Chemical pollution of inland waters	13	Ecological Risks	5.49	1.38
19	Open mining	21	Risk of Depletion of Resources	5.04	1.41
20	Overgrazing	23	Risk of Depletion of Resources	4.66	1.60
21	Sport hunting	19	Risk of Depletion of Resources	5.31	1.47
22	Commercial fishing	22	Risk of Depletion of Resources	4.80	1.59
23	Population growth	16	Risk of Depletion of Resources	5.37	1.47

Table 4. Students' environmental attitude scores mean.

Question No	Environmental Attitudes	Arrangement	x̄	SD
1	More important to be supported in Turkey, although there are projects, it is unnecessary for the World Bank to support air pollution measurement projects.	17	2.33	1.21
2	Using natural gas in residences and workplaces, it cannot contribute to the solution of the air pollution problem.	14	2.39	1.17
3	**The depletion of the ozone layer threatens all humans is doing.**	**1**	**4.24**	1.07
4	Meetings should be held to protest against technology products that damage the ozone layer.	5	3.92	1.03
5	The reports that the sea, streams and lakes are polluted are exaggerated.	20	2.27	1.21
6	Drinking water in big cities is so polluted that it is necessary to use water filters at home.	8	3.80	1.03
7	Efforts to protect sea turtles, which can be seen on some beaches in the south, are vain.	21	2.22	1.23
8	Turkey does not have a desertification problem.	15	2.38	1.17
9	In order to meet their needs for fresh air, people should be encouraged to build small dwellings in forested areas near cities.	11	3.02	1.27
10	Air, water and soil are inexhaustible resources.	16	2.37	1.29
11	Any country that conducts a nuclear test must be protested.	6	3.89	1.19
12	Rapid population growth is a serious environmental problem.	7	3.86	1.01
13	Malnutrition in underdeveloped countries is a result of environmental problems.	9	3.80	1.01
14	**Those who throw garbage or spit on the ground should be intervened.**	**2**	**4.18**	1.05
15	Slums are not an environmental problem.	19	2.29	1.20
16	The idea of environmental protection was invented by westerners to prevent the development of developing countries.	18	2.33	1.25
17	Being sensitive to environmental problems does not prevent the development of a country.	10	3.50	1.30
18	The emergence of environmental groups stems from the need to make friends rather than to protect the environment.	13	2.63	1.29
19	No institution or organization, including the United Nations, should interfere with countries' use of their natural resources as they wish.	12	2.82	1.24
20	Environmental programs should be given more space in newspapers, magazines and television.	4	3.96	0.97
21	**Countries should establish Ministries of Environment to solve environmental problems.**	**3**	**4.02**	1.00

Table 5. Relationship between students' ERPS and EAS ıtem score.

Scales and Sub-Dimensions	EAS	
	r	p
Ecological Risks	0.354	0.000
Chemical Waste Risk	0.364	0.000
Risk of Depletion of Resources	0.049	0.051
Global Environmental Risks	0.360	0.000
ERPS	**0.316**	0.000

DISCUSSION

Efforts to train people who are sensitive to the protection of the environment and to develop environmental awareness among university students will reduce environmental problems.

It is necessary to know the current environmental awareness level before the studies to be carried out to increase the level of knowledge and attitude of university students towards the environment (Kiper et al. 2017). The findings obtained for this purpose were discussed in line with the literature.

According to the education level of the students, it was seen that the mean scores of ERPS and EAS were higher in the fourth grade.

In the study of Uzun (2007); He stated that as the grade level of the students increased, their knowledge of the problems arising from the environment increased, but their behavior scores for the protection of the environment did not increase. It is an expected result that as the grade level of the students increases, their knowledge increases and their awareness of environmental risks increases. However, it is thought-provoking that they cannot transform their knowledge into behavior. In the study of Alpak Tunç (2015); The 3rd and 4th grade science teacher candidates found their attitudes towards the environment significantly higher than the 1st and 2nd grade science teacher candidates.

In the study of Sarıkaya and Saraç (2018); determined that the 4th grade teacher candidates show higher averages than those in the lower grades in terms of attitudes of pre-service teachers towards environmental problems. It has been determined that this result is compatible with the literature, and the faculty members of the Faculty of Health Sciences of Istanbul Medipol University have a great role in transforming the students' knowledge into attitudes and behaviors. Environmental awareness should be improved by including activities in Environmental Education programs (Atasoy and Ertürk, 2008). When the age groups of the students and the mean scores of ERPS and EAS are examined; It was observed that the mean score of EAS was low in students under the age of 19. In the study of Erol and Gezer (2006) with pre-service teachers; It has been found that students aged 22 and over have higher attitudes towards the environment than those aged 21 and under. In the study of Ek et al. (2009); It has been determined that the mean scores of the Environmental Attitude Scale of students aged 21 and over are higher than those aged 20 and under.

In Uzun (2007)'s study on secondary school students' knowledge and attitudes towards the environment; reported that as the age of the students increased, the environmental knowledge and environmental attitude scores of the students increased significantly. This result is compatible with the studies in the literature (Sarıkaya and Saraç, 2018; Bulut, 2015; Sayan, 2013). These results can be explained that as the age of the students increases, one can be more sensitive to the environment with the effect of maturation (Değerli, 2008). When the gender of the students and the mean scores of ERPS and EAS were examined; it was seen that the mean scores of ERPS and EAS of female students were higher than that of male students.

Sayan (2013) in his study; reported that female students had higher environmental risk perception and environmental attitude scores than male students.

In Ateş (2015) study; It has been concluded that women are more conscious of the negative consequences of global climate change for people and the natural environment.

In the study of Ruigrok et al. (2014); in a comprehensive meta-analysis study on the structural differences of male and female brains; It has been pointed out that the limbic system, which is the emotional center of the brain, has a larger structure in women and that women are more sensitive to emotional signals.

These results show that female students have a higher level of behavioral intention to reduce environmental problems than male students. At the same time, we can conclude that they are more attentive to environmental problems with their harmonious, empathetic, compassionate, sensitive, responsible and tolerant characteristics. This result is also compatible with the studies in the literature (Özyürek et al. 2019; Arık and Yılmaz, 2017; Tarıselçuk et al. 2016; Dibgy, 2010; Kibert, 2000; Murphy, 2002; O'Brien, 2007; Şama, 2003; Timur, 2011; Faiz and Yüzbaşıoğlu, 2019). When the region where the students' families live and their ERPS and EAS scores are examined; The mean scores of ERPS and EAS of students living in the Marmara Region were high. Abramson and Ingelhart (1995) environmental attitude; They associate it with the fact that people are more affected or not affected by environmental problems in the place where they live.

It has been concluded that the intense urbanization in the Marmara Region, the decrease in green areas and the problems brought by urbanization also affect the behavior of the people living in the Marmara Region depending on the risk perception. When the family type ERPS and EAS scores of the students are examined; It has been observed that students with large families have a high ERPS score average. In the study of Özmen et al. (2005); She stated that individuals who grew up in family environments where issues related to environmental problems are discussed are more sensitive to environmental problems.

In this study; It was thought that environmental values were transferred more effectively in an environment where environmental problems were discussed within the family. When the income status of the student's family is examined, the mean scores of ERPS and EAS; It has been determined that the students with a medium income level have more positive views on the protection of the environment. Sayan (2013) in his study; He compared the income status of the students' families with the environmental risk perception and environmental attitude score averages and did not find a statistical difference. Nevertheless, He said that "the students whose income meets their expenses have higher environmental risk perception and environmental attitude score averages". With this study, it is concluded

that in case the family income cannot meet the expenses, the sensitivity of the students towards environmental problems decreases. This result is compatible with the studies in the literature (Acungil, 2020; Özçelik, 2019; Tariselçuk et al. (2016); Özmen et al., 2005:341; Pe'er et al., 2007:281; Şama, 2003:106). It has been concluded that students whose income level is not high should be supported with gratuitous scholarships. When the mean scores of ERPS and EAS are examined according to the number of siblings the students have; It was determined that the students with a sibling had higher EAS scores than the others. In the study of Özmen et al. (2005); The mean scores of the students who have less than three siblings from the environmental attitude scale were found to be higher than those who have more than three siblings. Sayan (2013) in his study; "The environmental risk perception and environmental attitude mean scores of students with only one or 2-3 siblings in the family were found to be higher than those with 4 or more siblings," he says. With this study, it was concluded that the high number of children in the family affects environmental sensitivity negatively. When the mother and father education levels of the students were examined, the mean scores of ERPS and EAS were examined; It can be said that the children of parents with a higher education level have more positive attitudes towards the environment. In the study of Özmen et al. (2005); It has been determined that the environmental attitudes of the students who have parents with a high education level are also high. In the study of Şenyurt et al. (2011); It was stated that the environmental attitude averages of university students were not affected by the education level of the mother, but were affected by the education level of the father. In the study of Tarıselçuk et al. (2016); stated that the total score of CRAÖ was higher in those whose mothers had a high school or higher education level. It can be argued that a family environment with a high education level may be a reason for the child to be more sensitive to environmental problems and to develop a positive environmental attitude. This result also supports the results of the studies in the literature (Özçelik, 2019; Sam et al., 2010; Pe'er et al., 2007). In order for families to be role models for their children in environmental issues, "Parental" trainings should be implemented.

Perception of risk is defined as "the person perceives the information about the severity of the danger, worries about it as a result and evaluates it by processing it in the mind" (Tarıselçuk et al. 2016). When the average score of the students in the ERPS is examined; it can be said that environmental risk perceptions are high (5.45±1.05). The most important environmental risks; radiation, genetically modified crops, sewage, hazardous waste sites, habitat degradation. In the study conducted by Sam et al. (2010) on Uludag University students; The average of the answers given to the environmental risk perception scale was 4.23. The items with the highest average are "Radiation", "Hazardous waste areas" and "Sewage".

Altınoğlu and Atav (2009) found that the most important environmental risks are; greenhouse effect, radiation, ozone layer depletion, hazardous waste areas and sewage.

It has been determined that the results obtained in this study are in accordance with the literature research. (Sayan, 2013; Pe'er et al., 2007; Özmen et al., 2005) The main reason affecting the ranking; are current environmental risk issues in visual media. The fact that radiation is seen as one of the most important environmental risks is that the Chernobyl nuclear accident close to the borders of our country is still on the agenda.

When the average score of the students in the EAS is examined; It can be said that the mean environmental attitude score is close to good (3.71±0.55). Environmental problems with the highest average; The depletion of the ozone layer threatens all people, Those who litter or spit on the ground should be intervened, Countries should establish Ministries of Environment to solve environmental problems.

Sayan (2013) found in his study that students' EAS average scores were at a good level (4.02±0.47). Environmental problems with the highest average score; They are listed as "The depletion of the ozone layer threatens all people", "Those who throw garbage on the ground or spit on the ground should be intervened" and "Countries should establish Ministries of Environment to solve environmental problems".

In the study of Çınar et al. (2010) on 4th grade students of nursing department; stated that students' environmental attitude scores were at a good level (83.18 ± 7.47). The environmental problem with the highest average score; "The depletion of the ozone layer threatens all humans".

Şahin and Doğu (2018) in their study; determined that the attitude scores of pre-school female pre-service teachers towards environmental problems are higher than the attitude scores of male pre-service teachers.

It has been determined that the results obtained in this study are similar to the results of the literature research. In order to raise the obtained result higher, studies involving social activities that will transform environmental risk perceptions into action should be carried out with students. Students should be encouraged to become members of environmental organizations by introducing them. When the relationship between the students' ERPS and the mean scores of the EAS items was examined; It was determined that there was a weak positive correlation between the ERPS and the mean scores of the EAS items ($r=0.316$; $p<0.001$). In other words; It has been revealed that "in the face of the dangers they perceive as an environmental risk, they cannot show their sensitivity to take action against these dangers as an attitude".

In the study of Vaizoğlu et al. (2005); It is stated that although the students seem environmentally friendly in terms of mentality, they are insufficient in taking action to protect the environment. Sayan (2013) found in his study that there was a highly positive and significant relationship between students' environmental risk perception and environmental attitudes ($r=0.366$; $p<0.001$). Students with high environmental risk

perceptions also have high positive attitudes towards the environment. This situation can be evaluated as the reflection of the perceptions and thoughts of the individuals on the attitude. Palanci and Sarikaya (2019) in their study; It has been determined that the arithmetic mean of environmental attitude and environmental risk scores of students with high academic achievement is high. Kaya (2021) in his study on individuals living in Çanakkale; It has been determined that individuals have a high level of environmental knowledge and environmental attitude, but they do not show that they do not fully reflect this on their behavior. Inmaculada Aznar et al. (2019) in their study, primary school teacher candidates; It has been determined that they know that environmental pollution has a direct effect on the protection of biological diversity and the degradation of natural areas, but their attitudes towards recycling waste are not at the desired level. Hinojo Lucena (2019) in his study; It has been determined that although students are concerned about garbage heaps, they do not define themselves as waste producers and they are inadequate in managing and eliminating waste. The results obtained in this study are compatible with the literature; It was expected that students with high environmental risk perceptions would also have high positive attitudes towards the environment, but in this study, the perceptions and thoughts of individuals were weakly reflected in environmental attitudes. Among the questions in the environmental attitude scale of Istanbul Medipol University Faculty of Health Sciences students, the first three items with the highest average are; The depletion of the ozone layer threatens all people, those who litter or spit on the ground should be dealt with, Countries should establish Ministries of Environment to solve environmental problems (Table 4).

In the study of Çınar et al. (2010); It was determined that the environmental attitude scores of the students were at a moderate level. It was determined that the students got the highest average score from the EAS items from the question "The thinning of the ozone layer threatens all people". In this study; It was observed that the mean environmental attitude scale score of Istanbul Medipol University Faculty of Health Sciences students was close to good (3.71±0.55). In order to increase this result; Students should have social activities that will transform their environmental risk perceptions into action.The relationship between the ERPS and the mean scores of the EAS items in Table 5 were analyzed by Spearman correlation analysis. As a result of the examination; It was determined that there was a weak positive correlation between the ERPS and the mean scores of the EAS items ($r=0.316$; $p<0.001$). In the study of Vaizoğlu et al. (2005); It is stated that although the students seem environmentally friendly in terms of mentality, they are insufficient in taking action to protect the environment. In this study, It was expected that students with high environmental risk perceptions would also have high positive attitudes towards the environment**.** However, in this study, perceptions and thoughts of individuals were weakly reflected in environmental attitudes.

CONCLUSION

This study was conducted to determine the environmental risk perception and environmental attitudes of 1586 students at Istanbul Medipol University Faculty of Health Sciences. The fact that the number of students in the study is much higher than those who have done similar studies before makes the study meaningful. According to the results obtained from the study;

More intensive training programs should be organized by experts in the field of Health-Environment.

It should be ensured that environmental risk perception and attitude are increased by establishing social environmental clubs with students and promoting the active environmental organizations. Environmental activities (cleaning the environment, participating in afforestation and environmental regulations, promoting recycling and waste separation, encouraging conscious consumption for water and energy savings) should be provided with environmental clubs established at universities. First of all, male students should be encouraged to participate in these studies. In order for students to be more sensitive to environmental problems; Participation in events such as seminars, meetings, panels, conferences should be ensured. Non-refundable scholarships should be given to students who have difficulty in meeting their income and expenses. In order to create social awareness against the harms of environmental risks, environmental education should be started from pre-school education. Parent Education should be added to these trainings. The behavior that requires developing an attitude against the risks that will cause environmental pollution will not emerge immediately. Therefore; Visual-based courses including Health-Environment topics should be taught at every grade level of education. In order to keep environmental awareness on the agenda, the activities of non-governmental organizations that aim to protect the environment should be followed. To the researchers; We recommend them to conduct scientific research on the use of plastic and the effects of waste on the environment and human health.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: MAD; **Material, methods and data collection:** MAD, NS; **Data analysis and comments:** MAD; **Writing and corrections:** MAD, NS.

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Aile Sağlığı Elemanlarının Kronik Hastalıklara Yönelik Uygulamaları Kronik Hastalıklara Yönelik Uygulamaları: Bilgilendirme, Eğitim, İzlem ve Yönlendirme Faaliyetleri

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ÖZ

Amaç: Araştırma aile sağlığı elemanlarının sık görülen kronik hastalıklara yönelik uygulama ve yaklaşımlarının belirlenmesi amacıyla yapılmıştır. **Gereç ve Yöntem:** Tanımlayıcı türdeki bu araştırma 2021 yılında 101 aile sağlığı elemanıyla gerçekleştirilmiştir. **Bulgular**: Aile sağlığı elemanlarının %20.8'i sağlıklı bireyleri diyabet riski açısından değerlendirip aile hekimine yönlendirmekte; %32.7'si diyabet haricinde herhangi bir kronik hastalığı bulunan bireyleri diyabet riski açısından değerlendirmemekte ve aile hekimine yönlendirmemekte; %77.2'si kendilerine başvuran tüm gebeleri gebelik diyabeti açısından değerlendirip glikoz tolerans testi ölçümü için aile hekimine yönlendirmekte; %47.5'i çocukluk çağı diyabet öyküsü olan tüm bireyleri diyabet izlemi açısından değerlendirmekte ve glikoz tolerans testi ölçümleri için aile hekimine yönlendirmekte; %34.7'si tüm sağlıklı bireylerin sistolik ve diastolik değerlerini en az 1 kere ölçmekte; %40.6'sı ise adölesan bireyleri adölesan dönem HT açısından değerlendirmeyip aile hekimine yönlendirmemekte; %32.7'si kendilerine başvuran yüksek kolesterol riski olan bireylerin yarısından fazlasını sağlıklı beslenme, %31.7'si fiziksel aktivite hakkında bilgilendirmektedir. Aile sağlığı elemanlarının %33.7'si sağlıklı bireylerin yarısından çoğunun en az 1 kez Beden Kitle İndeksini (BKİ) ve herhangi bir kronik hastalığı bulunan bireylerin BKİ'sini değerlendirmektedir.

Sonuç: Aile Sağlığı elemanlarının kronik hastalıkları önleme ve mücadelede temel rol ve sorumlulukları arasında yer alan bilgilendirme, eğitim, izlem ve yönlendirme faaliyetlerinin geliştirilmesi gerekmektedir. Aile sağlığı elemanlarının sağlıklı yaşam biçimi davranışları kazandırma ve davranış değişikliğini takip etme bakımından teşvik edilmesi ve katılımı sağlayacak politikalar geliştirilmesi önerilmektedir.

Anahtar Kelimeler: Aile Sağlığı Elemanı, Kronik Hastalıklar, Hastalık Yönetimi, Diyabet, Kanser, Yüksek Tansiyon.

Practices of Family Health Staff for Chronic Diseases: Information, Education, Follow-up, and Guidance Activities

ABSTRACT

Objective: The purpose of this study is to determine the practices and approaches of family health workers in managing chronic illness. **Materials and Methods:** The study was conducted descriptively in 2021 with 101 family health workers. **Results:** According to findings, 20.8% of family health workers screen healthy individuals for diabetes risk and refer them to family physicians; 32.7% do not assess individuals with a chronic disease other than diabetes for diabetes risk and do not refer them to the family physician; 77.2% screen all pregnant women who refer to them for gestational diabetes and refer them to the family physician for glucose tolerance testing; 47.5% screen all individuals with a history of childhood diabetes for diabetes and refer them to their family physician for measurement of the glucose tolerance test; 34.7% measure systolic and diastolic values of all healthy individuals at least once; 40.6% do not assess adolescent individuals for adolescent hypertension and do not refer them to a family physician; 32.7% inform more than half of those at high risk for cholesterol about healthy eating, and 31.7% inform more than half about physical activity; 33.7% determine the body mass index (BMI) of more than half of healthy individuals and the BMI of individuals with a chronic disease at least once. **Conclusion:** It is necessary to improve the activities of informing, educating, monitoring, and referring, which are among the fundamental roles and responsibilities of family health workers in preventing and combating chronic diseases. Policies should be developed to encourage and engage individuals in acquiring healthy lifestyle behaviors and behavior change.

Keywords: Family Health Worker, Chronic Diseases, Disease Management, Diabetes, Cancer, High Blood Pressure.

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GİRİŞ

Birinci basamak sağlık hizmetleri, toplum bireylerinin ihtiyaçlarına ve tercihlerine mümkün olan en erken zamanda odaklanarak yüksek sağlık ve esenlik düzeyine erişmesini ve hizmetlerin eşit dağılımını sağlamaya odaklanır (UNICEF ve WHO, 2018a). Bu hizmetler, bireyin yaşamı boyunca fiziksel, ruhsal ve sosyal sağlık ihtiyaçlarının çoğunu karşılamakta, bireysel veya toplumsal düzeyde olmak üzere, sağlığın geliştirilmesi ve hastalıkların önlenmesinden tedavi, rehabilitasyon ve palyatif bakıma kadar tüm süreci kapsamaktadır (UNICEF ve WHO, 2018; WHO, 2021b). Gelişmiş sağlık sistemlerinde sağlık hizmetinin merkezi ve çoğu zaman ilk temas noktası olan bu hizmetler, kronik hastalıkların yönetiminde merkezi bir rol oynamaktadır (Hobbs ve ark., 2016; Prazeres ve Santiago, 2015). Kronik hastalıklar, genellikle uzun bir gözetim, gözlem ve bakıma ihtiyaç duyulan hastalıklardır. Kardiyovasküler hastalıklar, kanserler, kronik solunum hastalıkları ve diyabet, dört ana kronik hastalık türü olarak kategorize edilmektedir (Kadu ve Stolee, 2015; Sung ve ark. 2018). Günümüzde kronik hastalıkların düşük ve orta gelirli ülkeler üzerindeki etkileri önemli bir sorundur. DSÖ (2021) verilerine göre kronik hastalıklar nedeniyle her yıl 41 milyon insan ölmekte, bu da dünya çapındaki tüm ölümlerin %71'ine denk gelmektedir. Tüm kronik hastalıklara bağlı ölümlerinin %77'si düşük ve orta gelirli ülkelerdedir. Kronik hastalıklara bağlı ölümlerinin çoğunu (17.9 milyon) kardiyovasküler hastalıklar oluştururken, bunu kanserler (9.3 milyon), solunum hastalıkları (4.1 milyon) ve diyabet (1.5 milyon) izlemektedir (WHO, 2021c). Türkiye'de kronik hastalıklardan kaynaklı ölüm oranları DSÖ Avrupa Bölgesi'ndeki diğer ülke oranlarına benzerdir. Tüm ölümlerin %87.5'i kronik hastalıklardan kaynaklanmaktadır (WHO, 2021c). Nüfusun yarıdan fazlası, kronik hastalıklar için üç ya da daha fazla risk faktörüne sahiptir ve bu durum yaşla orantısal olarak artmaktadır. Nüfusun sadece %1.3'ü kronik hastalıklar için 5 risk faktöründen hiçbirini taşımamaktadır (STEPS, 2018).

Türkiye'de kronik hastalıkların görülme oranının her geçen gün artması ve kronik hastalıkların yaşam boyu devam etmesine bağlı olarak kronik hastalıkların yönetimi bireylerin sorumluluğudur. Kronik hastalıkları yönetmek bireyin ifade ettiği değişiklerle belirtilerle ve yetersizliklerle beraber yaşamayı deneyimlemesini gerektirir. Kronik hastalıkların yönetiminin temel amacı yaşam şekli değişikliklerine ve alınan tedaviye uyumu artırmak; hastalığı durdurmak ve komplikasyonu önlemektir. Bu bağlamda öz-yönetimi desteklemek üzere hemşire liderliğindeki bilgi ve eğitim müdahaleleri hastalık yönetiminde olumlu sonuçlar vermektedir (Yıldırım, 2021).

Birinci basamak sağlık hizmetlerinin süreklilik, koordinasyon ve kapsamlılık gibi tanımlayıcı özellikleri kronik hastalıkların yönetimini sağlamada önemli rol oynamaktadır (Rothman & Wagner, 2003). Birinci basamak sağlık çalışanları ise kronik hastalıkların ortaya çıkışı ve yönetiminde, kendilerine başvuran bireyin sağlık davranışları ve yaşam tarzına yönelik sağlığı geliştirmenin yanı sıra kronik hastalıklarla mücadelede önemli role sahiptir (Martinez ve ark., 2017). Yurtiçi literatürde kronik hastalıklar kapsamında diyabet, yüksek tansiyon, obezite ve diğer konu başlıklarında hastaların öz yönetim sorumluluğu ve eğitim alanındaki çalışmalara odaklanılsa da kapsayıcı şekilde kronik hastalıklara yönelik aile sağlığı elemanlarının eğitim, bilgilendirme, izlem ve yönlendirme olmak üzere ana faaliyetlerini uygulama durumlarını değerlendiren bir çalışmaya rastlanılmamıştır. Aile sağlığı elemanlarının (Hemşire, Ebe, ATT, Sağlık Memuru) kronik hastalıklarla mücadelede bilgilendirme, eğitim, izlem yönlendirme uygulamalarının değerlendirmeye ihtiyaç olduğu düşünülerek tamamlanan bu aştırma, mevcut durum ve ihtiyaç tespiti bakımından literatüre katkı sağlayıcıdır.

GEREÇ YÖNTEM

Araştırmanın tipi

Araştırma tanımlayıcı tiptedir.

Araştırmanın yeri ve zamanı

Araştırma verileri online veri toplama aracı Google Forms ile 20/06/2021-10/08/2021 tarihleri arasında toplanmıştır.

Araştırmanın örneklemi

Araştırma örneklem grubu Ankara ilinde görev yapan aile sağlığı elemanlarına sosyal medya araçları kullanılarak (WhatsApp, facebook, telegram vb.) ulaşılarak olasılıklı olmayan örneklem yöntemlerinden kartopu örneklem yöntemiyle oluşturulmuştur. Araştırmada çalışmaya katılmayı kabul eden 101 aile sağlığı elemanına ulaşılmıştır. Araştırmada online veri toplama formu kullanılmıştır.

Değişkenler

Bu araştırmada değişkenler diyabet, yüksek tansiyon, yüksek kolestrol, obezite ve kanser hastalıklarına yönelik 5 kategoride yapılan bakım uygulamaları olan bilgilendirme, eğitim, izlem ve yönlendirme faaliyetlerini içermektedir.

Veri toplama araçları

Literatür taraması (Altamimi ve ark., 2016; Choi ve ark. 2018; Godwin ve ark., 2015; Lundberg ve ark., 2017; Prazeres ve Santiago, 2015; Rani, 2018) yapılarak oluşturulan veri toplama formu üç bölümden oluşmaktadır. İlk bölümde aile sağlığı elemanlarının yaşı, ilgilendikleri ortalama nüfus, 50-64 yaş arası ve 65 yaş ve üzeri ortalama nüfus, cinsiyet, öğrenim durumu ve alana özgü eğitim almaya ilişkin sekiz soru bulunmaktadır. İkinci bölümde aile sağlığı elemanlarının kronik hastalıklara yönelik yaklaşımlarını belirlemeye yönelik 33 soru, aile sağlığı elemanlarının kendilerine başvuran bireyleri kronik hastalıklar açısından değerlendirmeme nedenlerine yönelik bir soru yer almaktadır. Üçüncü bölümde aile sağlığı elemanlarının yaşam tarzı değerlendirmeleri, kronik hastalıklara yönelik uygulamaları yeterli bulma durumları, birey/aile ve topluma yönelik düzenledikleri sağlık eğitimleri, eğitim konuları ve aile sağlığı elemanlarının yayın takip etme özelliklerini belirlemeye yönelik 10 soru bulunmaktadır.

İstatistiksel analiz

Verilerin girişi ve analizinde EXCELL 2013 ve IBM SPSS 25.0 programından yararlanılmış, anlamlılık düzeyi $p<0.05$ olarak belirlenmiştir. Çalışmada sayı ve yüzde hesaplamaları yapılmış, aile sağlığı elemanlarının bazı sosyo demografik özelliklerine göre yaptığı girişimleri

yeterli bulma ve sağlık eğitimi uygulama durumlarını değerlendirmek için ki-kare analizi yapılmıştır.

Araştırmanın etik yönü

Araştırma kapsamında Yıldırım Beyazıt Üniversitesi Etik Kurulu (2021/183) ve Sağlık Bakanlığı çalışma onayı alınmıştır. Araştırma örneklem grubu bilgilendirilmiş, onam formu kutu seçeneğinin yer aldığı sayfa aracılığıyla izinleri alınmıştır. Araştırmaya dahil edilme kriteri olarak; en az 6 ay aile sağlığı elemanı olarak çalışmak ve gönüllülüktür.

BULGULAR

Katılımcıların büyük çoğunluğu kadınlardan (%96), oluşmakta olup yarısından fazlası (%63.4) ebelerdir. Araştırmaya katılan aile sağlığı elemanlarının yaşları 24 ile 50 arasında değişmektedir. Yarısından fazlası (%57.4) Sağlık Bakanlığı tarafından düzenlenen Aile Sağlığı Elemanı Uyum Eğitimine katılmış, %37.6'sı ise alanına özgü hiçbir eğitim almamıştır (Tablo 1).

Tablo 1. Aile sağlığı elemanlarının sosyo demografik özellikleri.

	Min-Max (x̄±SS)
Yaş	24-50 (37.75±6.71)
Kayıtlı ortalama nüfus	2200-4593 (3551.15±497.46)
50-64 yaş arası ortalama nüfus	85-3503 (645.11±493.89)
65 yaş ve üzeri ortalama nüfus	80-1500 (366.73±224.81)
Cinsiyet	**n(%)**
Kadın	97(96.0)
Erkek	4(4.0)
Meslek	
Hemşire	31(30.6)
Ebe	64(63.4)
ATT	3(3.0)
Sağlık memuru	3(3.0)
Öğrenim durumu	
Lisans	58(57.4)
Ön lisans	30(29.7)
Lise	13(12.9)
Alanı ile ilgili aldığı eğitimler	
Aile sağlığı elemanı uyum eğitimi	58(57.4)
Yüksek lisans	5(5.0)
Hiçbiri	38(37.6)
Toplam	101(100.0)

Tablo 2'de aile sağlığı elemanlarının kronik hastalıklara yönelik yaklaşımları yer almaktadır. Aile sağlığı elemanlarının %20.8'i sağlıklı bireyleri diyabet riski açısından değerlendirip aile hekimine yönlendirdiği, %32.7'sinin ise diyabet haricinde herhangi bir kronik hastalığı bulunan bireyleri diyabet riski açısından değerlendirmediği ve aile hekimine yönlendirmediği bulunmuştur. Aile sağlığı elemanlarının %77.2'sinin kendilerine başvuran tüm gebeleri gebelik diyabeti açısından değerlendirip glikoz tolerans testi ölçümleri için aile hekimine yönlendirdiği, %47.5'inin çocukluk çağı diyabet öyküsü olan tüm bireyleri diyabet ölçümü açısından değerlendirdiği ve glikoz tolerans testi ölçümleri için aile hekimine yönlendirdiği bulunmuştur. Aile sağlığı elemanlarının %35'i sağlıklı bireylerin hepsinin sistolik ve diastolik değerlerini en az bir kere ölçmekte, %34'ü yüksek tansiyon haricinde herhangi bir kronik hastalığı bulunan tüm bireylerin sistolik ve diastolik değerlerini en az bir kere ölçtüğünü belirtirken, %40.6'sının adölesanları adölesan dönem yüksek tansiyon açısından değerlendirmediği ve aile hekimine yönlendirmediği görülmektedir. Aile sağlığı elemanlarının %31.7'si sağlıklı bireylerin yarısından çoğunu en az bir kez total kolesterol düzeylerinin değerlendirilmesi için aile hekimine yönlendirmektedir. %32.7'si yüksek kolesterol riski olan bireylerin yarısından fazlasını sağlıklı beslenme, %31.7'si yarısından fazlasını fiziksel aktivite hakkında bilgilendirmektedir. Aile sağlığı elemanlarının %33.7'si sağlıklı bireylerin yarısından fazlasının en az bir kez Beden Kütle İndeksini (BKİ) hesaplamakta, yine %33.7'si herhangi bir kronik hastalığı bulunan bireylerin en az bir kez BKİ'ni değerlendirmektedir. Aile sağlığı elemanlarının %39.6'sı sağlıklı bireyleri kanser riski açısından değerlendirip aile hekimine yönlendirmekte, yakın yüzdeler ile %37.6'sı kanser yönünden herhangi bir genetik öykü, şikayet veya belirtisi olmayan 40 yaş ve üzeri kadınların yarısından fazlasını meme kanseri riski açısından değerlendirip aile hekimine yönlendirmekte, %35.6'sı ise herhangi bir kronik hastalığı olmayan, 40 yaş ve üzeri erkeklerin yarısından fazlasını kolon kanseri riski açısından aile hekimine yönlendirmektedir.

Araştırmada aile sağlığı elemanlarının kendilerine başvuran bireyleri kronik hastalıklar açısından değerlendirmeme nedenleri, %83.2'si "yoğunum, vakit bulamıyorum" cevabını vermiştir (Şekil 1).

Aile sağlığı elemanlarının %25.7'si bireylerin yaşam tarzını sormakta, yaşam tarzını değiştirmesine yönelik birlikte fikir alışverişi yapıp yol göstermekte, davranış değişikliğini mutlaka takip ettiğini belirtmektedir. Katılımcıların %45.5'i ise yaptığı girişimleri kısmen yeterli bulmakta, yarısından fazlası (%68.3) kendini geliştirecek yayınlar takip etmektedir. Rehber kitapları en az bir kere takip ettiğini belirtenler %18.9, en az bir kez kendini geliştirecek uzman görüşü takip ettiğini belirtenler %16.9'dur. En az katılım gösterilen faaliyetler ise tıbbi eğitimler/kongre/konferanslardır (Tablo 3).

Aile sağlığı elemanlarının %43.6'sı bazen, daha düşük bir yüzde ile %29.7'si her zaman bireye ve topluma yönelik sağlık eğitimi planlamaktadır. Aile sağlığı elemanlarının gerçekleştirdikleri sağlık eğitimlerine yönelik 223 cevap alınmıştır. Ağız ve diş sağlığı eğitimine cevap %12.6, akıllı ilaç kullanımı %13, sağlıklı beslenme %29.6, bulaşıcı hastalıklar %13, cinsel sağlık %8.5, fiziksel aktivite %7.2, kazalardan korunma %6.3 oranlarında verilirken, kronik hastalıklar hakkında sağlık eğitimi yaptığını belirtenler katılımcıların sadece %1.3'ü (n=3) olmuştur. Diğer seçeneğine ise 19 cevap verilmiştir. Bu cevapların dağılımı incelendiğinde: Risk gruplarına yönelik eğitimler (gebe, adölesan, engelli, bebek) (n=5), tütün, alkol ve uyuşturucu madde kullanımı (n=4), güvenli davranış kazandırma (n=3), çalışan sağlığı (n=3),

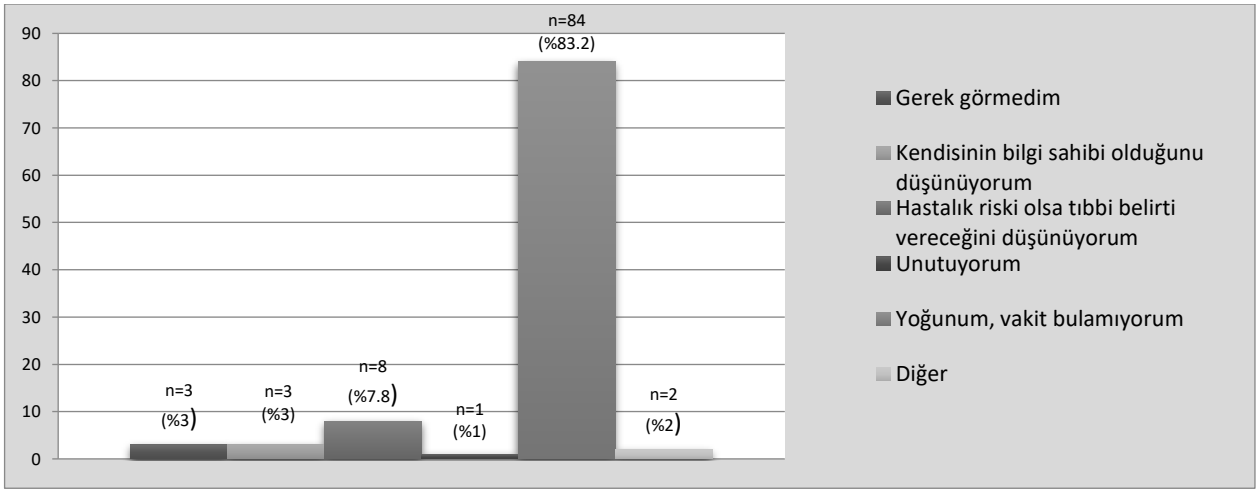
ruh sağlığı (n=2), sağlık okuryazarlığı (n=1) ve çevre sağlığı (n=1) cevaplarının verildiği görülmüştür (Şekil 2). Tablo 4'de aile sağlığı elemanlarının bazı sosyo demografik özelliklerine göre yaptığı sağlığı geliştirme girişimlerini yeterli bulma ve sağlık eğitimi uygulama durumları yer almaktadır. Lisans mezunlarının yarısı yaptığı girişimleri yeterli bulurken, bu oran ön lisans mezunlarında %60'a, lise mezunlarında %92.3'e yükselmekte, öğrenim durumuna göre yaptığı girişimleri yeterli bulma durumu değişmektedir (p=.020). Lise mezunlarının %23.1'i sağlık eğitimi planlamakta, ön lisans ve lisans mezunlarının sağlık eğitimi planlama özelliklerinin benzer olduğu (sırasıyla; %30 ve %31) görülmektedir.

Tablo 2. Aile sağlığı elemanlarının kronik hastalıklara yönelik yaklaşımları.

	Evet, hepsini	Evet, yarısından çoğunu	Evet, yarısından azını	Hayır, hiçbirini
	n(%)	n(%)	n(%)	n(%)
Diyabet				
Sağlıklı bireyleri diyabet riski açısından değerlendirip aile hekimine yönlendirme	21(20.8)	29(28.7)	24(23.8)	27(26.7)
Diyabet haricinde herhangi bir kronik hastalığı bulunan bireyleri diyabet riski açısından değerlendirip aile hekimine yönlendirme	23(22.8)	27(26.7)	18(17.8)	33(32.7)
Diyabet açısından riskli bireyleri sağlıklı beslenme hakkında bilgilendirme	24(23.8)	38(37.6)	26(25.7)	13(12.9)
Diyabet açısından riskli bireyleri fiziksel aktivite hakkında bilgilendirme	24(23.8)	29(28.7)	25(24.8)	23(22.7)
Aile hekimliği birimine başvuran gebeleri gebelik diyabeti açısından değerlendirip glikoz tolerans testi ölçümleri için aile hekimine yönlendirme	78(77.2)	16(15.8)	5(5.0)	2(2.0)
Aile hekimliği birimine başvuran, çocukluk çağı diyabet öyküsü olan bireyleri diyabet ölçümü açısından değerlendirip glikoz tolerans testi ölçümleri için aile hekimine yönlendirme	48(47.5)	24(23.8)	10(9.9)	19(18.8)
Hipertansiyon				
Sağlıklı bireylerin sistolik ve diastolik değerlerini en az bir kere ölçme	35(34.7)	40(39.6)	24(23.7)	2(2.0)
Yüksek tansiyon haricinde herhangi bir kronik hastalığı bulunan bireylerin sistolik ve diastolik değerlerini en az bir kere ölçme	34(33.7)	39(38.6)	25(24.7)	3(3.0)
Adolesanları, adolesan dönem yüksek tansiyon açısından değerlendirip aile hekimine yönlendirme	20(19.8)	22(21.8)	18(17.8)	41(40.6)
Yüksek tansiyon riski olan bireyleri fiziksel aktivite hakkında bilgilendirme	26(25.7)	32(31.7)	23(22.8)	20(19.8)
Yüksek tansiyon riski olan bireyleri tütün kullanımı hakkında bilgilendirme	32(31.7)	25(24.8)	23(22.8)	21(20.7)
Yüksek tansiyon riski olan bireyleri sağlıklı beslenme hakkında bilgilendirme	33(32.7)	32(31.7)	19(18.8)	17(16.8)
Yüksek kolesterol				
Sağlıklı bireylerin en az bir kez total kolesterol düzeylerinin değerlendirilmesi için aile hekimine yönlendirme	18(17.8)	32(31.7)	22(21.8)	29(28.7)
Yüksek kolesterol haricinde herhangi bir kronik hastalığı bulunan bireyleri en az bir kez total kolesterol düzeylerinin değerlendirilmesi için aile hekimine yönlendirme	23(22.8)	30(29.7)	18(17.8)	30(29.7)
Yüksek kolesterol riski olan bireyleri sağlıklı beslenme hakkında bilgilendirme	27(26.7)	33(32.7)	24(23.8)	17(16.8)
Yüksek kolesterol riski olan bireyleri fiziksel aktivite hakkında bilgilendirme	25(24.8)	32(31.7)	26(25.7)	18(17.8)
Yüksek kolesterol riski olan bireyleri tütün kullanımı hakkında bilgilendirme	23(22.8)	30(29.7)	25(24.7)	23(22.8)

Tablo 2 (Devam). Aile sağlığı elemanlarının kronik hastalıklara yönelik yaklaşımları.

	Evet, hepsini	Evet, yarısından çoğunu	Evet, yarısından azını	Hayır, hiçbirini
	n(%)	n(%)	n(%)	n(%)
Obezite				
Sağlıklı bireylerin en az bir kez Beden Kütle İndeksini (BKİ) hesaplama	25(24.8)	34(33.7)	29(28.7)	13(12.8)
Herhangi bir kronik hastalığı bulunan bireylerin en az bir kez BKİ'ni değerlendirme	24(23.8)	34(33.7)	24(23.8)	19(18.7)
Obezite riski olan bireylerin kilo takibini yapma	28(27.7)	31(30.7)	27(26.7)	15(14.9)
Obezite riski olan bireyleri fiziksel aktivite hakkında bilgilendirme	33(32.7)	33(32.7)	23(22.8)	12(11.8)
Obezite riski olan bireyleri tütün kullanımı hakkında bilgilendirme	22(21.7)	33(32.7)	23(22.8)	23(22.8)
Kanser				
Kanser yönünden herhangi bir genetik öykü, şikâyet veya belirtisi olmayan sağlıklı bireyleri kanser riski açısından değerlendirip aile hekimine yönlendirme	25(24.8)	40(39.6)	19(18.8)	17(16.8)
Kanser yönünden herhangi bir genetik öykü, şikâyet veya belirtisi olmayan 40 yaş ve üzeri kadınları meme kanser riski açısından değerlendirip aile hekimine yönlendirme	32(31.7)	38(37.6)	20(19.8)	11(10.9)
Kanser yönünden herhangi bir genetik öykü, şikâyet veya belirtisi olmayan, 40 yaş ve üzeri erkekleri kolon kanseri riski açısından aile hekimine yönlendirme	25(24.8)	36(35.6)	28(27.7)	12(11.9)
Herhangi bir kronik hastalığı bulunan bireylerden kanser öyküsü alma	16(15.9)	26(25.7)	38(37.6)	21(20.8)
Sağlıklı bireylerin alkol tüketim sıklığını sorma	15(14.8)	22(21.8)	30(29.7)	34(33.7)
Herhangi bir kronik hastalığı bulunan bireylere alkol tüketim sıklığını sorma	15(14.8)	23(22.8)	32(31.7)	31(30.7)
Sağlıklı bireylerin sigara kullanma durumlarını sorma	16(15.8)	28(27.7)	34(33.7)	23(22.8)
Herhangi bir kronik hastalığı bulunan bireylerin sigara kullanma durumlarını sorma	15(14.8)	33(32.7)	28(27.7)	25(24.8)
Kanser riski olan bireyleri erken tanı açısından bilgilendirme	33(32.7)	38(37.6)	22(21.8)	8(7.9)
Fazla alkollü içki içme riski olan bireyleri izleme	10(9.9)	18(17.8)	17(16.9)	56(55.4)
Sigara kullanıp bırakan bireylerin tekrar başlama riskini belirleme	10(9.9)	13(12.9)	19(18.8)	59(58.4)

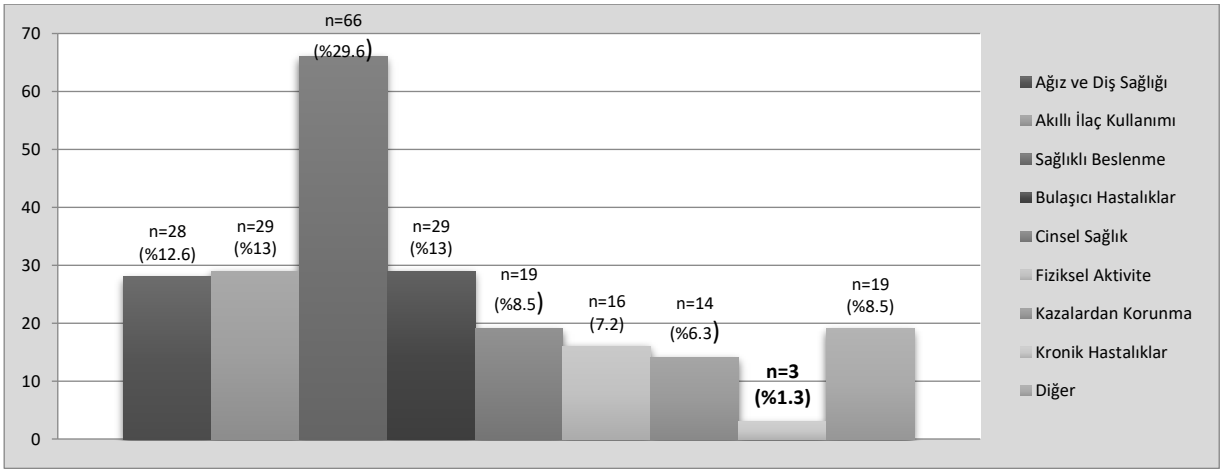


Şekil 1. Aile sağlığı elemanlarının kendilerine başvuran bireyleri kronik hastalıklar açısından değerlendirmeme nedenleri.

Tablo 3. Aile sağlığı elemanlarının bireylerin yaşam tarzına yönelik girişimleri ve yayın takip etme durumlarına ilişkin bulgular.

Bireylerin yaşam tarzına yönelik girişimler	**n(%)**
Bireylerin yaşam tarzını sormam, eğitim yaparım.	14(13.9)
Yaşam tarzını sorarım (beslenme alışkanlığı, fiziksel aktivite düzeyi, stres gibi faktörleri ele alırım), eğitim yaparım	21(20.8)
Yaşam tarzını sorarım (beslenme alışkanlığı, fiziksel aktivite düzeyi, stres gibi faktörleri ele alırım). Yaşam tarzını değiştirmesine yönelik önerilerde bulunurum/eğitim yaparım.	18(17.8)
Yaşam tarzını sorarım (beslenme alışkanlığı, fiziksel aktivite düzeyi, stres gibi faktörleri ele alırım). Yaşam tarzını değiştirmesine yönelik birlikte fikir alışverişi yapıp ona yol gösteririm/eğitim yaparım	22(21.8)
Yaşam tarzını sorarım (beslenme alışkanlığı, fiziksel aktivite düzeyi, stres gibi faktörleri ele alırım). Yaşam tarzını değiştirmesine yönelik birlikte fikir alışverişi yapıp ona yol gösteririm/eğitim yaparım. Davranış değişikliği olup olmadığını mutlaka takip ederim.	26(25.7)
Kronik hastalıkları önlemeye yönelik;	
Yaptığım girişimleri çok yeterli buluyorum.	13(12.9)
Yaptığım girişimleri kısmen yeterli buluyorum	46(45.5)
Kararsızım	17(16.8)
Yaptığım girişimleri kısmen yetersiz buluyorum	15(14.9)
Yaptığım girişimleri yetersiz buluyorum	10(9.9)
Toplam	101(100.0)

Aile sağlığı elemanlarının yayın takip etme durumları	**Evet n(%)**	**Hayır n(%)**	
	69(68.3)	32(31.7)	
Kendini geliştirecek yayınları takip etme durumu	**1 kez 'den az n(%)**	**En az bir kez n(%)**	**1'den fazla n(%)**
Alana özgü kitap okuma	89(88.1)	9(8.9)	3(3.0)
Tıbbi dergi okuma	84(83.2)	11(10.9)	6(5.9)
Uzman görüşlerini takip etme	77(76.2)	17(16.9)	7(6.9)
Rehber kitapçıklar okuma	76(75.2)	19(18.9)	6(5.9)
Tıbbi eğitimler/kongre/konferans katılımı	95(94.0)	3(3.0)	3(3.0)



Şekil 2. Aile sağlığı elemanlarının bireye ve topluma yönelik yaptıkları sağlık eğitimleri

Tablo 4. Aile sağlığı elemanlarının bazı sosyo demografik özelliklerine göre yaptığı girişimleri yeterli bulma ve sağlık eğitimi uygulama durumları.

Yaptığı Sağlığı Geliştirme Girişimlerini Değerlendirme				
Özellikler	**Yeterli**	**Kararsız/Yetersiz**	**Toplam**	**p**
Yaş	**n (%)**	**n (%)**	**n (%)**	
24-37 yaş	25 (56.8)	19 (43.2)	44 (100.0)	0.840*
38-50 yaş arası	34 (59.6)	23 (40.4)	57 (100.0)	
Öğrenim durumu				
Lisans	29 (50.0)	29 (50.0)	58 (100.0)	**0.020**
Ön lisans	18 (60.0)	12 (40.0)	30 (100.0)	
Lise	12 (92.3)	1 (7.7)	13 (100.0)	
Aile sağlığı elemanı olarak hizmet süresi				
0-9 yıl arası	42 (53.8)	36 (46.2)	78 (100.0)	0.098*
10 yıl ve üzeri	17 (73.9)	6 (26.1)	23 (100.0)	
Toplam	59 (58.4)	42 (41.6)	101 (100.0)	
Sağlık eğitimi planlama				
Yaş	**Evet**	**Hayır /Bazen**	**Toplam**	
24-37 yaş	13 (29.5)	31 (70.5)	44 (100.0)	0.976*
38-50 yaş arası	17 (29.8)	40 (70.2)	57 (100.0)	
Öğrenim durumu				
Lisans	18 (31.0)	40 (69.0)	58 (100.0)	0.850
Ön lisans	9 (30.0)	21 (70.0)	30 (100.0)	
Lise	3 (23.1)	10 (76.9)	13 (100.0)	

* Fisher's Exact Test (Ki kare hesaplaması yapılabilmesi için "hayır" ve "bazen"; "kararsız" ve "yetersiz" yanıtları birleştirilmiştir.)

TARTIŞMA

Bu araştırmada aile sağlığı elemanlarının yarısından fazlasının ebelerden, 1/3'ünden daha azının hemşirelerden oluştuğu, yarısından fazlasının "Aile Sağlığı Elemanı Uyum Eğitimi'ne katıldığı belirlenmiştir (Tablo 1). Birinci basamak sağlık hizmetlerinde halk sağlığı hemşireliğinin önemi ve sorumlulukları düşünüldüğünde, hemşire sayısının oldukça az olduğu görülmektedir. Nitekim hemşirelerin kronik hastalıkların yönetimi, hastaları birinci basamak dışına sevk etme ve birinci basamak sağlık hizmetlerinin kullanımını arttırma, ilaç yönetimi, triyaj, hasta komplikasyonlarına yönelik önlemler ve rehberlik sağlamada önemli görevler üstlendiğine dair çalışma sonuçları, hemşirelerin birinci basamak sağlık hizmetlerine dahil edilmesinin önemi vurgulanmıştır (Norfula ve ark., 2017). Ülkemizde aile sağlığı elemanı tanımı içerisine farklı meslek grupları yerleştirilse de birey ve toplum sağlığını geliştirmede mesleki eğitim, bilgi, donanım ve becerinin yanı sıra ilgili meslek mevzuatında yer alan görev ve sorumluluklarının farklı olduğu düşünüldüğünde, sağlık bakım çıktılarının aynı olması beklenemez. Ayrıca lisans eğitimi alan bireylerin sağlığı geliştirme kapsamında yaptıkları girişimlerde kendilerini yeterli bulma düzeyi diğer eğitim düzeylerine göre daha fazladır. Bu bağlamda eğitim düzeyinin de mesleki yetkinlikteki önemi yadsınamaz bir gerçektir. Bir diğer husus aile sağlığı elamanlarının kendi alanlarına özgü eğitimlere katılımı mesleki profesyonelleşme ve standardizasyonu sağlama bakımından göz ardı edilmemelidir. Sağlık bakım hizmetlerinin kalitesi meslek profesyonellerinin bilgi, birikim ve yeterliliklerinden etkilenmektedir. Bilimsel gelişmeler bilginin sürekliliği ve değişen koşullara özgü yenilenmesi gerektiğini ortaya koymaktadır. Bu bağlamda araştırma bulguları mevcut aile sağlığı elemanlarının alana özgü eğitimlere katılım düzeyi ve gereksinimlerinin değerlendirilmesine dair bir fikir sunmaktadır. Bu araştırmada aile sağlığı elemanlarının sağlıklı bireyleri ve diyabet haricinde herhangi bir kronik hastalığı bulunan bireyleri diyabet riski açısından değerlendirip aile hekimine yönlendirme oranı oldukça düşük bulunmuştur. Benzer şekilde diyabet açısından riskli bireyleri sağlıklı beslenme ve fiziksel aktivite hakkında bilgilendirme oranları da çok düşüktür (Tablo 2). Bilindiği üzere Dünya'da ve Türkiye'de diyabetin yaygınlığı önemli bir kronik hastalık olarak giderek artmaktadır. IDF 2019 verilerine göre 20-79 yaş arası 463 milyon yetişkin diyabetle yaşamaktadır. Bu sayının 2045'te 700 milyona çıkacağı tahmin edilmektedir. Türkiye'deki durum incelendiğinde ise yüksek kan şekeri ya da diyabet sıklığının %9.1 olduğu, yüksek kan şekeri ya da diyabet sıklığının kadınlarda (%10.6) erkeklerden (%7.6) daha yüksek olduğu bilinmektedir (STEPS, 2018). Günümüz koşullarında diyabetin hızla artış gösterdiği gerçeğinden yola çıkarak, önlem, kontrol ve yönetiminin etkin olarak yürütülmesinin önemi yadsınamaz. Birinci basamak sağlık hizmetlerinde diyabet açısından riskli bireylerin sağlıklı beslenme ve fiziksel aktivite gibi sağlıklı yaşam tarzları

hakkında bilgilendirmesi, hasta bireylerin kendi kendine yönetim becerilerinin geliştirilmesi gibi yaklaşımlar diyabetin önlenmesi, kontrolü ve etkin yönetiminde önem taşıyacaktır. Nitekim yeni teşhis edilmiş diyabetik hastalarda sağlığı geliştirici müdahaleler, hastaların yaşam tarzı değişikliğine ilişkin bilgi ve tutum seviyelerinde önemli artış sağlamıştır (Rani, 2018). Yüksek tansiyon ve diyabetin hemşireler tarafından izlem ve takibinden sorumlu olduğu en yaygın iki hastalık olduğu, bu spesifik kronik hastalıkları yönetmek için hemşirelerin en sık yaptıkları görevler arasında kan basıncını ve yaşamsal bulguları kontrol etmenin, insülin dozunun ayarlanmasının, diyabetik ayak muayenelerinin yapılmasının, kan şekeri seviyelerinin ölçülmesinin ve diyabetik retinopati taramasının yer aldığı belirlenmiştir (Norfula ve ark., 2017). Birinci basamak sağlık hizmetlerinde kronik hastalıklara yaklaşımın önemli olduğu, sağlıklı yaşam tarzı alışkanlıklarının kazandırılması, diyabetin önlenmesi, kontrolü ve yönetimi ile komplikasyonların önlenmesinde aile sağlığı elemanlarının desteklenmesi gerektiği açıktır. Bu araştırmada aile sağlığı elemanlarının yarısından daha azı sağlıklı bireylerin yanı sıra yüksek tansiyon haricinde herhangi bir kronik hastalığı bulunan bireylerin sistolik ve diastolik değerlerini en az bir kere ölçtüğünü belirtmektedir. Ayrıca aile sağlığı elemanlarının adolesanları, adolesan dönem yüksek tansiyon açısından değerlendirip aile hekimine yönlendirme, yüksek tansiyon riski olan bireyleri fiziksel aktivite, tütün kullanımı ve sağlıklı beslenme hakkında bilgilendirme durumları da düşüktür (Tablo 2). Aile sağlığı elemanlarının sağlıklı bireylerde ve yüksek tansiyon haricinde herhangi bir kronik hastalık bulunan bireylerde yüksek tansiyon riskini yeterince değerlendirmediklerini ve sağlıklı yaşam biçimi davranışlarını yeterince değerlendirmediklerini söyleyebiliriz. Yüksek tansiyon tedavisi için yaşam tarzı değişikliği farmakolojik terapi kadar önemlidir (Choi ve ark, 2018). Yüksek tansiyonu olan hastaların çoğunun, diğer uzmanlar yerine aile hekimleri tarafından birinci basamakta tedavi edildiği (Godwin ve ark., 2015) gerçeğinden yola çıkarak, aile sağlığı elemanlarının aile hekimliğine başvuran bireylerde yüksek tansiyonu önleme ve hastalık yönetimini sağlamada eğitim ve danışmanlık rolünün geliştirilmesi gerektiği söylenebilir. Bu araştırmada aile sağlığı elemanlarının 1/3'ü sağlıklı bireylerin yarısından fazlasının en az bir kez beden kütle indeksini (BKİ) hesaplamakta, 1/3'ü herhangi bir kronik hastalığı bulunan bireylerin en az bir kez BKİ'ne bakmaktadır. Aile sağlığı elemanlarının yarısından fazlası obezite riski olan bireyleri fiziksel aktivite hakkında bilgilendirmekte, yine yarısından fazlası obezite riski olan bireylerin kilo takibini yapmaktadır (Tablo 2). Obezite riski olan bireylerin kilo takibi aile sağlığı elemanlarının yarısından fazlası tarafından yapılıyor olmasına karşın, sağlıklı bireylerde ve herhangi bir kronik hastalığı bulunan bireylerde BKİ izleminin oldukça düşük olduğu görülmektedir. Birinci basamak hizmetlerinde obeziteye yönelik müdahalelerde sağlık profesyonellerinin sağlayacağı danışmanlık hizmetlerinin kilo verme oranını artırmada etkili olduğu bilinmektedir (Tronieri ve ark., 2019). Hastaların Beden Kütle İndeksi değerleri arttıkça birinci basamak sağlık hizmetlerinde çalışan doktor ve hemşirelerin bilgilendirme yapma olasılıklarının arttığı bilinmektedir (Walsh ve ark., 2019). Yapılan araştırmada da obez ve obezite riski olan bireylerin takibinin daha fazla yapıldığı görülmektedir Sağlık profesyonellerinin obezite yönetiminde oldukça etkili olduğu bilinmektedir. Bu bağlamda aile sağlığı elemanlarının obezite hastalarının yanı sıra, sağlıklı bireylerde koruma ve sağlığı geliştirme faaliyeti olarak tarama, izlem ve bilgilendirme faaliyetlerini yürütmenin obeziteyi önlemede etkili olacağı düşünülmektedir.

Bu araştırmada aile sağlığı elemanlarının yarısından fazlası kanser yönünden herhangi bir genetik öykü, şikâyet veya belirtisi olmayan 40 yaş ve üzeri kadınları meme kanser riski açısından değerlendirip aile hekimine yönlendirmekte, 40 yaş ve üzeri erkekleri kolon kanseri riski açısından aile hekimine yönlendirmektedir. Herhangi bir kronik hastalığı bulunan bireylerden kanser öyküsü alma oranı da oldukça düşüktür (Tablo 2). Türkiye Hanehalkı Sağlık Araştırması (STEPS, 2018) kapsamında 5 kişiden 2'sinin kanser taramasının aile sağlık merkezlerinde (ASM) ve Kanser Erken Tanı Tarama ve Eğitim Merkezlerinde (KETEM) ücretsiz olduğunu duyduğu belirtilmiştir. Sağlık hizmetinin duyurulması ya da halkın kanser taramalarını talep etme düzeyinde yetersizlik olabilir. Bu bağlamda kanser taramasının istenilen düzeyde olmamasının nedenlerini ya da çözüm önerilerini ortaya koyabilecek araştırmalara gerek duyulduğu söylenebilir. Ayrıca, sağlık profesyonellerinin kendilerine başvuran bireyleri bilgilendirme faaliyetlerinin önemli olduğu göz önünde tutulmalıdır. Nitekim 40-69 yaş grubundaki beş kadından ikisine hiç mamografi çekilmemesi, "30-65" yaş grubundaki kadınların yaklaşık yarısına hiç serviks kanseri taraması yapılmaması dikkat çekicidir (STEPS, 2018).

Araştırmada aile sağlığı elemanlarının ¼'ü Aile Sağlığı Merkezine başvuran bireylerin yaşam tarzlarını sormakta, yaşam tarzını değiştirmesine yönelik birlikte fikir alışverişi yapıp davranış değişikliğini takip ettiğini belirtmektedir. Kronik hastalık için en etkili ve uygun maliyetli stratejilerin kilo verme, egzersiz ve sigarayı bırakma gibi ilk etapta hastalık gelişimini engelleyen davranışlar olduğu bilinmektedir (Kvedar ve ark., 2016). Yaşam tarzındaki değişiklikler aynı anda birkaç risk faktörünü etkilemektedir. Örneğin, fiziksel aktivite, sağlıklı beslenme ve stres, kilo, kan basıncı, kan lipidleri ve kan şekeri seviyelerinde bir artışa ve uzun vadede kronik hastalık riskinde artışa neden

olmaktadır (Lundberg ve ark., 2017). Türkiye Hanehalkı Sağlık Araştırması (STEPS, 2018) sonuçlarına göre 15 yaş ve üzeri nüfusta her beş kişiden 2'si son 12 ay içinde bir doktor ya da sağlık çalışanı tarafından yaşam tarzına yönelik tavsiye almıştır. Brezilya'da yapılan (2016) bir araştırmada ise hemşirelerin %90'ından fazlasının yüksek BKİ, dislipidemi, yüksek tansiyon ve tip 2 diyabetli hastalarının diyet ve fiziksel aktiviteye aktif olarak katılmalarını, sigara içmekten kaçınmalarını ve alkol alımlarını kontrol etmelerini önerdiği belirlenmiştir (Hidalgo ve ark., 2016). Literatürde hastaların sağlık sonuçlarının deneyimlerinden ve davranışlarından etkilenebileceği dolayısıyla sağlık çalışanlarının hastaların kendi sağlıklarını yönetmelerini etkileyen tüm değişkenleri hesaba katan öz bakım programları tasarlamaları ve uygulamaları tavsiye edilmektedir (Yıldırım, 2021; Yıldırım, 2017). Bu bağlamda aile sağlığı elemanlarının bireylerin yaşam biçimi değişikliği sağlamalarına yönelik hizmet içi eğitimlerle desteklenmesi gerektiğini söylenebilir. Bir diğer husus aile sağlığı elemanlarının yeterince yayın takip etmemesidir. Aile sağlığı elemanlarının tıbbi eğitimler/kongre/konferanslara katılımı teşvik edecek planlamaların önemli olacağı söylenebilir.

SONUÇ

Araştırma bulguları doğrultusunda, aile sağlığı elemanlarının sağlıklı ve hasta bireylerin kronik hastalıklar yönünden izlem aktivitelerinin yanı sıra sağlıklı beslenme, fiziksel aktivite, tütün kullanımı gibi sağlıklı yaşam biçimi davranışlarına yönelik bilgilendirmelerin sıklıkla yapılmadığına ulaşılmıştır. Aile sağlığı elemanları iş yoğunluğunun sağlığı koruyucu ve geliştirici aktiviteler ile etkin kronik hastalık yönetimi önündeki en önemli engel olarak belirtmişlerdir. Aile sağlığı elemanlarının sağlığın geliştirilmesinde önemli unsurlar olan sağlık eğitimi, hastalık yönetimi, izlem süreçlerine özgü rol ve sorumlulukları konusunda farkındalıklarının geliştirilmesine ihtiyaç olduğu söylenebilir. Ayrıca aile sağlığı elemanlarının alana özgü eğitimlere katılımlarının artırılmasının yanı sıra bireylerde davranış değişikliğine odaklanmalarının etkin sağlık bakım hizmetlerindeki önemi vurgulanmalıdır. İleri araştırmalarda aile sağlığı elemanlarına kronik hastalıklarla mücadelede temel rol ve sorumluluklarına özgü yol haritası uygulamalarını kapsayan müdahale çalışmalarının yanı sıra birinci basamak sağlık politikalarında aile sağlığı elemanlarının uygulamalarını güçlendirecek politika çalışmaları önerilmektedir.

Teşekkür

Yazarlar bu çalışmaya katkı veren katılımcılara ve kurumlara teşekkür etmektedir.

Çıkar Çatışması

Yazarlar bu makalede çıkar çatışması olmadığını beyan etmektedirler.

Yazar Katkıları

Plan ve tasarım: EA; **Materyal, metod, veri toplama:** EA, FÖ; **Verilerin analizi ve yorumlanması:** FÖ, EA; **Yazım ve kontrol:** EA, FÖ

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Covid-19 Pandemisi Sürecinde Hemşirelerde Merhamet Yorgunluğu, İş Stresi ve Yaşam Doyumu İlişkisi

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ÖZ

Amaç: Hemşirelerin merhamet yorgunluğu, iş stresi ve yaşam doyumu durumu arasındaki ilişkileri incelemektir. **Gereç ve Yöntem:** Araştırmanın çalışma evrenini Adana ve Mersin ilinde yer alan aile hekimliği birimleri dışındaki sağlık kurumlarında çalışan tüm hemşireler oluşturmaktadır. Oluşturulan çevrimiçi form araştırmacıların bağlantıları doğrultusunda Adana ve Mersin'de görev alan hemşirelere dağıtılmış, ulaşılan hemşirelerden anket formunu kendi bağlantılarına da iletmeleri istenmiştir. Bu kapsamda örneklem amaçlı, kolayda ve kartopu örnekleme yöntemlerinin bir arada kullanılmasıyla elde edilmiştir. Araştırma 305 hemşire ile gerçekleştirilmiştir. Araştırmada Merhamet Yorgunluğu, Yaşam Doyumu ve İş Stresi ölçekleri kullanılmıştır. Elde edilen veriler doğrultusunda bağımsız gruplarda t testi, tek yönlü varyans analizi ve korelasyon analizi yapılmıştır. **Bulgular:** Yaşam doyumu ile iş stresi arasında istatistiksel olarak anlamlı, negatif yönlü zayıf bir ilişki; merhamet yorgunluğu ile iş stresi arasında istatistiksel olarak anlamlı, pozitif yönlü orta düzeyde bir ilişki; merhamet yorgunluğu ile yaşam doyumu arasında ise istatistiksel olarak anlamlı, negatif yönlü ve orta düzeyde bir ilişki olduğu tespit edilmiştir. **Sonuç:** Hem merhamet yorgunluğu hem de iş stresinin hemşirelerin yaşam doyumları ile ilişkisi bulunmaktadır. Bu çerçevede iş stresini ve merhamet yorgunluğunu önleyici tedbirlerin alınması önerilmektedir.

Anahtar Kelimeler: Merhamet Yorgunluğu, İş Stresi, Yaşam Doyumu, Hemşire.

The Relationships Between Compassion Fatigue, Job Stress and Satisfaction with Life in Nurses in the Covid-19 Pandemic Process

ABSTRACT

Objective: To examine the relationships between nurses' compassion fatigue, job stress and life satisfaction. **Materials and Methods:** The study population of the research consists of all nurses working in health institutions other than family medicine units in Adana and Mersin. The created online form was distributed to the nurses working in Adana and Mersin in line with the networks of the researchers, and the reached nurses were asked to forward the questionnaire to their own contacts. The sample was obtained by using purposeful, convenience and snowball sampling methods together. The research was carried out with 305 nurses. Compassion Fatigue, Life Satisfaction and Job Stress scales were used in the study. In line with the data obtained, independent groups t-test, one-way analysis of variance and correlation analysis were performed. **Results:** A statistically significant, negative, and weak relationship between life satisfaction and job stress; a positive moderate relationship between compassion fatigue and job stress, and a negative and moderate relationship between compassion fatigue and life satisfaction have been determined. **Conclusion:** Both compassion fatigue and job stress affect nurses' life satisfaction. In this context, it is recommended to take measures to prevent work stress and compassion fatigue in order to increase life satisfaction.

Keywords: Compassion Fatigue, Job Stress, Life Satisfaction, Nurse.

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GİRİŞ

Sağlık hizmeti üretiminde hemşireler hem sayı olarak hem de iş yükü olarak önemli bir paya sahiptir. Hemşirelerin yüklenmiş oldukları misyon, bir taraftan medikal bir tedavi hizmeti sunarken bir taraftan da hastalar ile duygusal bir iletişim süreci yürütmelerini gerektirmektedir. Sağlık hizmetleri doğası gereği oldukça farklı bir hizmet kullanıcı portföyüne sahiptir. Sağlık işletmelerinde bir yandan hayata gözlerini yeni açan bireylerin sevinci yaşanırken, diğer bir bakış açısından hayatını kaybetme endişesi, tedavi sürecinde duyulan acı ve endişe ve hayata veda edenlerin acısı yaşanmaktadır. Hemşireler, bu süreçlerin neredeyse tümüne eşlik etmektedirler. Dolayısıyla, tüm bakım süreci boyunca, hastalar ile benzer hatta bazen aynı duyguları hissetmekte, acılarını ve endişelerini paylaşmaktadırlar. Bu paylaşıma ek olarak, tedavi hizmeti sunuyor olmaları, sundukları hizmetten şifa bulmayı bekleyen ve bazen bulamayan hastalar ile iletişim kuruyor olmaları, hemşirelerin fiziki yüklerine duygusal ağırlıklar eklemektedir. Meslek hayatları boyunca merhamet, empati, mutluluk, acı, hüzün ve çaresizlik gibi birçok duyguyu sürekli olarak yaşayan hemşirelerin, iş-yaşam doyumları ile fiziki ve duygusal dayanaklılık düzeyleri tüm bu faktörlerden etkilenmektedir. Günümüz literatüründe hemşirelerin yaşadıkları fiziki ve duygusal durumların birlikte ortaya çıkardığı faktörleri irdeleyen merhamet yorgunluğu kavramına olan ilgi de bu çerçevede artış göstermektedir (Xie ve ark., 2021).

Merhamet yorgunluğu kavramı görece yeni bir konseptttir. Kavram hemşirelik bakımı üzerine ilk defa 1992 yılında Joinson tarafından yapılan bir çalışmada kullanılmıştır. Bu ilk bakış açısıyla, asla tam olarak iyileşmesi mümkün olmayan hastalara bakmanın, psikolojik maliyeti olarak da ifade edilmektedir (Figley, 2002). Merhamet yorgunluğu semptomları etrafında irdelendiği zaman, güçsüzlük, depresyon, uyku bozukluğu, devam eden kâbuslar, otonomik uyarılma, hatıralar arası bağlantı kayıpları, araya giren düşünce seansları gibi bir dizi bulgu ile karakterize bir olgu olarak tanımlanmaktadır (Smith, 2007). Bu alan üzerine yapılan ilk çalışmalar birçok farklı grup üzerine olmasına rağmen, ilerleyen dönemlerde gerçekleştirilen çalışmalarda, merhamet yorgunluğu olgusunun hemşirelerde daha yaygın olarak görüldüğü tespit edilmiştir (Yoder, 2010). Yapılan çalışmalar hemşirelerin yalnızca fiziki olarak yorgunluk yaşayan bir meslek grubu olmadığını, ruhsal ve mental olarak da tükenmişlik, stres ve yorgunluk ile karakterize bir iş yaşamlarının olduğunu kanıtlamıştır (Sabo, 2011). Hemşireler, oldukça yoğun ve acı verici tedavi süreçlerinden geçen, hem fiziksel hem psikolojik olarak zorluk yaşayan hasta gruplarına hizmet sunmaktadırlar. Bu hizmetin içeriği tıbbi olmasının yanı sıra, destek olma, güven verme ve konfor sağlama gibi amaçları da içermektedir. Dolayısıyla hizmetin doğasının içerdiği stres ve duygu paylaşımı, hemşireleri merhamet yorgunluğunu daha yaygın ve ağır olarak yaşayan bir grup olarak ön plana çıkarmaktadır (Farrington, 1995). Merhamet yorgunluğunun etkileri hemşireler için oldukça farklı formlarda karşımıza çıkmaktadır. Anksiyete, korku, üzüntü, keder, sinir, öfke, belirsizlik ve savunmasızlık hissi gibi durumların hemşireler tarafından ifade edildiği görülmektedir. Bazı çalışmalarda, tatil veya çalışmaya ara verilmesi halinde dahi etkileri hafiflemeyen fiziksel ve zihinsel bir yorgunluğun yaşandığı raporlanmıştır (Burtson ve Stichler, 2010). Önü alınamaz bir şekilde etkisini artıran merhamet yorgunluğu olgusunun; kişileri kendi yaşamlarının anlamını sorgulamaya, toplumdan izole olmaya, madde kullanımına veya gereksiz/aşırı maddi harcamalar yapmaya yöneltebileceği ifade edilmiştir (Sinclair ve Hamill, 2007).

Literatürde yer alan birçok çalışmada merhamet yorgunluğu, tükenmişlik kavramı ile birlikte incelenmekte, iş ortamının ve çalışma koşullarının yorgunluk üzerine etkileri irdelenmektedir (Kayaoğlu ve Aslanoğlu, 2021; Sevin ve Günüşen, 2021; Wu ve ark., 2016). Çalışma koşulları daha ağır olan ve iş stresini daha yoğun olarak yaşayan hemşirelerin, merhamet yorgunluğu ciddiyetlerinin de daha yüksek olduğu tespit edilmiştir (Ray ve ark, 2013; Zhang ve ark., 2018). Yoğun bakım ve kardiyovasküler cerrahi birimlerinde çalışan hemşirelerin merhamet yorgunluğu düzeylerinin daha yüksek olduğu (Young ve ark., 2011), acil servis hemşireleri üzerine yapılan bir çalışmada da hemşirelerin %80'den fazlasının yüksek düzeyde tükenmişlik ve orta düzeyde merhamet yorgunluğu yaşadıkları tespit edilmiştir (Phillips, 2011). Dolayısıyla bu noktada iş stresinin belirleyici bir faktör olduğu görülmektedir. İş stresi, olumsuz bir duygu durumunu ve fiziksel tepkiyi ifade etmektedir. Bu tepki, çalışanların kendi yetenek ve kapasitelerinin, iş gereklilikleri için yeterli olmadığına inanmaya başladıkları ve fiziki olarak yorgunluk hissetmeye başladıkları noktada ortaya çıkmaktadır (Clegg, 2001). Hemşirelik hizmetlerinde iş yükünün fazla olması, hastalar için duyulan endişe, çalışma arkadaşları ile ilişkilerin bozuk olması, direnç ve çalışma azminin yeterli olmaması gibi bir dizi faktör, iş stresini tetikleyebilmektedir (Muncer ve ark., 2001). Sonuçları raporlanmış olan güncel araştırmalarda, iş stresinin, iş doyumunun anlamlı düzeyde düşürdüğü, bireylerin duygusal olarak çöküntü yaşamasına sebep olduğu ve işten ayrılma niyetlerini arttırdığı bulguları desteklenmiştir (Farbender ve ark., 2019; Lo ve ark., 2018).

İş stresi, tükenmişlik, yorgunluk gibi olgularla ilişkili olarak irdelenen önemli kavramlardan biri de yaşam doyumudur. Yaşam doyumu kavramı, çalışma ortamından kaynaklı faktörleri de içerecek şekilde, hayattan duyulan memnuniyet düzeyini ve öznel mutluluk duygusunu ifade etmektedir (Demerouti ve ark., 2000). Yaşam doyumu ile merhamet yorgunluğu kavramlarının, iki kavramın bileşenlerinde yer alan

unsurlardan dolayı ilişkili olduğu düşünülmektedir. Merhamet yorgunluğu, bireyleri fiziksel, ruhsal ve entelektüel boyutları ile geniş bir alanda etkilemektedir (Coetzee ve Klopper, 2010). Belirtilen faktörler bireylerin yaşam doyumunun önemli belirleyicileridir. Hemşirelerin yaşam doyumu; sosyal yaşamlarındaki faktörlerin yanı sıra, iş yaşamındaki mutluluk düzeyleri ve çalışma koşullarından anlamlı düzeyde etkilenmektedir (Le Blanc ve ark., 2001). Hemşireler nezdinde yapılan çalışmalar, iş stresi ve tükenmişliği yüksek olan hemşirelerin, yaşam doyumlarının da düşük olduğunu göstermektedir (Haik ve ark., 2017). 2021 yılında yapılan başka bir çalışmada da benzer şekilde, hemşirelerin yaşam doyumunun tükenmişlik ve depresyon düzeyleri arasındaki ilişkide anlamlı bir değişken olduğu görülmüştür (Aslam ve ark., 2021).

Bulaşıcı hastalıklarla mücadele sürecinde, hem ağır hastalara tedavi ve bakım hizmeti sunmanın psikolojik ve fiziksel yükünü taşıyan, hem de kendisinin ve yakınlarının hastalık kapmasından endişe eden sağlık çalışanları, yoğun stres ve anksiyeteye maruz kalmaktadır (Kim ve Choi, 2016; Pappas ve ark., 2009). Küresel bir sağlık krizine dönüşen Covid-19 salgını, bakım sürecinin ön saflarında yer alan hemşirelerin olumsuz olarak etkilenmesine ve yoğun bir iş stresi yaşamalarına sebep olmaktadır (Tayyib ve Alsolami, 2020). Yapılan çalışmalar Covid-19 pandemisi kaynaklı olarak ortaya çıkan endişe ve stresin, hemşirelerde yaşam doyumunu da düşürdüğünü ortaya koymaktadır (Aydın ve Fidan, 2021). Benzer bulguların merhamet yorgunluğu özelinde yapılan çalışmalarda da elde edildiği görülmektedir. Covid-19 tanılı hastaların tedavi süreçlerinde yer alan hemşirelerin, merhamet yorgunluğu düzeylerinin daha yüksek olduğu tespit edilmiştir (Ruiz-Fernandez ve ark., 2020).

Aktarılan kavramsal ilişkiler çerçevesinde, hemşirelerin Covid-19 pandemisinde yaşadıkları merhamet yorgunluğu ve iş stresinin, yaşam doyumlarını olumsuz olarak etkileyebileceği görülmektedir. Mevcut çalışmanın amacı, hemşireler nezdinde merhamet yorgunluğu, iş stresi ve yaşam doyumu olguları arasındaki ilişkiyi incelemektedir.

Bu çerçevede araştırmanın temel sorusu; "Hemşirelerin merhamet yorgunlukları ve iş stresleri, yaşam doyumları ile ilişkili midir?" şeklindedir.

GEREÇ VE YÖNTEM

Araştırmanın tipi

Araştırma kesitsel tipte tasarlanan nicel bir araştırmadır.

Araştırmanın yeri ve zamanı

Araştırmanın yeri Mersin ve Adana illeridir. Araştırmanın verileri 03.05.2021-04.06.2021 tarihleri arasında toplanmıştır.

Araştırmanın evreni ve örneklemi

Araştırmanın çalışma evrenini Adana ve Mersin ilinde yer alan aile hekimliği birimleri dışındaki sağlık kurumlarında çalışan tüm hemşireler oluşturmaktadır. Oluşturulan çevrimiçi form araştırmacıların bağlantıları doğrultusunda Adana ve Mersin'de görev alan hemşirelere dağıtılmış, ulaşılan hemşirelerden anket formunu kendi bağlantılarına da iletmeleri istenmiştir. Bu kapsamda örneklem amaçlı, kolayda ve kartopu örnekleme yöntemlerinin bir arada kullanılmasıyla elde edilmiştir. Katılımcıların bilgilendirilmiş onamı ilgili çevrimiçi formda yazılı olarak yer alan ifadeler çerçevesinde alınmıştır. Veri toplama sürecinin sonucunda araştırmaya katılmaya gönüllü olan 305 hemşire araştırmaya dahil edilmiştir. Araştırmaya dahil etme kriterleri veri toplama döneminde aktif olarak bir sağlık kurumunda hemşire olarak çalışıyor olmak ve araştırmaya katılmaya gönüllü olmaktır. Katılmaya gönüllü olmayan ve anket formuna eksiksiz bir şekilde yanıt vermeyenler araştırmadan dışlanmışlardır.

Değişkenler

Araştırmanın bağımlı değişkeni yaşam doyumu iken, bağımsız değişkenler merhamet yorgunluğu ve iş stresidir. Bu değişkenlerin her üçü, genel bilgilere göre incelendiğinde bağımlı değişken konumundadır.

Veri toplama araçları

Araştırmada veri toplama aracı olarak anket formu kullanılmıştır. Anket formu dört bölümden oluşmaktadır. Formun ilk bölümünde cinsiyet, yaş, medeni durum, toplam çalışma süreleri, çalıştıkları kurumların hukuki statüsü, Covid-19 servisinde çalışma durumları ve Covid-19 nedeniyle bir hastanın hayatını kaybetmesine şahit olma durumu olmak üzere yedi sorudan oluşan genel bilgiler yer almaktadır.

Merhamet Yorgunluğu Kısa Ölçeği: Formun ikinci bölümünde "Merhamet Yorgunluğu Kısa Ölçeği (MY-KÖ)" kullanılmıştır. MY-KÖ, Adams vd. (2006) tarafından geliştirilmiş, 13 önerme ve 2 alt boyuttan oluşan 10'lu likert tipi bir ölçektir. Ölçeğin Türkçe'ye uyarlanması, geçerlilik ve güvenilirlik çalışması Dinç ve Ekinci (2019) tarafından gerçekleştirilmiştir. Uyarlama çalışması sonucunda ölçeğin orijinal yapısının Türkçe dilinde de geçerli ve güvenilir olduğu sonucuna ulaşılmıştır. Bu araştırmada MY-KÖ'nin Türkçe formu kullanılmıştır. Ölçek toplam 13 önermeden oluşmaktadır. Önermelerden 5 tanesi "ikincil travma" alt boyutuna, 8 tanesi "mesleki tükenmişlik" alt boyutuna aittir. Ölçeğin puanlanmasında genel toplam kullanılmaktadır. Bu çerçevede ölçekten alınabilecek minimum puan 13, maksimum puan 130'dur. Artan puanlar katılımcıların daha yüksek düzeyde merhamet yorgunluğu deneyimlediklerini ifade etmektedir. İkincil travma alt boyutu Cronbach's alpha katsayısı 0.748, mesleki tükenmişlik alt boyutu Cronbach's alpha katsayısı ise 0.852'dir. Toplam ölçek Cronbach's alpha katsayısı 0.876'dır. Bu katsayılar hem toplam ölçeğin hem de alt boyutlarının güvenilir olduğunu göstermektedir (Dinç ve Ekinci, 2019).

Yaşam Doyumu Ölçeği: Formun üçüncü bölümünde Diener ve arkadaşları (1985) tarafından geliştirilen ve Türkçe uyarlaması Dağlı ve Baysal (2016) tarafından gerçekleştirilen "Yaşam Doyumu Ölçeği (YDÖ)" kullanılmıştır. YDÖ Türkçe formu da orijinal ölçekteki gibi 5 önermeden ve tek boyuttan oluşmuştur. Öte yandan ölçeğin Türkçe formu 5'li Likert türünde bir ölçektir ve Cronbach's alpha katsayısı 0.88'dir. Bu katsayı ölçeğin güvenilir olduğunu göstermektedir.

İş Stresi Ölçeği: Formun son bölümü olan dördüncü bölümünde "İş Stresi Ölçeği (İSÖ)" kullanılmıştır. İSÖ'nün Türkçe uyarlaması Aktaş (1996) tarafından gerçekleştirilmiştir. Ölçek 10 önerme ve tek boyuttan oluşan 5'li Likert tipi bir ölçektir (akt. Aktaş, 2001). Ölçeğin, Cronbach's alpha katsayısı 0.86'dır.

Veri toplama

Ölçek maddelerini ve genel bilgileri de içeren anket formu "Google Formlar" kullanılarak çevrimiçi olarak oluşturulmuştur. Formlar katılımcılara öncelikle araştırmacıların bağlantıları doğrultusunda sosyal medya araçları ve e-mail yöntemleri ile ulaştırılmış, ardından ulaşılan kişilerin ilgili formları aynı yöntemlerle çevrelerine ulaştırmaları talep edilmiştir. Araştırmanın verileri 03.05.2021-04.06.2021 tarihleri arasında toplanmıştır. Bu süre içerisinde araştırmaya katılmaya gönüllü olan 305 hemşire araştırmaya dahil edilmiştir.

İstatistiksel analiz

Araştırmada elde edilen veriler öncelikle tanımlayıcı istatistiklere tabi tutulmuştur. Ardından verilerin normal dağılım gösterip göstermedikleri basıklık ve çarpıklık değerleri ile incelenmiştir. Bu analize göre araştırmanın verileri normal dağılıma uygundur. Verilerin normal dağılması nedeniyle parametrik hipotez testleri kullanılmıştır. Bu çerçevede bağımsız gruplarda t testi, tek yönlü varyans analizi, Pearson korelasyon analizi ve basit doğrusal regresyon analizleri gerçekleştirilmiştir.

Araştırmanın etik yönü

Araştırma için etik kurul onayı Kahramanmaraş Sütçü İmam Üniversitesi Sosyal ve Beşeri Bilimler Etik Kurulu'nun 28.04.2021 tarih ve 2021/23 sayılı toplantısında alınmıştır.

BULGULAR

Katılımcıların %82.6'sı kadın, %49.5'i 18-30 yaş aralığında, %58'i evlidir. %35.7'sinin çalışma süresi 0-5 yıl aralığındadır. %86.2'si bir kamu kurumunda çalışmaktadır ve %58.4'ü pandemi döneminde Covid-19 servisinde çalışmıştır. Katılımcıların %61.6'sı bir hastanın hayatını kaybetmesine şahit olduğunu belirtmiştir. Katılımcıların genel bilgileri Tablo 1'de özetlenmiştir.

Tablo 1. Katılımcıların genel bilgilerine ilişkin bulgular (n=305).

Genel bilgiler		**Sayı**	**Yüzde**
Cinsiyet	Kadın	252	82.6
	Erkek	53	17.4
Yaş	18-30	151	49.5
	31-42	115	37.7
	43-55	38	12.8
Medeni durum	Evli	177	58.0
	Bekâr	128	42.0
Çalışma süresi	0-5 yıl	109	35.7
	5-10 yıl	84	27.5
	10-15 yıl	46	15.1
	15-20 yıl	27	8.9
	20 yıldan fazla	39	12.8
Kurum	Kamu	263	86.2
	Özel	34	11.1
	Kamu-özel ortaklığı	8	2.6
Covid-19 servisinde çalışma durumu	Evet	178	58.4
	Hayır	127	41.6
Bir hastanın Covid-19 nedeniyle hayatını kaybetmesine şahit olma durumu	Evet	188	61.6
	Hayır	117	38.4
Toplam		305	100.0

Katılımcılara ilişkin tanımlayıcı istatistiklerin özetlenmesinin ardından araştırmanın değişkenlerine ilişkin normal dağılım durumu incelenmiştir. Normal dağılımın değerlendirilmesinde basıklık ve çarpıklık değerleri incelenmiş, tüm değişkenlerin basıklık ve çarpıklık değerleri -1.5 ile +1.5 arasında bulunmuştur. Bu çerçevede verilerin normal dağılıma uygun olduğu görülmüştür. Bu nedenle parametrik testler uygulanmıştır. Basıklık ve çarpıklık değerleri Tablo 2'de görülmektedir. Katılımcıların genel bilgilerine göre merhamet yorgunlukları, iş stresleri ve yaşam doyumlarının farklılık gösterip göstermediği incelenmiştir. İki kategorili grupların farklılık analizinde bağımsız gruplarda t testi, ikiden fazla kategorili grupların farklılık analizinde ise tek yönlü varyans analizi kullanılmıştır. Analizler Tablo 3'te özetlenmiştir.

Tablo 2. Verilere ilişkin basıklık ve çarpıklık değerleri (n=305).

	Basıklık	Çarpıklık
İş Stresi	-0.75	-0.48
Yaşam Doyumu	-0.22	-0.45
Merhamet Yorgunluğu	-0.56	-0.33

Tablo 3. Farklılık analizleri (n=305).

Değişkenler		**İş Stresi**		**Yaşam Doyumu**		**Merhamet Yorgunluğu**	
		Ort.±SS	**p**	**Ort.±SS**	**p**	**Ort.±SS**	**p**
Cinsiyet	Kadın	3.54±0.58	0.947*	2.58±0.76	0.510*	6.13±1.99	0.68*
	Erkek	3.53±0.63		2.50±0.88		5.56±2.17	
Yaş	18-30	3.57±0.64	0.693**	2.54±0.79	0.188**	5.97±2.20	0.757**
	31-42	3.51±0.54		2.52±0.73		6.14±1.87	
	43-55	3.53±0.54		2.78±0.89		5.92±1.87	
Medeni durum	Evli	3.57±0.53	0.266*	2.63±0.72	0.104*	6.28±1.87	0.012*
	Bekâr	3.50±0.67		2.48±0.85		5.69±2.21	
Çalışma süresi	0-5 yıl	3.54±0.67	0.393**	2.57±0.82	0.179**	5.68±2.31	0.58**
	5-10 yıl	3.52±0.56		2.47±0.77		6.39±1.95	
	10-15 yıl	3.68±0.48		2.45±0.68		6.49±1.55	
	15-20 yıl	3.40±0.58		2.71±0.61		5.67±1.90	
	20 yıldan fazla	3.52±0.52		2.79±0.89		5.92±1.80	
Kurum	Kamu	3.55±0.59	0.161**	2.57±0.74	0.890**	6.19±1.94	0.002**
	Özel	3.38±0.56		2.60±0.99		4.94±2.39	
	Kamu-özel ortaklığı	3.76±0.53		2.45±1.16		5.39±2.29	
Covid-19 servisinde çalışma durumu	Evet	3.58±0.58	0.168*	2.50±0.75	0.64*	6.38±1.84	0.000*
	Hayır	3.48±0.60		2.66±0.82		5.53±2.19	
Bir hastanın Covid-19 nedeniyle hayatını kaybetmesine şahit olma durumu	Evet	3.66±0.57	0.000*	2.45±0.80	0.002*	6.37±1.92	0.000*
	Hayır	3.34±0.56		2.75±0.72		5.48±2.10	

SS=Standart sapma, *Bağımsız Gruplarda t testi, ** Anova Testi.

Katılımcıların cinsiyetine, yaşına ve çalışma sürelerine göre iş stresi, yaşam doyumu ve merhamet yorgunluğu düzeyleri farklılık göstermemektedir ($p>0.05$). Medeni durumlarına göre iş stresi ve yaşam doyumları farklılık göstermezken ($p>0.05$), merhamet yorgunluğu düzeyleri farklılık

göstermektedir ve evli katılımcıların merhamet yorgunluğu düzeyleri daha yüksektir (p=0.012). Benzer şekilde çalışılan kurum ve Covid-19 servisinde çalışma durumuna göre iş stresi ve yaşam doyumu düzeyleri farklılık göstermemekte (p>0.05), merhamet yorgunluğu düzeyi ise farklılık göstermektedir (p<0.05). Kamu çalışanlarının ve Covid-19 servisinde çalışanların merhamet yorgunluk düzeyleri daha yüksektir. Çalışılan kurumda bir hastanın Covid-19 nedeniyle hayatını kaybetmesine şahit olma durumuna göre iş stresi, yaşam doyumu ve merhamet yorgunluğu düzenleri farklılık göstermektedir (p<0.05). Buna göre bir hastanın hayatını kaybetmesine şahit olanların iş stresi ve merhamet yorgunluk düzeyleri daha yüksek, yaşam doyumu düzeyleri ise daha düşüktür. Araştırma kapsamında her üç değişken arasındaki ilişkileri pearson korelasyon analizi ile incelenmiştir. Analiz Tablo 4'te özetlenmiştir.

Gerçekleştirilen pearson korelasyon analizi neticesinde yaşam doyumu ile iş stresi arasında istatistiksel olarak anlamlı, negatif yönlü zayıf bir ilişki (p=0.00;r=-0.310), merhamet yorgunluğu ile iş stresi arasında istatistiksel olarak anlamlı, pozitif yönlü orta düzeyde bir ilişki (p=0.01;r=0.547), merhamet yorgunluğu ile yaşam doyumu arasında ise istatistiksel olarak anlamlı, negatif yönlü ve orta düzeyde bir ilişki olduğu tespit edilmiştir (p=0.01;r=0.513).

Korelasyon analizinin ardından regresyon analizi temel varsayımlarından olan normal dağılım ve değişkenler arasındaki ilişkilerin anlamlı olduğu varsayımları sağlandığı için basit doğrusal regresyon analizi gerçekleştirilmiştir. Analizde iş stresi ve merhamet yorgunluğunun yaşam doyumu üzerindeki etkisi incelenmiştir. Analize ilişkin bilgiler Tablo 5 'de verilmiştir.

Tablo 4. Değişkenlere ilişkin pearson korelasyon analizi (n=305).

	Ort.±SS	İş Stresi	Yaşam Doyumu	Merhamet Yorgunluğu
İş stresi	3.54±0.59	-		
Yaşam doyumu	2.57±0.78	-0.310*	-	
Merhamet yorgunluğu	6.03±2.03	0.547*	-0.513*	-

*p=0.000.

Tablo 5. Değişkenlere ilişkin regresyon analizi (n=305).

Değişkenler*	B	S.H.	β	t	p
İş Stresi	-0.56	0.78	-0.042	-0.720	0.472
Merhamet Yorgunluğu	-0.189	0.023	-0.489	-8.301	0.000
Sabit	3,909	0.235		16.617	0.000
Toplam	R^2=0.259, F=54.162, p=0.000				

*Yaşam doyumu bağımlı değişken

Gerçekleştirilen analiz neticesinde, regresyon modelinin anlamlı olduğu (p=0.000), iş stresi değişkeninin modele anlamlı katkı sağlamadığı (p=0.472), merhamet yorgunluğunun modele anlamlı katkı sağladığı (p=0.000) tespit edilmiştir. Merhamet yorgunluğu, yaşam doyumunun toplam varyansının %26'sını açıklamaktadır.

TARTIŞMA

Sağlık hizmetleri, yapısında birçok uzmanlık gerektiren mesleklerin bir arada koordineli olarak hizmet verdikleri alanlardır. Bu mesleklerden biri de hemşireliktir. Hemşirelik hizmeti veren sağlık uzmanları bir taraftan tıbbi hizmetleri yürütürken, diğer taraftan da hasta ile etkileşimde bulunmaktadır. Bu durum hemşireleri hem fiziksel hem de duygusal olarak etkilemektedir. Bu araştırmada, hemşirelerin işe bağlı olarak yaşadıkları iş stresi, merhamet yorgunluğu ve yaşam doyumu değişkenleri arasındaki ilişki üzerine durulmuştur. Ayrıca hemşirelerin sosyo-demografik verileri ile bu değişkenler arasındaki farklılıklara da değinilmiştir.

Araştırmada cinsiyet değişkenine göre iş stresi ortalamalarının anlamlı bir farklılık göstermediği gözlemlenmemiştir. Özmutaf (2006), Tokmak, Kaplan ve Türkmen (2011) tarafından yapılan araştırmalarda da benzer sonuçlar görülmektedir. Buna karşın literatürde, kadın hemşirelerin iş stresini daha fazla yaşadıklarını tespit eden çalışmalar da yer almaktadır (Winefield ve Jarett, 2001; Yumuşak, 2007; Öztürk ve Kıraç, 2019). Hemşirelerin yaşı ve çalışma sürelerine göre, iş stresi düzeylerinin farklılaşmadığı tespit edilmiştir. Kısmen yaşın ilerlemesi ile stres azalsa da ortalamaların birbirine yakın olması farkın olmadığını göstermektedir. Erşan ve arkadaşları (2013) ve Koç (2009) tarafından yapılan araştırmalarda benzer sonuçlar tespit edilse de, Tokmak ve arkadaşları (2011) tarafından yapılan araştırmada 40 yaş ve üzeri kişilerde iş stresi daha düşük bulunmuştur. Bu durum yaş ilerledikçe çalışma hayatında edinilen tecrübenin, stresin tolere edilme

düzeyindeki katkısı ile açıklanabilir. Hemşirelerin medeni durumunun iş stresi düzeylerinde anlamlı bir fark yaratmadığı tespit edilmiştir. Özbay (2007) ve Göçeri (2014) tarafından yapılan araştırmalarda da benzer sonuçlar görülmektedir. Katılımcıların kamuda veya özel sektörde çalışmasının, iş stresi düzeyini etkilemediği, araştırmada ulaşılmış olan bir diğer sonuçtur. Tuna ve Baykal (2013) tarafından yapılan araştırmada özel sektörde çalışanlarda daha fazla iş stresinin olduğu tespit edilmiştir. Bu durum bireyin kamuda çalışmayı bir iş garantisi olarak görmesiyle açıklanabilir.

Hastanelerin karmaşık yapısı içerisinde hemşirelerin çok yoğun olarak çalışıyor olması, diğer sağlık personelleri (doktor, tıbbi sekreter vs.), hastalar ve hasta yakınları ile iletişim problemleri yaşaması, hemşirelerin yaşam doyumunu etkilemektedir (Benli ve Yıldırım, 2017; Yavuzer ve Çivilidağ, 2014). İş hayatına yeni başlamış genç hemşirelerin yaşam doyumu bu unsurlardan daha fazla etkilenmektedir. Bu araştırma sonucunda yaş ve çalışma süresinin yaşam doyumu üzerinde bir etkisinin olmadığı tespit edilse de, literatürde yapılan araştırmalarda gençlerin yaşam doyumunun daha düşük olduğu tespit edilmiştir (Eren, 2008). Bu durumun işe yeni başlama ve iş hayatına adapte olmadaki zorluktan kaynaklanabileceği düşünülmektedir. Hemşirelerin cinsiyeti ve medeni durumu ile yaşam doyumu ortalaması arasında da anlamlı bir farkın olmadığı tespit edilmiştir. Literatürde yapılan araştırmalar incelendiğinde, Tekir ve arkadaşları (2016) ve Benli ve Yıldırım'ın (2017) yapmış oldukları çalışmada benzer sonuçlar tespit edilmiştir. Bununla birlikte kadınların ve evli olanların yaşam doyumunun yüksek olduğu çalışmalar da literatürde yer almaktadır (Uslan, 2016; Ünal ve ark., 2001).

Araştırma sonucunda hemşirelerin cinsiyet, yaş ve çalışma süresi değişkenlerine göre merhamet yorgunluğu düzeylerinde anlamlı bir fark olmadığı tespit edilmiştir. Literatür incelendiğinde Sprang ve arkadaşlarının (2007) yapmış oldukları çalışmada kadın sağlık çalışanlarının erkeklere oranla daha fazla merhamet yorgunluğunun olduğu görülmektedir. Acil bakım hizmetlerinde çalışan hemşirelerle yapılan çalışmada yaş değişkeni merhamet yorgunluğu düzeyinde belirleyici bir faktör olmuştur (Kelly ve ark., 2015). Sacco ve arkadaşlarının (2015) yoğun bakım hemşireleri üzerinde yürütmüş oldukları çalışmada da 50 yaş ve üzeri hemşirelerde merhamet yorgunluğu yüksek bulunmuştur. Mevcut araştırma bulguları ile örtüşen yaş değişkeninin merhamet yorgunluğunu etkilemediği araştırmaların da literatürde yer aldığı görülmektedir (Potter ve ark., 2010; Hinderer, 2014; Wentzel ve Brysiewicz, 2018). Çalışma yılı açısından benzer çalışmalar incelendiğinde bulgularımızı destekler şekilde çalışma süresi ile merhamet yorgunluğu arasında farklılık bulunmadığı görülmektedir (Potter, 2010; Hunsaker ve ark., 2014; Hinderer, 2014; Oktay, 2018; Wentzel ve Brysiewicz, 2018).

Araştırma bulgularımıza karşın Jakimowicz ve arkadaşları (2018) 15 yıldan daha fazla çalışan hemşirelerde, Berger ve arkadaşları da (2015) 5 yıldan daha az çalışma yılına sahip hemşirelerde yüksek düzeyde merhamet yorgunluğu olduğu sonucuna ulaşmıştır. Araştırma sonucunda evli katılımcıların merhamet yorgunluğu düzeyleri daha yüksek bulunmuştur. Buna karşın Sacco ve arkadaşlarının (2015) çalışmasında da bekâr olan yoğun bakım hemşirelerinin merhamet yorgunluğu daha yüksek düzeyde bulunmuştur.

Araştırma kapsamında ulaşılan sonuçlarda, hemşirelerin Covid-19 servisinde çalışıp çalışmamaları ile stres düzeyleri ve yaşam doyumları arasında bir bağlantı tespit edilmemiş olmasına rağmen; ölüm olaylarına şahit olmalarının, iş stresi düzeylerini, merhamet yorgunluk düzeylerini ve yaşam doyumu ortalamalarını etkilediği gözlemlenmiştir. Shen ve arkadaşlarının (2020) yaptıkları araştırmada da bu durumu destekleyici sonuçlara ulaşıldığı görülmektedir.

Araştırma sonucunda yaşam doyumu ile iş stresi arasında istatistiksel olarak anlamlı, negatif yönlü zayıf bir ilişki, merhamet yorgunluğu ile iş stresi arasında istatistiksel olarak anlamlı, pozitif yönlü orta düzeyde bir ilişki, merhamet yorgunluğu ile yaşam doyumu arasında ise istatistiksel olarak anlamlı, negatif yönlü ve orta düzeyde bir ilişki olduğu tespit edilmiştir. Ulaşılan sonuçların literatürdeki benzer çalışmalarla desteklendiği görülmektedir. Rourke (2007) merhamet yorgunluğunun bakım verilirken yaşanan stresli deneyimlerin bir sonucu olduğunu açıklamıştır (Rourke, 2007). Pediatri kliniğinde çalışan hemşirelerle gerçekleştirilmiş bir araştırmada, stres düzeyinin merhamet yorgunluğunu arttırdığını, bu durumun da iş doyumunu etkilediği vurgulanmaktadır (Meyer ve ark., 2015). Acil servisteki hemşireler üzerinde yapılan birçok araştırmada da çalışma koşullarından kaynaklanan iş stresinin merhamet yorgunluğuna neden olduğu görülmektedir (Dominguez Gomez ve Rutledge, 2009; Flarity ve ark., 2013; Wentzel ve Brysiewicz, 2014). Hemşireler üzerinde yapılan çalışmalarda hemşirelerin sahip oldukları doyum düzeyinin iş stresini düşürdüğü görülmektedir (Draper ve ark., 2004; Erşan ve ark., 2013). Gribben ve arkadaşlarının (2018) Pediatrik bakım hekimleri ile yürüttükleri araştırmada strese maruz kalmanın merhamet yorgunluğunu arttırdığı sonucuna ulaşılmaktadır.

Araştırmanın Sınırlılıkları ve Güçlü Yönleri

Araştırma, ilgili çalışma evreninde yer alan, araştırmaya katılmayı kabul eden gönüllülerle ve katılımcıların ilgili ankete vermiş oldukları yanıtlarla sınırlıdır. Aynı zamanda pandemi nedeniyle veriler çevrimiçi olarak toplanmıştır. Öte yandan ilgili literatürün incelenmesi Türkçe ve İngilizce dilleri ile mümkün olabilmiştir.

SONUÇ

Araştırma sonucunda iş stresi ile yaşam doyumu arasında negatif, merhamet yorgunluğu arasında da pozitif yön de ilişki tespit edilmiştir. Ayrıca yaşam doyumu ile merhamet yorgunluğu arasında da negatif yönde ilişkiye ulaşılmıştır.

Verilecek olan hizmetin kalitesini etkilediği göz önünde bulundurularak her sağlık çalışanını kapsamakla birlikte hasta ile birebir etkileşim halinde bulunan hemşirelik mesleğinin icrasında çalışma koşullarının ve ortamının iyileştirilmesi hayati öneme sahiptir. Merhamet yorgunluğu ve stres gibi köreltici değişkenleri önleyici stratejilerin geliştirilmesi de önemli bir adım olarak önerilebilir. Ayrıca çalışan hemşire sayısının arttırılması, güdüleyici programların planlanması, açık ve anlaşılır görev tanımlarının olması da iyileştirici adımlar olarak değerlendirilmektedir.

Çıkar Çatışması

Araştırmada herhangi bir çıkar çatışması yoktur.

Yazar Katkıları

Plan, tasarım: SS; **Gereç, yöntem ve veri toplama:** PZ; **Analiz ve yorum:** DÇ; **Yazım ve eleştirel değerlendirme:** SU, RK.

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The Relationship Between the Level of Nursing Students' Awareness of Covid-19 and Their Hygiene Behaviors

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ABSTRACT

Objective: This research was conducted to reveal the level of awareness about Covid-19 and hygiene behaviors among nursing students and to examine the correlation between the two. **Materials and Methods:** The study, in which a descriptive and cross-sectional design was used, was conducted between May 17 and June 18, 2021. The study sample consisted of students who were from the Faculty of Health Sciences of a university and volunteered to participate in the research. Data were collected via an online questionnaire that consisted of three measures, namely a descriptive data form, the Covid-19 Hygiene Scale, and the Coronavirus (Covid-19) Awareness Scale. **Results**: Students' scores on the Covid-19 hygiene scale (103.62±21.95) and the Coronavirus (Covid-19) awareness scale (60.18±14.70) were found to be high. The results of the correlation analysis indicated that the Covid-19 Hygiene Scale had a moderate and positive relationship with the "Awareness of Following Current Developments" subscale and the "Contagion Precaution Awareness" subscale of the Coronavirus (Covid-19) Awareness Scale and a strong and positive relationship with "Hygiene Precaution Awareness" subscale. Besides, a moderate, positive correlation was found between the Coronavirus (Covid-19) Awareness Scale and Covid-19 Hygiene Scale. **Conclusion**: In conclusion, it was found that the awareness level and hygiene behaviors of nursing students participating in our study about Covid-19 were high.

Keywords: Nursing Students, Covid-19, Covid-19 Hygiene Behaviors, Covid-19 Awareness Level.

Hemşirelik Öğrencilerinde Covid-19 Farkındalık Düzeyi ile Hijyen Davranışları Arasındaki İlişki

ÖZ

Amaç: Çalışmanın amacı, hemşirelik öğrencilerinin Covid-19 pandemisi ile ilgili farkındalık düzeylerinin ve hijyen davranışlarının ortaya çıkarılması ve aralarındaki ilişkinin incelenmesidir. **Gereç ve Yöntem:** Araştırma tanımlayıcı ve kesitsel türde olup 17 Mayıs-18 Haziran 2021 tarihleri arasında gerçekleşmiştir. Araştırmanın örneklemini, bir Üniversitenin Sağlık Bilimleri Fakültesi Hemşirelik bölümünde öğrenim gören, araştırmaya katılmaya gönüllü olan öğrenciler oluşturmuştur. Veriler, "Birey Tanıtım Formu," "Koronavirüs (Covid-19) Farkındalık Ölçeği" ve "Covid-19 Hijyen Ölçeği" olmak üzere üç formdan oluşan çevrimiçi bir anket aracılığıyla toplanmıştır. **Bulgular:** Öğrencilerin Covid-19 hijyen ölçeği (103.62±21.95) ve Koronavirüs (Covid-19) farkındalık ölçeği toplam puanları yüksek düzeyde (60.18±14.70) bulunmuştur. Korelasyon analizi sonuçlarına göre; Covid-19 hijyen ile Koronavirüs (Covid-19) farkındalık alt boyutlarından "bulaşma tedbiri farkındalığı" ve "güncel gelişmeleri takip farkındalığı" arasında pozitif ve orta düzeyde bir ilişki, "hijyen tedbiri farkındalığı" alt boyutu arasında ise pozitif ve kuvvetli bir ilişki görülmüştür. Ayrıca Covid-19 hijyen ile Koronavirüs (Covid-19) farkındalık arasında pozitif ve orta düzeyde bir ilişki olduğu belirlenmiştir. **Sonuç:** Sonuç olarak, araştırmamıza katılan hemşirelik öğrencilerinin Covid-19 hakkında farkındalık düzeyinin ve hijyen davranışlarının yüksek olduğu görülmüştür.

Anahtar Kelimeler: Hemşirelik Öğrencileri, Covid-19, Covid-19 Farkındalık Düzeyi; Covid-19 Hijyen Davranışları.

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INTRODUCTION

Due to the transmission of coronavirus from person to person via droplets and contact, individuals should increase their personal hygiene measures and avoid close contact to protect themselves (Kutlu, 2020; Karataş, 2020). Hygiene is the most important precaution that the WHO and the Ministry of Health in Turkey often emphasize to protect against the Covid-19 pandemic (WHO, Retrieved from https://www.who.int/, T.C. Ministry of Health, Retrieved from https://COVID19.saglik.gov.tr/). It is one of the most effective ways to prevent the transmission and spread of microorganisms that cause infection in society. Hygiene behaviors are the body of practices and behaviors related to the prevention of the transmission of infections and are very important in the fight against a highly contagious disease such as Covid-19 (Altun, 2020). The health systems and public policies of countries have a very important place in combating the pandemic; yet the behavior and attitudes of people individually and socially can also be decisive in terms of the course of the pandemic (Bilgin, 2020; Han et al., 2020). Awareness of infectious diseases is important in infection prevention (Altaher et al., 2021). A study on the awareness of individuals indicated that after the Covid-19 pandemic, there was an average of 85-90% increase in individuals' behaviors towards measures, such as cleaning, obeying hygiene rules, and using masks and gloves, and an average of 95% decrease in being in crowded places and using public transportation (Karataş, 2020). In the Covid-19 pandemic, as in other infectious diseases, healthcare professionals are at a high level of risk compared to the rest of society, and the awareness of healthcare workers and prospective healthcare workers about knowledge, behaviors, and treatments relating to the disease is of great significance to find an effective solution to the Covid-19 pandemic (Bali et al., 2021). In addition, health sciences students, who will be responsible for identifying the needs of community and planning healthcare, are representative of both community and health workers. For this reason, their knowledge and skills in this area should be determined and ways to improve them should be found (Andermann, 2016; Kıssal et al., 2020). As far as I know, this is the first research that investigates the association between the Covid-19 awareness level and hygiene behaviors by utilizing measurement tools. The study shows that more comprehensive studies should be conducted on this subject. For these reasons, this study was carried out to uncover the level of nursing students' Covid-19 awareness and their hygiene behaviors about the Covid-19 pandemic, which affects the whole world, and to investigate the relationship between them.

Research questions

1. What is the level of nursing students' awareness about the Covid-19 pandemic, and what factors affect it? 2. What hygiene behaviors do nursing students have during the Covid-19 pandemic, and what factors affect them?
3. What is the correlation between nursing students' level of Covid-19 awareness and hygiene behaviors?

MATERIALS AND METHODS

The sample and design of the study

A descriptive cross-sectional method was utilized in the research. The research was conducted between May 17 and June 18, 2021. The study population involved 1st, 2nd, and 3rd-year students from the Faculty of Health Sciences, Department of Nursing at a university (N=220). This population also made up the sample; therefore, no sampling calculation was used. The sample of the study comprised students who agreed to join the research (n=170).

Data collection instruments

The researchers developed an online questionnaire on Google forms. An online questionnaire, which involved "descriptive data form" "Covid-19 Hygiene Scale" and "Coronavirus (Covid-19) Awareness Scale", was used to collect the study data. An informed consent form was added to the beginning of the online questionnaire, and after individuals gave consent, they proceeded with the following pages and completed the questionnaire online.

Descriptive Data Form: This form consisted of a total of 11 questions about students' age, gender, school year, high school that was graduated, place of residence, level of mother's education, level of father's education, family income, mother's working status, father's working status, and family type.

The Coronavirus (Covid-19) Awareness Scale: It is a five-point Likert-type scale. It has a total of seventeen items, each of which is rated with options ranging from (1) never to (5) always. The subscales are hygiene precaution awareness (HPA), awareness of following current developments (AFCD), and contagion precaution awareness (CPA) (Bilgin, 2020).

The Covid-19 Hygiene Scale: This scale was designed to identify individuals' hygiene behaviors during the Covid-19 process. It has a total of twenty-seven items and six factors, namely, home hygiene, hygiene when coming home from outside, social distance and wear of masks, shopping hygiene, hand hygiene, and changing hygiene behaviors in the pandemic. The lowest and highest scores on the scale are 27 and 135, respectively (Çiçek et al., 2020).

Statistical analysis

Statistical analyses were conducted on the R and JASP software packages. Frequency values and percentages were used for categorical variables, and standard deviation, mean, median, and minimum and maximum values were utilized for continuous variables to present descriptive statistics. The normality of the variables was tested by using the Shapiro-Wilk test. Kruskal Wallis and Mann-Whitney U tests were utilized for comparing continuous variables between independent groups, and Bonferroni corrected Mann Whitney U test for post hoc comparisons. Continuous variables were compared via the Pearson correlation coefficient. A p-value of <0.05 was assumed as statistically significant in all comparisons. In correlation analysis, the correlation coefficient "r" is interpreted as follows: 0 - 0.40, weak correlation; 0.41 - 0.69, moderate level of correlation; 0.71 - 1.00, strong correlation.

Ethical considerations

The study was approved by the Scientific Research Platform of the Ministry of Health and the Clinical Research Ethics Committee of XXX University (Decision no: 2021/05-09; Date: April 28, 2021). The study was conducted following the Helsinki principles. Necessary permission was obtained from the researchers that conducted the validity and reliability study of the scales in the Turkish context. The questionnaire form was delivered to the students online. There was a checkbox at the beginning of the questionnaire to declare that the questionnaire was filled out voluntarily.

RESULTS

The findings indicated that 69.4% of the students were female, 48.8% were freshmen, 27.6% were sophomores, and 23.5% were juniors. Also, 35.3% were 20 years old, 75.9% had graduated from Anatolian high schools, 33.4% were residing in a metropolitan city, and 76.5% had a core family.

The mean score of students on the overall Covid-19 Hygiene Scale was 103.62±21.95. Their mean subscale scores were as follows: changing hygiene behaviors in the pandemic, 22.21±5.11; home hygiene, 15.15±3.82; social distance and wear of masks, 16.67±3.46; shopping hygiene, 17.58±5.29; hand hygiene, 20.69± 4.62; and hygiene when coming home from outside, 11.31±3.20. Students' overall score on the Coronavirus (Covid-19) awareness scale was 60.18± 14.70. Their mean subscale scores were as follows: CPA, 34.15±8.06; AFCD, 13.64±4.53; and HPA, 12.39±3.98 (Table 1). Statistically significant differences were identified between students' gender and mean scores on the overall Covid-19 hygiene scale and "home hygiene," "changing hygiene behaviors in the pandemic," "hand hygiene," "hygiene when coming home from outside," and "social distance and wear of masks" subscales. Female students had higher scores than male students. Also, a significant difference was identified between males and females in terms of their scores on the overall "Coronavirus (Covid-19) awareness" measure, and the "HPA" subscale. Females' mean scores on the overall scale and its subscales were found higher.

Table 1. Students' mean scores from the overall and subscales of the Covid-19 hygiene and coronavirus (Covid-19) awareness scales.

Scales and Subscales	n	Mean±SD	Median	Min.-Max.
The Covid-19 Hygiene Scale				
Changing hygiene behaviors in the pandemic	170	22.21±5.11	23	6-30
Home hygiene	170	15.15±3.82	16	4-20
Social distance and wear of masks	170	16.67±3.46	17.5	4-20
Shopping hygiene	170	17.58±5.29	18	5-25
Hand hygiene	170	20.69±4.62	22	5-25
Hygiene when coming home from outside	170	11.31±3.20	12	3-15
Overall Covid-19 hygiene	170	103.62±21.95	108	27-135
The Coronavirus (Covid-19) Awareness Scale				
CPA	170	34.15±8.06	35	9-45
AFCD	170	13.64±4.53	14	4-20
HPA	170	12.39±3.98	12.5	4-20
Overall Coronavirus (Covid-19) awareness	170	60.18±14.70	61.5	17-85

CPA=Contagion Precaution Awareness, AFCD=Awareness of Following Current Developments, HPA=Hygiene Precaution Awareness.

Students' scores on the "hand hygiene" subscale yielded a statistically significant difference according to the education level of the mother. The significant difference was between students with mothers who were literate and those with mothers who were high school/university graduates. Another statistically significant difference was observed between students' mean scores on the overall "Coronavirus (Covid-19) Awareness Scale" and its subscales according to the level of mothers' education. The significant difference was between students with mothers who were literate and those with mothers who were high school/university graduates.

Students' scores on the "social distance and wear of masks," "home hygiene," "shopping hygiene," "hygiene when coming home from outside," "hand hygiene," and the overall "Covid-19 Hygiene Scale" showed a statistically significant difference according to the education level of the father.

Another statistically significant difference was observed between the mean scores of students on the overall "Coronavirus (Covid-19) Awareness Scale" and its subscales according to the education groups of fathers.

Students' scores on the subscales of the hygiene scale and the overall "Covid-19 Hygiene Scale" did not show a statistically significant difference in terms of income. The mean scores on the overall "Coronavirus (Covid-19) Awareness Scale" and its subscales did not show a statistically significant difference between income groups (Table 2).

Table 2. Comparison of students' mean scores from the overall and subscales of the Covid-19 hygiene and coronavirus (Covid-19) awareness scales and subscales according to some socio-demographic characteristics.

Characteristics		Changing Hygiene Behaviors in The Pandemic	Home Hygiene	Social Distance and Wear of Masks	Shopping Hygiene	Hand Hygiene	Hygiene When Coming Home from Outside	Overall Covid-19 Hygiene	CPA	AFCD	HPA	Overall Coronavirus (Covid-19) Awareness
Gender	Female	22.70±4.93	15.69±3.67	17.11±3.30	17.82±5.33	21.40±4.23	11.88±2.94	106.60±20.86	34.78±8.04	14.15±4.11	13.14±3.68	62.08±14.33
	Male	21.08±5.38	13.94±3.91	15.67±3.63	17.04±5.21	19.10±5.10	10.02±3.42	96.85±23.03	32.73±7.99	12.46±5.23	10.67±4.12	55.87±14.75
	Test statistics	**0.037**	**0.004**	**0.007**	**0.283**	**0.004**	**0.001**	**0.003**	**0.094**	**0.051**	**<0.001**	**0.010**
Mother's education	Literate	22.49 ±5.48	14.83±4.11	15.98±3.81	17.15±5.29	19.12±5.24	10.32±3.39	99.88±24.09	32.98±7.87	12.27±4.47	11.05±4.17	56.30±14.04
	Primary school	21.99 ±5.22	15.31±3.79	16.67±3.39	17.40±5.51	20.84±4.49	11.49±3.18	103.72±21.96	33.42±8.25	13.46 ± 4.74	12.60±3.91	59.47±15.17
	High school /University	22.40 ±4.55	15.13±3.64	17.38±3.18	18.43±4.80	21.98±3.82	11.93±2.89	107.23±19.40	37.00±7.28	15.43±3.54	13.30±3.67	65.73±12.91
	Test statistics	**0.736**	**0.876**	**0.212**	**0.528**	**0.030**	**0.071**	**0.382**	**0.032**	**0.006**	**0.033**	**0.011**
Father's education	Literate	20.00±6.38	13.32± 3.83	14.00±3.70	12.79±4.21	16.68±5.01	8.16±3.04	84.94±20.98	30.32±7.46	10.63±4.75	8.79±2.82	49.74±11.93
	Primary school	22.87±4.54	15.70±3.70	16.95±3.15	18.25±5.18	20.9±4.24	11.83±2.80	106.60±19.95	33.74±7.95	13.60±4.34	12.68±3.63	60.01±14.21
	High school /University	21.85±5.3	14.92±3.87	16.98±3.56	18.25±5.07	21.33±4.52	11.41±3.29	104.38±22.68	35.56 ±8.08	14.39±4.42	13.00±4.28	62.95±14.94
	Test statistics	**0.214**	**0.042**	**0.003**	**<0.001**	**0.001**	**<0.001**	**0.001**	**0.022**	**0.009**	**<0.001**	**0.001**
Level of income	Income<expenses	21.03±5.97	13.83±4.45	15.75±3.64	16.14±5.99	19.11 ± 5.41	10.28±3.63	96.14±25.46	33.86±8.04	12.94±5.03	11.36±4.32	58.17±15.32
	Income = expenses	22.69 ±4.77	15.45±15.45	16.88±16.88	17.67±17.67	21.04 ± 21.04	11.54±11.54	105.27±20.57	33.93±8.15	13.75±4.33	12.55±3.82	60.23±14.41
	Income>expenses	21.80±5.14	15.76± 3.94	17.08±3.60	19.28±4.65	21.48 ± 4.34	11.80±3.25	107.20±20.82	35.56±7.85	14.12 ± 4.73	13.16 ±4.03	62.84±15.22
	Test statistics	**0.383**	**0.127**	**0.122**	**0.099**	**0.111**	**0.153**	**0.184**	**0.572**	**0.565**	**0.188**	**0.444**

CPA=Contagion Precaution Awareness, AFCD=Awareness of Following Current Developments, HPA=Hygiene Precaution Awareness.

The correlation analysis indicated that there was a positive and moderate correlation between students' mean scores on the Covid-19 Hygiene Scale and contagion precaution awareness (CPA) subscale (r=0.582, p<0.001), a moderate, positive correlation with awareness of following current developments (AFCD) subscale (r=0.515, p<0.001), and a strong, positive correlation with hygiene precaution awareness (HPA) subscale (r=0.751, p<0.001). Besides, there was a moderate, positive correlation between the mean scores of students on the Coronavirus (Covid-19) Awareness and Covid-19 Hygiene Scales (r=0.682, p<0.001) (Table 3).

Table 3. The relationship between Covid-19 Hygiene Behaviors and Coronavirus (Covid-19) Awareness.

	1	2	3	4	5	6	7	8	9	10
1. Changing hygiene behaviors in the pandemic	-									
2. Home hygiene	r=0.698 p<0.001	-								
3. Social distance and wear of masks	r=0.576 p<0.001	r=0.629 p<0.001	-							
4. Shopping hygiene	r=0.603 p<0.001	r=0.648 p<0.001	r=0.557 p<0.001	-						
5. Hand hygiene	r=0.542 p<0.001	r=0.611 p<0.001	r=0.770 p<0.001	r=0.569 p<0.001	-					
6. Hygiene when coming home from outside	r=0.626 p<0.001	r=0.693 p<0.001	r=0.663 p<0.001	r=0.686 p<0.001	r=0.746 p<0.001	-				
7. Overall Covid-19 Hygiene	r=0.801 p<0.001	r=0.841 p<0.001	r=0.806 p<0.001	r=0.832 p<0.001	r=0.816 p<0.001	r=0.865 p<0.001	-			
8. CP	r=0.380 p<0.001	r=0.449 p<0.001	r=0.647 p<0.001	r=0.417 p<0.001	r=0.577 p<0.001	r=0.497 p<0.001	r=0.582 p<0.001	-		
9. AFC	r=0.418 p<0.001	r=0.458 p<0.001	r=0.515 p<0.001	r=0.343 p<0.001	r=0.477 p<0.001	r=0.459 p<0.001	r=0.515 p<0.001	r=0.659 p<0.001	-	
10. HPA	r=0.553 p<0.001	r=0.650 p<0.001	r=0.643 p<0.001	r=0.631 p<0.001	r=0.604 p<0.001	r=0.689 p<0.001	r=0.751 p<0.001	r=0.702 p<0.001	r=0.662 p<0.001	-
11. Overall Coronavirus (Covid-19) Awareness	r=0.487 p<0.001	r=0.56 p<0.001	r=0.686 p<0.001	r=0.504 p<0.001	r=0.626 p<0.001	r=0.600 p<0.001	r=0.682 p<0.001	r=0.930 p<0.001	r=0.843 p<0.001	r=0.856 p<0.001

CPA=Contagion Precaution Awareness, AFCD=Awareness of Following Current Developments, HPA=Hygiene Precaution Awareness.
*Pearson correlation analysis.

DISCUSSION

The level of awareness of Covid-19 and hygiene behaviors of nursing students of the faculty of health sciences and the relationship between awareness levels and hygiene behaviors were examined in this study.

It is vital to combat such a dangerous and deadly virus that affects the whole world. Therefore, to take the right and necessary steps, it is very important to be aware of what is being faced (Tekgöz Obuz et al., 2021). In the present study, students' mean scores on the overall Coronavirus (Covid-19) Awareness Scale (60.18 ± 14.70) and CPA (34.15 ± 8.06), AFCD (13.64 ± 4.53), and HPA (12, 39 ± 3.98) subscales indicated that students' awareness levels were high. Our findings were consistent with recent studies that were conducted throughout the world to investigate awareness levels about Covid-19 and indicated a good level of knowledge and awareness in their study populations (Altaher et al., 2021; Das et al., 2020). Modi et al. (2020) evaluated the awareness of health department students and healthcare professionals about the Covid-19 disease and practices of infection control related to it in Mumbai and stated that the rate of all groups answering the questions about Covid-19 correctly was 71.2% (Modi et al., 2020). Zhou et al. (2020) conducted a study about the correlation between awareness about Covid-19 and mental health and they stated that awareness of Covid-19 was a protective factor against symptoms of depression and anxiety (Zhou et al., 2020). According to some studies in the literature, Covid-19-related mortality can be reduced through awareness, official information sources can be used to increase awareness, and as a result, high levels of situational awareness will lead to the adoption of health protection behaviors (Qazi et al., 2020; Abdelhafiz et al., 2020; Nazir et al., 2020; Ekiz et al., 2020).

One of the important issues to be aware of about Covid-19 is knowledge and behavior about hygiene. Hygiene is an important issue related to the protection of health at almost every stage of human life and is defined as a science that involves applicable knowledge to sustain the environment and human health (Gürpınar et al., 2020). Developing personal hygiene habits is of vital importance in eliminating health problems and preventing infectious diseases (Ödek, 2018).

Hand hygiene behaviors and handwashing practices of nursing students are expected to be high as they receive education and develop skills in this area. In this study, the mean scores of the students on the overall Covid-19 hygiene scale, which was found as 103.62 ± 21.95, and its subscales were high. Similar to our study, Altaher et al. stated that most of the participants in their study had high levels of personal hygiene and health practices during the Covid-19 pandemic (Altaher et al., 2021). In another similar study by Yuksel Kacan, it was found that students' scores on the hand hygiene practice were high (Yuksel Kacan, 2021). Also, Karadag et al. found moderate levels of knowledge, practices, perceptions, and beliefs in nurses and students regarding the importance of hand hygiene (Karadag et al., 2016). Similar to our study, it was stated in the literature that the practices for hand washing during the Covid-19 pandemic were high (Kalkan Uğurlu et al., 2020; Işık & Can, 2021; Ünal et al., 2020). Especially during the pandemic, developing hygiene behaviors and ideally applying them will reduce transmission to a great extent. In this study, female students' mean scores on the "home hygiene," "changing hygiene behaviors in the pandemic," "hand hygiene," "hygiene when coming home from the outside," and "social distance and wear of masks" subscales and the overall "Covid-19 hygiene scale" were higher. Similar to the findings of our study, Ödek (2018) stated that the difference between gender and personal hygiene scores was statistically significant (Ödek, 2018). Also, Yuksel Kacan found that female students had higher scores on the Hand Hygiene Practices Inventory (HHPI) than male students (Yuksel Kacan, 2021). In addition, Çetinkaya et al. stated that the hygiene-safety and travel risk perceptions of males and females differed (Çetinkaya et al., 2020). According to these findings, it can be said that females have more knowledge about hygiene than males and reflect this into their practice. In a study, female participants stated that they would behave more rationally and protect themselves when faced with a risk for human-to-human transmission (Peng et al., 2020). A statistically significant difference was identified between the male and female students' scores regarding only the "HPA" subscale and the overall "Coronavirus (Covid-19) Awareness Scale" in this study. Females had higher scores.

In this study, a statistically significant difference was observed regarding only the "hand hygiene" subscale according to the educational status of mothers. However, the comparison of the education groups of mothers in terms of the overall score of the "Covid-19 Hygiene Scale" did not yield a statistically significant difference. Significant differences were also observed between students' scores on the "social distance and wear of masks," "home hygiene," "shopping hygiene," "hygiene when coming home from the outside," and "hand hygiene" subscales and the overall "Covid-19 Hygiene Scale" according to father's education level. Ödek (2018) reported that the education level of parents and personal hygiene habits did not yield significant differences (Ödek, 2018). Yılmaz and Özkan (2009) concluded that there was a statistically significant difference between the hygiene habits of students and the education levels of their mothers and fathers (Yılmaz and Özkan, 2009). It can be thought that these differences stem from sample groups and sizes.

Education level is associated with access to information and awareness necessary for a healthier life (Usta Atmaca et al., 2015). Studies have shown that education level and income level affect the level of knowledge about the pandemic and that as the income level and education level increase, the level of individuals' knowledge increases, as well (Sizer et al., 2020; Al-Hanawi et al., 2020; Li et al., 2020).

In this study, the effect of the mother and father's education on students' awareness of the Coronavirus (Covid-19) was also examined. A statistically significant difference was observed between the education levels of mothers regarding their mean scores on the overall and subscales of the Coronavirus Awareness Scale. A significant difference was observed between the

education levels of fathers regarding their mean scores on the Coronavirus Awareness Scale and its subscales. As a result of these findings, it can be said that the education level of parents affects the awareness level of the nursing students about the Coronavirus.

In this study, no statistically significant difference was identified between students' mean scores on the overall Covid-19 hygiene scale and its subscales according to income status. Contrary to this study, Kalkan Uğurlu et al. found a statistical difference between income level and scores on handwashing attitudes (Kalkan Uğurlu et al., 2020). Çetinkaya et al. determined that the frequency of hygiene behaviors was higher in schools with a high socioeconomic level (Çetinkaya et al., 2005). This difference may have originated from the differences in the characteristics of the sample group and its size in their study.

In the current study, unlike studies in the literature, no statistically significant difference was identified between income groups regarding their mean scores on the overall "Coronavirus (Covid-19) Awareness Scale" and its subscales. It can be thought that this difference was due to the difference in the sample group and its size.

The results of correlation analysis indicated that there was a moderate and positive correlation between the mean scores on the overall Covid-19 Hygiene Scale and the Coronavirus Awareness Scale. It was observed that nursing students' awareness levels about Covid-19 were related to Covid-19 hygiene behaviors. It was observed that there was an improvement in Covid-19 hygiene behaviors as the level of awareness about the coronavirus (Covid-19) increased.

CONCLUSION

In conclusion, nursing students participating in this study had a high level of awareness and hygiene behaviors about Covid-19. There was a positive and moderate correlation between students' mean scores on the Covid-19 Hygiene Scale and CPA subscale, a moderate, positive correlation with AFCD subscale, and a strong, positive correlation with HPA subscale. Besides, there was a moderate, positive correlation between the mean scores of students on the Coronavirus (Covid-19) Awareness and Covid-19 Hygiene Scales.

It is thought that studies on awareness and hygiene about pandemic diseases are important in measuring the knowledge and behavior of health workers to prevent the Covid-19 pandemic and that these studies will contribute to public health practices related to pandemic diseases. To find an effective solution to the Covid-19 pandemic, it is recommended that more comprehensive studies be carried out on the awareness of prospective health professionals about their knowledge of and behaviors and attitudes towards the disease.

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Conflict of Interest

The author declares no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: ÖT; **Material, methods and data collection:** ÖT; **Data analysis and comments:** ÖT; **Writing and corrections:** ÖT.

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Evaluation of the Effect of Play Therapy on Separation Anxiety among Preschool Children: A Randomized Controlled Study

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ABSTRACT

Objective: The efficiency of play therapy on separation-anxiety among preschool-children was evaluated as an experimental study including a pretest-posttest controlled-group. **Materials and Methods:** The population of the study consisted of 292 preschool children in the 3-5 age group who were educated in two kindergartens. The sample-size calculated by power-analysis included 30 preschool-children in experimental- and 30 in the control-group. Data was collected by the demographic information form, Separation-Anxiety Scale for Preschool Children, and Revised Preschool Anxiety Scale. Six-sessions of the 'Play Therapy Program' were applied to the experimental-group. **Results:** A higher decrease in separation-anxiety in the experimental-group compared to the control-group was observed when the change in total mean score from the Separation-Anxiety Scale was evaluated. When the total mean score of the Revised Preschool Anxiety Scale and the changes in sub items were assessed, the decrease in separation-anxiety in the experimental-group after training was statistically significant. **Conclusion:** This program was efficient in reducing separation-anxiety in kindergarten. Both teachers and parents of the children included in the study reported that play therapy is an effective method for reducing separation anxiety.
Keywords: Preschool Children, Separation Anxiety, Play Therapy, Teacher.

Okul Öncesi Çocuklarda Oyun Terapisinin Ayrılık Kaygısı Üzerine Etkisi: Randomize Kontrollü Çalışma

ÖZ

Amaç: Okul öncesi çocuklarda oyun terapisinin ayrılık kaygısı üzerine etkisini değerlendirmek amacıyla yapılan ön test-son test kontrol gruplu deneysel bir çalışmadır. **Gereç ve Yöntem:** Araştırmanın evrenini, iki ana okulda eğitim gören 3-5 yaş grubu 292 okul öncesi çocuk oluşturmuştur. Power analizine göre hesaplanan örneklem büyüklüğü deney grubunda 30; kontrol grubunda 30 toplam 60 okul öncesi çocuk üzerinde yapılmıştır. Verilerin toplanmasında; demografik bilgi formu, yeniden düzenlenen Okul Öncesi Kaygı Ölçeği ve Yuva Çocukları İçin Ayrılma Kaygı Ölçeği (Öğretmen Formu) kullanılmıştır. Deney grubuna altı oturumdan oluşan "Oyun Terapisi Programı" uygulanmıştır. **Bulgular:** Ayrılma kaygı ölçeği toplam puan ortalamasındaki değişim değerlendirildiğinde; deney grubunda olan çocukların eğitim sonrası ayrılık kaygısındaki düşüş kontrol grubuna göre daha fazladır. Yeniden düzenlenen okul öncesi kaygı ölçeği toplam puan ortalaması ve alt maddelerdeki değişim değerlendirildiğinde; deney grubunda olan çocukların eğitim sonrasında meydana gelen ayrılık kaygısındaki düşüş istatistiksel olarak anlamlı bulunmuştur ($p<0.000$). **Sonuç:** Uygulanan programın, anaokulundaki çocuklarda ayrılık kaygısını azaltmada etkili olduğu bulunmuştur. Çalışmaya dahil edilen çocukların hem öğretmenleri hem de ebeveynleri oyun terapisinin ayrılık kaygısını azaltmada etkili bir yöntem olduğunu bildirmişlerdir.
Anahtar Kelimeler: Okul Öncesi Çocuklar, Ayrılık Kaygısı, Oyun, Oyun Terapi, Öğretmen.

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INTRODUCTION

The preschool period is a period when children jointly perform group and symbolic plays. This period is the time when brain development and the establishment of synaptic connections are very fast among children. Children in this age group are able to start a play, learn some rules during the play, play games with other children, pay attention to things that interest them, think concretely and magically, whereas they are not able to predict the outcomes of the things they do, establish a connection between their behaviors and protect themselves (MEB, 2013; TTB, 2012).

Preschool education includes the years from the time the child was born to the basic education she/he has gained in primary school. It is defined as the educational process in which children highly complete their mental, physical, social, linguistic, psychomotor, and emotional development, which plays important roles in their past lives and their personalities develop and take shape with the education given in families, social environments, and schools (Abazaoğlu et al., 2015; Oktay, 1990; Seven, 2014).

Separation anxiety, frequently encountered in the pre-school period, is the individual's state of anxiety when he/she leaves the mother or attachment figure or when he/she expects to leave (APA, 2013; Bowlby, 1959). It is affected by the fact that the mother has a high level of unconditional attachment, the family has a weak attachment, the mother has an obsessive attachment, the parents are very anxious and the family is divorced (Can, 2015; Malak & Khalifeh, 2018). The separation anxiety is experienced much more intensely by the children, especially when having a mother with high separation anxiety. Whether the children have a sibling also affects the separation anxiety. The separation anxiety of children in families with one child is higher compared to families with two or more children (Battaglia et al., 2016; Çetin, 2017; Küçüködük, 2015). Regarding the child's age group, separation anxiety decreases as the age of the child increases (Küçüködük, 2015).

In a study by Warren et al. (2020) with 45 children, they found that children exposed to intense stress and anxiety-inducing situations experienced deterioration in their brain normals during functional magnetic resonance scans, and their emotion regulation and decision-making skills were negatively affected (Warren et al., 2020).

During the preschool period, play is a natural way of learning that has a universal aspect and is fulfilled by the child with or without a tool, with which the child is playing willingly and with pleasure and affects all the developmental areas of the child with or without rules for a specific purpose or unintentionally wherever he/she is (Koçyiğit et al., 2007).

Games played during the childhood period are effective in raising healthy individuals in terms of mental, physical, social, and cultural aspects. Children who are matured by playing games are luckier than other individuals in achieving success in life, self-realization, and happiness (Gökşen, 2014). Toys played by this age group help children improve their personality development, social relationships, physical skill development, feelings of patience and sharing, reasoning and creative thinking (Arslan, 2017; Kılınç & Saltık, 2020).

Play therapy during the preschool period is a multidisciplinary nursing approach and intervention that has been performed and developed to improve the emotional, social, and behavioral skills of preschool children (Sezici et al., 2017). Play therapy helps preschool children to improve their emotional, social and behavioral skills. It also decreases their levels of anxiety and fear, enhances their self-esteem, and helps them improve their self-respect and communication skills. The use of play therapy is recommended among the basic requirements of nursing and in the profession of pediatric nursing (Sezici et al., 2017). Play therapy, which is used by the nurses during hospitalization of children, contributes to the reduction of anxiety in the child, their adaptation to the environment and the development of their sense of trust (Davidson et al., 2017; Patel et al., 2014; Ramdaniati & Hermaningsih, 2016; Yati et al., 2017).

MATERIALS AND METHODS

Type of the study

This study is an experimental study conducted by applying pretest-posttest control group to evaluate the effect of play therapy on separation anxiety in preschool children.

Universe and sample of the study

The universe of the study was composed of the students in the age group of 3-4-5 (N:292) who were studying in two kindergartens located in Zonguldak during the 2017-2018 academic year. No sample was selected in the study, and it was conducted on the whole universe.

The sample size of the study was determined to be a total of 60 preschool children, including 30 in the control group and 30 in the experimental group, by a power analysis with a confidence interval of 80% and an error rate of ± 5%. Children included in the sample (60) were randomly assigned to study and control groups. These children were randomized into two groups (study and control), each including 30 children, with the help of a computer program.

Inclusion criteria of the study

The sample of the study included kindergarten children:

- who were attending the classes for the 3-4-5-year-old group,
- who had just started going to kindergarten for the first time,
- whose parents were willing to participate in the study and provided written and verbal consent,
- who were continuing their education in the morning-afternoon education group.

Data collection instruments

• Demographic Information Form
• The Separation Anxiety Scale for Kindergarten Children (Teacher Form)
• The Revised Preschool Anxiety Scale was used to collect data (Parent Form)

Demographic Information Form: A short information form was prepared and applied to the parents who agreed to participate in the study and their children to learn about their personal information in addition to the determination of separation anxiety on the scales.

The Separation Anxiety Scale for Kindergarten Children (Teacher Form): The validity and reliability studies of The Separation Anxiety Scale for Kindergarten Children were performed by Akman (1987). At the end of the analyses, Cronbach's alpha coefficient for internal consistency of the scale was found to be between 0.35 and 0.94; and two half-test reliability was found to be 0.96 (Akman, 1987). The Separation Anxiety Scale for Kindergarten Children (Teacher Form) is a scale composed of 25 items. Scale items are behaviors that children can exhibit, and adults can observe as an anxious expression of separation anxiety. Each item is marked by the teacher on a 5-likert scale (1= never; 5= always).

Revised Preschool Anxiety Scale (Parents Form): The Revised Preschool Anxiety Scale was developed by Edwards et al. (2010) for the 3-6 year-old group, and its validity and reliability study was performed by Güler (2016).

The Revised Preschool Anxiety Scale is composed of 30 items in the parent form. Scale items include behaviors that can be exhibited by children and observed by adults as an expression of separation anxiety. Each item is scored by the parents appropriately on a 5-likert type grading (0=not at all true, 4=very often true). At the end of the analysis, Cronbach's alpha coefficient was found to be at a level of 0.90 for internal consistency of the scale; and McDonald Omega value was found to be 0.92. Its distinctiveness was detected to be between 5.40 and 14.90 based on the results of analysis (Güler, 2016).

Implementation of the study

The play therapy program was applied to the experimental group by the researcher who previously had a 32-hour training within the "Play Therapy Practitioner" certification program.

Implementation phases

Pretest phase: During pre-test phase, families of the children in both groups were applied "Demographic Information Form" and "Revised Preschool Anxiety Scale (Parents Form)" before the intervention. The teachers were given "The Separation Anxiety Scale for Kindergarten Children (Teacher Form)".

Intervention phase: In this study, the play therapy program, which lasted 40 minutes and consisted of 6 sessions, was applied to each of the students. The 'Play Therapy Program' prepared and led by the researchers was applied to the experimental group weekly with the aim of decreasing separation anxiety in preschool children (Table 1).

Table 1. Play therapy program.

Basic goals	Sessions	Activities
1. Decreasing anxiety 2.Making them to feel that their families did not actually leave them	1st session	Activity called 'Game on Pictures'
1.Making them to manifest their feelings 2. Decreasing accumulated tension	2nd session	Activity called 'Dough game'
1.Recreating experienced anxiety 2.Banalizing anxiety by looking from outside	3rd session	Activity called 'Magic Carpet'
1.Making them to express anxiety 2. Relaxing by providing emotional discharge	4th session	Activity called 'Hidden Problems'
1.Understanding the feeling of the child 2.Determining the severity of the feeling experienced by the child	5th session	Activity called 'The World of Emotions'
1.Detecting the place where the child wants to be 2.Providing togetherness by combining the pictures	6th session	Activity called 'Photo Album'

In the first session, parents of the children took part in the therapy according to the state of the children's separation anxiety, and then slow exclusion method was performed on the parents. Families were also informed about the things they had to do at home about these issues, and it was aimed to alleviate the child's separation anxiety.

Posttest: At the post-test phase, parents in both study and control groups were applied the "Revised Preschool Anxiety Scale (Parents Form)'' again 6 weeks after the intervention, and the teachers were applied "The State Anxiety Scale for Kindergarten Children (Teacher Form)".

Statistical analysis

The statistical analysis of the data was done by using the SPSS 24.0 program. Kolmogorov-Smirnov test was used to examine the distribution of data besides descriptive statistical methods (frequency, percentage, mean, standard deviation). Pearson chi-square test and Fisher exact test were used to compare qualitative data. Parameters showing normal distribution were compared by Independent Samples t test between the groups whereas the parameters. The results were evaluated within a confidence interval of 95% and a significance level of 0.05.

Ethical considerations

The study was approved by the Zonguldak Bülent Ecevit University Human Research Ethics Committee (27.04.2017/227). Necessary institutional authorizations were also taken from Kozlu Central Kindergarten and Kozlu Fatih Kindergarten which were affiliated with Zonguldak Directorate of National Education. Verbal consent was taken from the parents of preschool children and preschool teachers included in the study.

RESULTS

When demographic characteristics of the children included in the study were examined, it was found that 50.0% (n=30) were the only child of their families and most of them (86.7%, n=52) had a core family type. Data regarding their parents indicated that 41.7% of the mothers (n=25) were aged between 31-35, 45% of the fathers (n=27) were older than 31 years old, 55% of the mothers (n=33) were high school graduates and 46.7% of the fathers (n=28) were university graduates or higher, 58.3% of the mothers (n=35) were unemployed, 95.0% of the mothers (n=57) were employed, 58.3% of the mothers (n=35) were housewives and 33.3% of the fathers (n=20) were working in the private sector. It was also detected that 95.0% of the families (n=57) had a social assurance.

No statistically significant differences were found when demographic characteristics of the children included in the study were compared between groups (p>0.05).

When children in the study and control groups were compared based on age, 33.3% of the children in both groups (n=60) were found to be within 3-4-5 year-old group. No statistically significant difference was found between the children in both groups based on age groups (χ^2=0.100, p=0.951).

When children in the study and control groups were compared based on sex characteristics, it was determined that 53.3% of the children in the experimental group (n=16) were males and 46.7% of them (n=14) were females, whereas 56.7% of the children in the control group (n=17) were males and 43.3% of them (n=13) were females. Statistical analyses did not show any significant differences between the groups (χ^2=0.067, p=0.500). It was also found that 76.7% of the children in the experimental group (n=23) were the first child and 23.3% of them (n=7) were the second child whereas 80.0% of the children in the control group (n=24) were the first, 13.3% (n=4) were the second and 6.7% (n=2) were the third child of the family. Statistical analyses did not indicate any statistically significant difference between groups (χ^2=2.839, p=0.242).

When mean scores of the children in the study and control groups from The Separation Anxiety Scale for Kindergarten Children (Teacher Form) were examined, no statistically significant differences were found between their mean scores before and after the training (p>0.05). When examining the groups, the decreases in the separation anxiety of children in the experimental group before and after the training were found to be higher than those in the control group, and the decreases in the separation anxiety of children were found to be significant in both groups (Table 2, p=0.000).

When mean scores of the children in the study and control groups from the Revised Preschool Anxiety Scale were compared, the decrease in the experimental group after training was found to be statistically significant (p=0.000). On the other hand, according to the Revised Preschool Anxiety Scale score of the control group before training, the change that occurred after training was not found to be statistically significant (Table 3, p=0.962).

When mean total scores of the Revised Preschool Anxiety Scale were compared between the children in the study and control groups, no statistically significant difference was detected between the groups before and after the training (Table 3, p>0.05).

When the results of mean scores of Revised Preschool Anxiety Scale subscales (social anxiety, generalized anxiety, separation anxiety, and specific fears) were examined, the differences between the groups were not found to be statistically significant before and after the training (Table 3, p>0.05).

The decrease that occurred in social anxiety score in the experimental group after the training was statistically significant compared to the score before training (p=0.000). In the control group, the change that occurred after training was not found to be statistically significant compared to the social anxiety score before training (Table 3, p=0.586).

The decrease that occurred in generalized anxiety score in the experimental group after the training was statistically significant compared to the score before training (p=0.000). However, the change that occurred in the control group after training was not found to be statistically significant compared to the generalized anxiety score before training (Table 3, p=0.142).

Table 2. Comparison of the mean scores of the separation anxiety scale for kindergarten children (teacher form) between experimental and control groups.

The Separation Anxiety Scale for Kindergarten Children (Teacher Form)		Experimental group (n=30)		Control group (n=30)		t	p
		Mean	SD	Mean	SD		
Total mean score	Pretest	2.460	0.942	2.061	1.157	1.464*	0.149
	Posttest	1.419	0.462	1.212	0.367	1.918*	0.060
	p and t values	t=4.578*	p=0.000	t=4.578*	p=0.000		

SD=Standard deviation, *Independent samples t test.

Table 3. Comparison of the mean scores of revised preschool anxiety scale between the children in experimental and control groups.

Revised Preschool Anxiety Scale		Experimental group (n=30)		Control group (n=30)		t	p
		Mean	SD	Mean	SD		
Total mean score	Pretest	2.363	0.690	2.229	0.553	-0.833*	0.408
	Posttest	1.963	0.523	2.233	0.682	1.722*	0.091
	p and t values	t=0.048*	p=0.000	t=5.618*	p=0.962		
Mean scores of subscales							
Social anxiety items	Pretest	2.238	0.809	2.219	0.823	-0.090*	0.928
	Posttest	1.924	0.687	2.281	0.862	1.774*	0.081
	p and t values	t=0.551*	p=0.000	t=3.098*	p=0.586		
Generalised anxiety items	Pretest	2.557	0.763	2.381	0.752	-0.901*	0.371
	Posttest	2.071	0.599	2.219	0.727	0.858*	0.394
	p and t values	t=1.508*	p=0.004	t=5.083*	p=0.142		
Separation anxiety items	Pretest	2.607	0.930	2.307	0.840	-1.311*	0.195
	Posttest	1.987	0.743	2.220	0.963	1.051*	0.298
	p and t values	t=0.558*	p=0.000	t=5.548*	p=0.581		
Specific fears items	Pretest	2.278	0.864	2.159	0.618	-0.611*	0.544
	Posttest	1.956	0.725	2.307	0.785	1.804*	0.076
	p and t values	t=1.106*	p=0.001	t=3.910*	p=0.278		

SD=Standard deviation, *Independent samples t test.

A statistically significant decrease was found in the experimental group after training based on separation anxiety score (p=0.000). However, the change occurred in the control group after training was not found to be statistically significant compared to the separation anxiety score before training (Table 3, p=0.581). In the experimental group, the decrease in specific fear score was found to be significantly greater than the decrease before the training (p=0.000) whereas the change occurred after the training was not statistically significant in the control group (Table 3, p=0.278).

DISCUSSION

The study was carried out to evaluate the effect of play therapy on separation anxiety among preschool

children who were aged between 3-5 and experienced separation anxiety.

No statistically significant differences were found in total mean scores of the Separation Anxiety Scale for Kindergarten Children (Teacher Form) between the children in study and control groups included in the study at pretest (before training) (p=0.149). However, a significant decrease was observed between both groups at posttest (after training) although there was not a statistical difference (p=0.060). In the study by Milos and Reiss Milos and Reiss (1982) which was performed by using 3 types of play therapy on 32 female and 32 male children aged between 2-6, it was concluded that play therapy was effective in eliminating separation-anxiety treatments and speech disorders and in alleviating anxiety among young children (Milos & Reiss, 1982). Trawick-Smith et al. (2015) examined the effect of nine toys on the games of preschool children who were within 3-4 year-old group and had different cultural characteristics; and each toy was recorded as a video for 240 hours in 4 different classes. In the same study, 828 children played with those toys and significant differences were noted in the effects of toys on game quality. They concluded that appropriate choice of toys and use of toys in the classroom by the teachers had significant benefits on children and contributed to the self-expression, game participation and socialization of the children (Trawick-Smith et al., 2015). In the extensive population-based examination of Battaglia et al. (2017), consisting of 1933 families between the ages of 1.5-6, the severity of anxiety and the rating of separation anxiety by teachers in the period from infancy to kindergarten and school age were investigated and the children were divided into 4 groups. Among these groups, severity of anxiety was found to be high among preschool children, and teachers were reported to be effective in the identification of it (Battaglia et al., 2017). When the results of the study carried out were compared with the literature, the study result that play therapy methods used by the teachers to decrease the children's separation anxiety were efficient was found to be similar to the literature (Battaglia et al., 2017; Milos & Reiss, 1982; Trawick-Smith et al., 2015). In the formation of this result, it has been thought that the child adapts to the environment with the play and peer relationship is related to the child's adaptation to the environment over time.

According to the total mean scores of the Revised Preschool Anxiety Scale, there was a statistically significant decrease in separation anxiety among the children in the experimental group (p=0.000 < 0.05); however, there was no statistically significant decrease in separation anxiety in the control group after training (p=0.962). In the quasi-experimental study by Shoaakazemi et al. (2012) which was performed with a total of 20 children aged 7-9 years in order to determine the effect of group play therapy on separation anxiety, the experimental group was applied for 9 sessions of therapy and a significant decrease was found in the separation anxiety of children who were applied for group play therapy at posttest (Shoaakazemi et al., 2012). Fliek et al. (2015) also investigated the relationship between rough-and-tumble play and preschool anxiety in their study with 105 anxious preschool children aged 2-6 years, and it was reported that fathers mostly participated in this play and mothers were more focused on care. In addition, it was reported that the anxiety and overprotective attitudes of the mothers were effective on the anxiety of the children, anxious fathers were more oriented to these games, and the anxiety and distress of the parents affected children negatively (Fliek et al., 2015).When the results of this study were compared with the literature, changes in the scale made for the parents to express and define separation anxiety of their children were found to be similar to the studies in the literature (Fliek et al., 2015; Shoaakazemi et al., 2012). It was also determined that the parents' anxiety played a significant role in the children's anxiety, and that providing interaction with this age group of children through games would be effective in overcoming anxiety. Based on the results of this and other relevant studies, it has been understood that play therapy helps to decrease the anxiety of the child and the family.

In the study, no statistically significant differences were found in the Revised Preschool Anxiety Scale mean scores of social anxiety, generalized anxiety, separation anxiety, and specific fear items between the children in the study and control groups after training (p > 0.05). The decreases after training were found to be statistically significant compared to the mean scores of social anxiety, generalized anxiety, separation anxiety, and specific fears in the experimental group before training (p<0.05). However, the decreases found in the same subscales after training were not found to be significant compared to the scores before training (p>0.05). In the study by Paulus et al. (2015) which was conducted to examine the effects of anxiety disorders on the behavior of 1342 children who were aged between 4-7, it was reported that the total prevalence was 22.2% for anxiety disorders, 10.7% for social phobia, 9.8% for specific phobias, and 7% for separation anxiety, and depression/common anxiety was reported to affect 3.4% of the children (Paulus et al., 2015). In the study by Waters et al. (2018), which was conducted with 205 anxious children aged between 4-12, the effect of cognitive behavioral therapy on social phobia, separation anxiety, common anxiety disorder, and specific phobia was investigated. In this study, it was reported that therapy, which was treated for 6-12 months, was more effective on children having specific phobias and separation anxiety compared to other types of anxiety (Waters et al., 2018). In the prospective randomized and controlled study by Sezici et al. (2017), which was carried out with 79 children aged 4-5 years, it was concluded that play

therapy was effective on the social, emotional, and behavioral skills of preschool children during the nursing process. Again in the study, play therapy was reported to be effective in eliminating fears and anxiety (Sezici et al., 2017).

When the study results were compared with the literature, the presence of anxieties in preschool children in Revised Preschool Anxiety Scale sub-items and scale changes of play therapy in sub-items in the post-test were found to be similar to the studies in the literature (Paulus et al., 2015; Sezici et al., 2017; Waters et al., 2018). Separation anxiety, which is the leading cause of anxiety among preschool children, results in various problems depending on the age of the child. Play therapy was found to be effective in eliminating anxiety problems seen among preschool children, and these results appeared to be similar to the results of previous relevant studies in the literature.

Limitation of the Study

The limitations of this research were that the sample was limited by the children aged 3-5, and it was made in a town in Zonguldak province.

CONCLUSIONS

At the end of the study, play therapy was found to be effective in alleviating separation anxiety seen among preschool children. Both teachers and parents of the children included in the study reported that play therapy is an effective method for reducing separation anxiety.

One of the most common problems in children just starting preschool is separation anxiety. Separation anxiety is the state of anxiety in the event of separation from the mother or attachment figure of the child. In addition to the increase in anxiety of children separated from their mothers or attachment figures, adaptation to the environment becomes difficult and the development of a sense of trust is prevented. For this reason, the play therapy method helps preschool children develop their emotional, social, and behavioral skills while reducing separation anxiety. It also helps children to reduce their anxiety and fear levels, increase their self-esteem, improve their coping, and communication skills. Finally, play therapy is important in the profession of pediatric and psychiatric nurses and is among the basic requirements of nursing.

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Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: ÖYD, AT; **Material, methods and data collection:** ÖYD, AT; **Data analysis and comments:** ÖYD, AT; **Writing and corrections:** ÖYD, AT.

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