INTERNATIONAL JOURNAL OF HEALTH SERVICES RESEARCH AND POLICY

2024
Volume 9
Issue 1

e-ISSN:2602-3482

IJHSRP

Publisher of Journal: *Rojan GÜMÜŞ*

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IJHSRP

International Journal of Health Services Research and Policy

www.dergipark.org.tr/ijhsrp

Volume 9 Issue 1

February 2024

e-ISSN: 2602-3482

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Research Articles

International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp

IJHSRP

e-ISSN: 2602-3482

Research Article

THE EFFECT OF SOCIAL MEDIA USE LEVEL AND SLEEP QUALITY ON WORK PERFORMANCE AMONG UNIVERSITY EMPLOYEES

Berkhan TOPAKTAŞ*[1] Neşe YAKŞİ[2]

[1] Amasya University, Faculty of Medicine, Department of Public Health, Amasya, Türkiye
[2] Amasya University, Faculty of Medicine, Department of Public Health, Amasya, Türkiye
* Corresponding author; berkhan@yandex.com

Abstract: *It is important to determine the level of social media addiction in the working population and to determine its relationship with sleep quality, and how both variables affect the work performance of the employees. In this study, it was aimed to determine the effects of social media addiction levels and sleep quality of employees at Amasya University on their work performance. The population of the cross-sectional study consisted of staff in all employment types at Amasya University. Sociodemographic data form, Social Media Addiction Scale-Adult Form (SMAS-AF), Pittsburgh Sleep Quality Index (PSQI), and Work Role Functioning Questionnaire (WRFQ) were applied by face-to-face survey method between August 15 and October 15, 2022. A total of 148 individuals participated in the study. The total score on the SMAS-AF was 40.0 (20-84), the PSQI total score was 6.0 (1-15) and the WRFQ total score was 92.5 (6-100). The WRFQ was found to be lower in individuals with associate degree or higher education, females, and academic staff (p=0.042; p=0.010 and p=0.008 respectively). The WRFQ total score indicated low, moderate, and negative significant correlations with the SMAS-AF and PSQI total scores (r= -0.333 and -0.344, respectively, p< 0.001). It was found that as the level of social media addiction increased and sleep quality deteriorated, work role functionality was negatively affected. A holistic approach, including behavioral problems, should be exhibited in the evaluation of work performance.*

Keywords*: Employees, sleep quality, social media addiction, universities, work performance*

Received: December 14, 2023 *Accepted: February 24, 2024*

1. Introduction

Addiction is the continuation of taking the substance despite the physical, mental, or social problems that occur during the process of taking a substance to achieve a significant effect, not being able to quit despite the desire to quit, increasing the amount of the substance taken gradually to achieve the same effect, and not being able to stop the desire to take the substance [1]. Various internet-based networks that allow users to interact with others verbally and visually are called "social media" [2]. Phrases like social media addiction, internet addiction, smartphone addiction, and compulsive social media usage can be used interchangeably to describe maladaptive use of social media, marked by addiction-like symptoms or diminished self-control. Of these terms, “social media addiction” is the most frequently utilized and is characterized as a psychological addiction involving the manifestation of behavioral addiction symptoms [3]. In the literature, such addictions are generally accepted as behavioral addictions [4]. Many studies show that social media addiction is associated with psychiatric disorders such as anxiety, depression, obsessive-compulsive disorder, and hyperactivity [5, 6]. In addition, excessive use of social media can be accompanied by poor work performance and sleep

problems [7]. A negative relationship was found between social media addiction, sleep quality, and employee performance. That is, employees' sleep quality has been shown to be an underlying psychological reason that explains how social media addiction is related to employee performance [8]. It is estimated that approximately 4.6 billion people in the world actively use social media [9]. According to Turkish Statistical Institute data, for 2022, 99.2% of the households in Türkiye have a mobile/smartphone subscription and 94.1% have internet access [10]. The fact that the internet and smartphones are so easily accessible brings the risk of social media addiction becoming a problem on a societal scale. Because so many scales are used to measure social media addiction, the prevalence of social media addiction ranges from as low as 0% to as high as 82% in a meta-analysis of 63 independent samples from 32 countries [11]. In a study conducted in Türkiye, it was shown that 13% of the young population spends more than 6 hours a day on social media platforms [12]. Many studies are showing that poor sleep quality is correlated with excessive social media usage, which can lead to deterioration in mental health in the young population [13]. It is important to determine the social media addiction level in working individuals as well as the young population and to determine its relationship with sleep quality, and how both variables affect the work performance of the employees. This study aimed to determine the effects of social media addiction levels and sleep quality on staff working at Amasya University on their work performance.

2. Materials and Methods

2.1. Research Design

This cross-sectional study took place between 15/08/2022 and 15/10/2022 at Amasya University Rectorate, Faculty of Medicine, Faculty of Health Sciences, and Sabuncuoğlu Şerefeddin Vocational School of Health Services, which were selected with simple random sampling method. The face-to-face survey method was used in data collection.

2.2. Participants and Sample Size

The population of the study was 915 people working in the central district campuses of Amasya University. In terms of work performance score, which is the dependent variable of the study, the minimum sample number was calculated as 101 with 5% type-1 error, 90% power, and 4% deviation, when the mean was 91.1 and the standard deviation was 11.0 [14]. While working at Amasya University and agreeing to participate in the study were considered inclusion criteria, no exclusion criteria were used.

2.3. Data Collection Tools

In the study, sociodemographic data forms prepared by the researchers, Social Media Addiction Scale - Adult Form (SMAS-AF), Pittsburgh Sleep Quality Index (PSQI), and Work Role Functioning Questionnaires (WRFQ) were applied.

SMAS-AF is a scale developed by Şahin and Yağcı [15] to determine the social media addiction of adults in the 18-60 age group. The scale is a five-point Likert type and consists of 20 items. The scale has a minimum score of 20 and a maximum score of 100. Higher scores indicate a higher level of social media addiction. Items 5 and 11 on the scale are scored in reverse. The scale comprises two sub-dimensions: Virtual tolerance (items 1-11) and virtual communication (items 12-20). The Cronbach's Alpha internal consistency coefficient of the scale was 0.94, and the test-retest reliability coefficient was 0.93. In this study, the Cronbach's Alpha internal consistency coefficient was found to be 0.91. Findings regarding the validity and reliability of the scale show that SMAS-AF is a measurement tool that can be used to determine adults' social media addiction.

The PSQI was used to determine the sleep quality of the participants. It was developed by Buysse et al [16] in 1989 and its diagnostic sensitivity was found to be 89.6% and specificity 86.5%. The validity and reliability study for Turkish was performed by Ağargün et al [17]. In our study, Cronbach's Alpha internal consistency coefficient calculated by including closed-ended questions was 0.81. PSQI, which evaluates the sleep quality in the last month, includes a total of 24 questions. Nineteen of these questions are self-reported and require patient responses. The five questions are responded to by the spouse or a roommate and are solely used for clinical information, not factored into the scoring. The last five questions will not be used in this study. The final self-report question pertains to the presence of a roommate or spouse and is not considered for scoring purposes. PSQI consists of seven items that assess subjective sleep quality, sleep delay, sleep duration, sleep efficiency, sleep disturbance, use of sleeping pills, and impairment in daytime work. Each response is assigned a score between 0 and 3 based on the frequency of symptoms. A score of 0 is given if the occurrence is absent in the last month, 1 if it happens less than once a week, 2 if it occurs once or twice a week, and 3 if it takes place three or more times a week. The total score obtained varies between 0-21, and high values indicate poor sleep quality and high sleep disturbance level. A total score exceeding 5 signifies inadequate sleep quality.

The WRFQ was used to evaluate work performance. This questionnaire, which was developed in the USA [18], gives a percentage of the time that individuals experience difficulties while performing their jobs in their working lives. It is a five-point Likert-type scale that includes 27 questions in total and 5 sub-headings: working order (5 questions), physical situation (6 questions), social situation (3 questions), psychological state (6 questions) and productivity (7 questions). Each item is coded as 0= “always (100%)”, 1= “most of the time”, 2= “half of the time (50%)”, 3= “sometimes”, 4= “never (0%)”, and 5=" does not apply to my job". “Does not apply to my job” scores are converted to missing values. For each subscale and the entire scale, the item scores are summed, divided by the number of items, and then multiplied by 25 to obtain scores ranging from 0% (always have difficulty) to 100% (never experience difficulty). If the percentage points are close to 20%, it shows that the work performance decreases and there is a loss of work-related efficiency and productivity. Higher values indicate better functionality at work. Turkish validity and reliability studies of the questionnaire were conducted by Irmak et al in 2011[19]. In this study, we found Cronbach's Alpha internal consistency coefficient to be 0.96.

2.4. Statistical Analysis

Once the data collected from the study were encoded, they were input into the SPSS 22.0 software package and subjected to analysis. While evaluating the data, continuous variables were expressed as median (minimum-maximum values), and categorical data were expressed as numbers (%). In the statistical analyses, the normal distribution fit of the measurement variables was assessed using the Kolmogorov-Smirnov test. The Mann-Whitney U test and the Kruskal-Wallis H test were used to compare continuous variables. Correlation coefficients were calculated using Spearman's rank correlation test. The correlation coefficient was classified as; 0.05-0.29: low or insignificant correlation, 0.30-0.39: low moderate correlation, 0.40-0.59: moderate correlation, 0.60-0.69: good degree of correlation, 0.70-0.74: perfect correlation, and 0.75-1.00: excellent correlation. A significance level of $p<0.05$ was considered for all tests.

2.5. Ethical Considerations

Data collection was started with the permission of Amasya University Rectorate. Approval for the study was granted by the Non-Interventional Clinical Trials Ethics Committee of Amasya University (date/number: 07/07/2022, 7-77). All participants voluntarily participated in the study and written

permission was obtained through an informed voluntary consent form. The research was conducted under the principles of the Declaration of Helsinki.

3. Results and Discussion

The median age of 148 participants in the study was 38.0 (21-72) years and 95 (64.2%) were male. It was determined that 106 (72.6%) of the participants were married, 103 (72.0%) had associate degree or higher education, and 85 (57.8%) were working in administrative staff status (Table 1).

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

Socio-demographic characteristics	Number†	%
Gender		
Male	95	64.2
Female	53	35.8
Marital status		
Married	106	72.6
Single/divorced	40	27.4
Education level		
Primary school	4	2.8
Middle school	3	2.1
High school	33	23.1
Associate's degree and above	103	72.0
Employment type		
Administrative Staff	85	57.8
Academical staff	26	17.7
Permanent worker	26	17.7
Contracted staff	10	6.8

†Due to missing answers, the total number could not be reached for some variables. Percentages were calculated based on valid answers.

In the total of the participants, the SMAS-AF total score was 40.0 (20-84), the PSQI total score was 6.0 (1-15), and the WRFQ total score was 92.5 (6-100). While 67 (48.2%) of 139 people who answered the PSQI completely had a score of 5 points or less, 72 (51.8%) people had a score above 5 points. WRFQ was found to be lower in individuals with associate degrees or higher education, females, and academic staff (p=0.042, p=0.010, and p=0.008, respectively) (Table 2).

Table 2. Distribution of scale scores according to sociodemographic characteristics

Socio-demographic characteristics	SMAS-AF¶ Median (Min-Max)	p	PSQI¶ Median (Min-Max)	p	WRFQ¶ Median (Min-Max)	p
Age (years)						
Under 30	39.0 (27-76)	0.715†	6.0 (1-15)	0.904†	95.1 (6-100)	0.373†
Thirty and above	40.0 (20-84)		6.0 (1-15)		92.2 (29-100)	
Gender						
Male	40.5 (23-84)	0.279†	6.0 (1-15)	0.420†	95.3 (6-100)	**0.010**†
Female	39.0 (20-79)		6.4 (2-14)		86.7 (52-100)	

Table 2. Continued.

Socio-demographic characteristics	SMAS-AF¶ Median (Min-Max)	p	PSQI¶ Median (Min-Max)	p	WRFQ¶ Median (Min-Max)	p
Marital status						
Married	39.0 (20-84)	0.835†	5.0 (1-15)	0.509†	93.7 (29-100)	0.610†
Single/divorced	40.0 (23-81)		6.0 (1-15)		91.8 (6-100)	
Education level						
High school and below	39.0 (25-81)	0.628†	5.0 (1-15)	0.804†	96.7 (6-100)	**0.042**†
Associate's degree and above	43.0 (20-84)		6.0 (1-15)		90.6 (29-100)	
Employment type						
Administrative staff	39.0 (20-72)	0.095‡	6.0 (1-15)	0.847‡	94.0 (29-100)	**0.008**‡
Academical staff	50.5 (24-84)		5.5 (1-13)		82.4 (49-100) §	
Permanent worker	38.0 (26-81)		4.0 (1-13)		96.0 (50-100)	
Contracted staff	38.5 (26-76)		6.0 (2-15)		93.7 (6-1009	

†Mann-Whitney U test
‡Kruskal-Wallis H test
§The subgroup from which the difference originates
¶ PSQI: Pittsburgh Sleep Quality Index, SMAS-AF: Social Media Addiction Scale-Adult Form, WRFQ: Work Role Functioning Questionnaire

There was no significant difference between genders in academic staff and permanent workers in terms of the total score of WRFQ (p=0.438, and 0.605). Among the administrative staff, WRFQ score was calculated as 96.2 (29-100) for males and 86.7 (64-100) for females (p=0.008). Those with a total PSQI score above 5 had a higher SMAS-AF score and a lower WRFQ score (p< 0.001) (Table 3).

Table 3. Distribution of SMAS-AF and WRFQ scores according to sleep quality

	SMAS-AF‡		WRFQ ‡	
PSQI†	**Median (Min-Max)**	**p†**	**Median (Min-Max)**	**p†**
Good sleep quality (≤5)	37.0 (20-72)	<0.001	96.1 (29-100)	<0.001
Poor sleep quality (>5)	47.0 (23-84)		86.4 (6-100)	

†Mann-Whitney U test
‡ PSQI: Pittsburgh Sleep Quality Index, SMAS-AF: Social Media Addiction Scale-Adult Form, WRFQ: Work Role Functioning Questionnaire

WRFQ total score indicated a low moderate and negative significant correlation with SMAS-AF and PSQI total scores (r = -0.333 and -0.344; p< 0.001). While no significant correlation was found between SMAS-AF and WRFQ in the participants with a PSQI total score of 5 points or less (p=0.197), a low and negative correlation was found between SMAS-AF and WRFQ in the participants with a PSQI total score above 5 points. (r = -0.273; p<0.05).

The total score of WRFQ, which was used to measure the main dependent variable of the study, was determined at the level of 92.5. In a study in which the scale was applied to healthy university employees in our country, the total score before an exercise intervention was found to be 91.1 [14]. The total WRFQ score was calculated as 74.1 for nurses who declared that they had not experienced musculoskeletal pain in the last six months [20]. As can be seen, in our study and in the study whose sample consisted of office workers at the university, the level of work performance was higher than that of health workers such as dentists and nurses. This situation is thought to be related to the fact that healthcare professionals have a longer standing time due to their jobs and mostly work in inappropriate ergonomic positions.

In this study, the work performance of female employees was found to be lower than that of males. The number of studies in which the WRFQ is used directly on this subject is very few. In one of these studies, two subscales of the questionnaire were used in the sample representing the general staff in the Netherlands and no difference was found according to gender [21]. When the results of the studies that include different scales measuring the job performance of the university administrative staff are examined, the work performance of males and females was found to be similar in a study conducted in the Philippines [22]. In Türkiye, it has been seen that the gender variable does not affect job performance in the studies conducted on the academic and administrative staff of the universities located in the provinces of Istanbul and Kırklareli [23, 24]. In our study, it was observed that the total WRFQ scores among academic staff, permanent workers, and contracted staff were similarly distributed among gender groups, similar to the literature, while female administrative staff described their job performance at a lower level, which is a remarkable finding. More research is needed to understand the reasons behind the low job performance of female managerial staff and whether this situation is related to organizational policies or social dynamics.

Among the studies examining the effect of the level of education on the working performance of university employees, no study using the WRFQ scale was found, but it is seen that different results were obtained in the studies using various scales measuring job performance. A study in the Philippines found no effect of education level on job performance among university workers [22]. Among the studies in Türkiye, there was no difference in terms of job performance between the groups of employees with undergraduate and graduate education at four universities in Istanbul [24]. In the study conducted among Kırklareli University employees, the job performances of the employees with a bachelor's degree were found to be lower than those of high school graduates and those with a master's degree or higher [23]. In the sample of our study, the difference between the two groups, employees with a high school or below education level and those with an associate degree or higher education level, was examined and the working performance of the employees with an associate degree or higher education level was determined to be more inadequate. The different results obtained show that it is not possible to talk about a definite effect of education level on the working performance of university employees. In terms of the results of this study, another finding parallel to the effect of education level on working performance is that academic staff's work performance is lower than other university employees among employment types. Considering that there are employees with associate degrees or higher education among the administrative personnel, the main determinant variable in terms of working performance may be the type of employment rather than the level of education and, as a result, the internal dynamics brought by the working process. The reason for this finding may be that the academic staff declare their perceived job performance to be lower as a result of the fact that they are more mentally intense as a requirement of the work they carry out, that they have to constantly produce scientific studies and that the professional goals to be achieved are a more pressing factor.

Among the main findings of the study was that the increase in social media addiction negatively affected the work performance of university employees. A study conducted in the USA showed that social media addiction is associated with important workplace variables such as work burnout and work-family balance, and negatively affects job performance [25]. As the time spent on social media increases while at work, it is understandable and expected to see a decrease in workplace responsibilities that need to be fulfilled. However, it is also important whether the decrease in work performance is due to the time-wasting feature of social media or through other mechanisms. In a review on the subject, it was suggested that cognitive function deficiencies may occur due to subcortical structure dysfunctions, which is a component of the reward system, in people who use social media frequently [26]. Another possible reason for the negative effect of social media addiction on work performance is sleep disorder. Since the data in our study did not comply with the normal distribution, it was not possible to determine

the effect level of social media addiction and sleep quality on work performance by partial correlation analysis by eliminating the confounding effects of each other. Because only the PSQI has a determined predictive value among the scales used, when the correlations between WRFQ and SMAS-AF in groups with good and bad sleep quality were examined, no negative effect of social media addiction on work performance was determined in the group with good sleep quality. However, in the group with poor sleep quality, it was determined that as social media addiction increased, work performance decreased. This finding suggests that social media addiction may affect work performance through sleep quality disorder. Among the findings of the study, the fact that the sleep quality is worse in the participants with higher social media addiction and that the work performance deteriorates as the sleep quality decreases supports this proposition. In general, studies show that sleep quality deteriorates as a result of excessive use of social media. In the study, which consisted of mostly American adults, it was found that the quality of sleep decreased as the time spent on social media networks increased [6]. In a university in Saudi Arabia, poor sleep quality was observed among employees, especially those who use a smartphone for more than 60 minutes before bedtime [27]. In a study conducted in England, similar to this study, it was shown that increased addiction to social networking sites was associated with decreased sleep quality and daily cognitive failures, but unlike this study, it was found that increased dependence on social networking sites had a direct effect on cognitive failures even when the effect of sleep quality was controlled [7].

4. Conclusion

As a result, among the university employees, it was determined that the working performance of employees with associate degrees and above education level, that of academic staff, and that of females was worse. It was found that as the level of social media addiction increased and sleep quality deteriorated, work role functionality was negatively affected. It was found that the negative effect of social media addiction on work performance was more pronounced, especially in employees with poor sleep quality. The relationship observed between the variables examined in this study shows that a holistic approach, including behavioral problems, should be exhibited while evaluating work performance. This study can be considered a step to help us understand the effects of social media use on sleep and work performance. However, research on this subject needs to continue and be further deepened.

Limitations of the study:

The primary limitation of the study is the cross-sectional nature of the study and therefore the inability to determine the direction of the causal relationship between social media addiction, sleep quality, and work performance. While the decrease in work performance may be a result of social media addiction and deterioration in sleep quality, low work performance and the accompanying mental problems may have led to social media addiction and deterioration in sleep quality.

Acknowledgments:

There is nothing to declare.

Ethical statement:

This study was conducted by Helsinki Principles, and approval was granted by the Non-Interventional Clinical Trials Ethics Committee of Amasya University (date/number: 07/07/2022, 7-77).

Conflict of interest:

There is nothing to declare.

Authors' contributions:

B.T.: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Supervision, Validation, Writing - original draft, Writing - review & editing.
N.Y.: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Supervision, Validation, Writing - original draft, Writing - review & editing.
All authors read and approved the final manuscript.

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International Journal of Health Services Research and Policy
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IJHSRP

e-ISSN: 2602-3482

Research Article

THE RELATIONSHIP BETWEEN NURSING STUDENTS' HEALTH PERCEPTIONS AND HEALTH-SEEKING BEHAVIORS

***Esra ANUŞ TOPDEMİR*[1] *Meltem SUNGUR**[2] *Şerife KÖLEOĞLU*[3] *Zeliha BÜYÜKBAYRAM GENÇ*[4]

[1]Dicle University, Atatürk Faculty of Health Sciences, Dep. of Nursing, Diyarbakır, Türkiye
[2]Kilis 7 Aralık University, Yusuf Şerefoğlu Faculty of Health Sciences, Dep. of Nursing, Kilis, Türkiye
[3]Artvin Çoruh University, Şavşat Vocational School, Dep. of Health Care Services, Artvin, Türkiye
[4]Siirt University, Faculty of Health Sciences, Dep. of Nursing Siirt, Türkiye
*Corresponding author: meltem_sungur4633@hotmail.com

Abstract: *Examine the effect of health perception on the health-seeking behaviors of nursing students. This descriptive-correlational study was made with a sample of 314 undergraduate nursing students. The Personal Introduction Form, Health Perception Scale, and Health-Seeking Behavior Scale were used to gather data. Kolmogorov Smirnov normality testing and Q-Q graphs were used to evaluate the data's normal distribution. Descriptive statistics, independent group t-tests, one-way variance (ANOVA), Kruskal-Wallis, and Pearson Correlation analysis were used. Additionally, the Dunn-Bonferroni and Tukey tests were used. According to the students' overall health status, between the mean Accuracy sub-dimension scores, a significant difference was found ($p<0.05$). According to the students' overall health status, the mean scores for self-awareness and general health perception were significant ($p< 0.05$). According to the students' overall health status, the mean scores for the sub-dimensions of professional health-seeking behavior were significant ($p<0.05$). According to the students' initial actions when they or a member of their family became ill, between the mean scores of the self-awareness behavior sub-dimension there was a significant difference ($p<0.05$). According to the student's initial response when they became ill, the difference between the mean scores of the sub-dimension of online health-seeking behavior was found to be statistically significant ($p<0.05$). According to the students' first response when they became ill, it was discovered that there was a significant difference between the mean scores of the conventional health-seeking behavior sub-dimension ($p<0.05$). There was a weak positive correlation between the mean scores of the Health Perception Scale and the Health-Seeking Behaviour Scale and the level of health-seeking behavior increased as the health perception of the students increased. In this direction, it was seen that students' health perception was effective in health-seeking behaviors.*

Keywords: *Nursing, Student, Health Perception, Health-Seeking Behaviour*

Received: January 7, 2024 *Accepted: February 27, 2024*

1. Introduction

All perceptions of one's health, including attitudes and expectations, fall under the definition of health perception. How a person interprets health is related to how that person perceives health. This demonstrates that health is a multifaceted idea [1]. All behaviors that a person adopts, put into practice, and raises their welfare level to be healthy and to protect their health, which is one of their human rights, are considered to be health behaviors, according to the definition of the health promotion model [2].

Health-seeking behaviors are responses to disease states that vary depending on an individual's health information and perceptions, their social and economic status, the sufficiency of the health services provided, and the attitude of the people in charge of these services [3]. Health perception influences health behavior [1]. People with low levels of behavior toward healthy living are said to have negative perceptions of their health [4]. The number of individuals with chronic diseases (such as hypertension, diabetes, etc.) where lifestyle modifications are important is growing daily. Health behaviors with lifestyle changes at the forefront are crucial to lowering exposure to diseases. With a lifestyle change, the individual looks for behaviors that will benefit his or her health [5]. The response to the disease manifests as health-seeking behavior as a result of the person's search for a fix for the issue or to prevent the disease. Despite being a group that is generally considered to be in good health, adolescents and young adults frequently have serious health issues related to depression, stress, anxiety, and reproductive health, as well as poor sleep habits, sexual activity, poor nutrition, lack of physical activity, and use of tobacco, alcohol, and drugs [3,6]. Due to lifestyle factors, university students represent a population with significant health needs. Due to their age, university students are subject to changes in the choices they make regarding their health as well as social and emotional changes. These choices influence how an individual behaves regarding their health. Students who have a positive view of their health will be more capable of managing their health-related behaviors. They will adopt healthy lifestyle practices and be conscious of their obligations while managing their health in this way [1].

The World Health Organisation draws attention to nurses in the stages of maximizing health [3]. Nurses' understanding of health will determine the interactions between nurses, patients, and their relatives [7]. Nursing students who will perform the nursing profession have responsibilities toward other individuals as well as protecting and improving their health [3]. Nursing students need to train to understand how different factors can affect physical and mental functions and how they can prevent or improve health and well-being and provide appropriate care for each patient [7]. Developing people with the knowledge, abilities, and behaviors to maximize health in terms of human needs in both health and illness is one of the goals of nursing education. The health-seeking behaviors developed during this process not only have an impact on the present but also determine how nurses, who will be the future caregivers, will seek out and provide care [3,7]. Because of this, students should be taught the significance of health promotion [1]. The purpose of this study is to examine the relationship between nursing students' health perceptions and health-seeking behaviors.

2. Materials and Methods

2.1. Research Type

Descriptive- correlational study type.

2.2. Population and Sample

The population of the study was 450 undergraduate nursing students from the Nursing Department of a University situated southeast of Türkiye. With a non-probability sampling technique, 314 of those students were chosen for the sample using the snowball sampling method. Being enrolled in a nursing undergraduate program, volunteering to participate, and not having any communication issues were requirements for inclusion in the research sample.

2.3. Research Variables

2.3.1 Dependent Variables

Health Perception Scale (HPS), Health-Seeking Behaviour Scale (HSB), and sub-dimensions score averages.

2.3.2 Independent Variables

Sociodemographic factors (age, gender, grade level, income level), other characteristics are, choosing the nursing profession willingly, presence of chronic disease, presence of chronic disease in the family, general health status, and behavior when sick.

2.4. Data Collection Tools

"Personal Introduction Form, Health Perception Scale, and Health-Seeking Behaviour Scale" were used.

2.4.1 Personal Introduction Form

The form consists of a total of 9 questions including various questions about socio-demographic characteristics and educational processes.

2.4.2 Health Perception Scale (HPS)

Diamond et al. (2007) developed The Health Perception Scale, Kadıoğlu and Yıldız (2012) adapted it into Turkish. It is a five-point Likert-type scale and consists of a total of 15 items [8, 9]. The Scale includes positive and negative statements and 4 sub-dimensions: control center, Accuracy, importance of health, and self-awareness. When scoring the scale, items with negative expressions are reverse coded. According to the subgroups of the scale, the control center consists of 2,3,4,12,13; self-awareness 5,10,14; Accuracy 6,7,8,15; the importance of health 1,9,11 items. Total scores of the scale vary between 15 and 75 and high total scores indicate that the level of health perception of the person is high and low scores indicate that the level of health perception is low. Cronbach alpha coefficient of the scale was found to be 0.77 [8, 9]. The Cronbach alpha coefficient of this study was found to be 0.67.

2.4.3 Health Seeking Behaviour Scale (HSB)

Kıraç's (2019) scale for measuring health-seeking behavior has 12 items and 3 sub-dimensions. These "online, professional, and traditional health-seeking behaviors" are the sub-dimensions [10]. Each item on the scale is scored between 1 and 5 and was created using the Likert method. According to Gallagher and Doherty (2009), online health-seeking behavior, a sub-dimension of the HSB, is the process of consulting various online health resources and professional opinions [11]. People will also use professional health-seeking behavior as one of their methods for finding a cure for their illness. People can go to the nearest medical facility and try to get treated for their discomfort there [10]. Conventional health-seeking behavior, on the other hand, is a remedy-seeking behavior that we call conventional methods other than professional methods; methods that are believed to work, alternative medicine methods, teachers, with doctors, circle of friends, herbal medicines, and old wives' remedies [12]. The Cronbach alpha value of the scale was found to be 0.75 for the whole scale. The Cronbach alpha coefficient of this study was 0.76.

2.5. Application of Data Collection Tools

The research was collected between 01.11.2020 and 28.02.2021 by preparing online survey questions with a total of 40 questions (Personal Introduction Form (13 questions), Health Perception Scale(15 questions) and Health-Seeking Behaviour Scale(12 questions)) was used for collecting data. The COVID-19 pandemic was continuing at the time of the study. Because of this situation online surveys are used for collecting data. Students WhatsApp groups are used for sharing information about the research by researchers. The sample included individuals who agreed to participate in the study.

2.6. Data Analysis

SPSS 25.0 was used (Statistical Package for Social Science). Q-Q graphs and the Shapiro-Wilk normality test were used to assess the normal distribution. Descriptive statistics (mean, standard

deviation, percentages, and numbers), the independent groups' t-test, the one-way variance (ANOVA) test, the Kruskal-Wallis test, and Pearson analysis were used. For multiple comparisons between categories for variables discovered to be significant by Kruskal-Wallis analysis, the Dunn-Bonferroni test was used, and the Tukey test was used for multiple comparisons between categories for variables discovered to be significant by One-Way Variance (ANOVA) analysis. The accepted statistical significance level was 0.05.

2.7. Ethical Aspects of the Study

Ethics committee approval dated 22.10.2020 and numbered 40 was obtained from a non-invasive clinical research ethics committee of the medical faculty of a university to conduct the research.

The directorate of nursing department of the university gave written consent, and the students gave both verbal and written consent. The Informed Consent Form was used to obtain written consent and contained information about the study's voluntary nature, participants' right to withdraw at any time, and the confidentiality of their names. The principles of the Helsinki Declaration were followed in the conduct of this study.

2.8. Limitations

It is thought that the research was conducted in a single center may constitute the limitation of the research. The other limitation of the study is Covid-19 pandemic was continuing at the time of the study, and because of that the results may be affected by this situation.

3. Results

Distribution of students according to descriptive characteristics are shown in Table 1.

Table 1. Distribution of Students According to Descriptive Characteristics (n:314)

Descriptive characteristics of the students	**n**	**(%)**
Gender		
Female	217	69.1
Male	97	30.9
Grade Level		
1st Grade	90	28.7
2nd Grade	104	33.1
3rd Grade	57	18.2
4th Grade	63	20.1
The status of choosing the nursing profession willingly		
Yes	134	42.7
No	55	17.5
Partially	125	39.8
Income status		
Low income	119	37.9
Moderate income	172	54.8
High income	23	7.3
Presence of chronic disease		
Yes	24	7.6
No	290	92.4
Presence of chronic disease in the family		
Yes	152	48.4
No	162	51.6

Table 1 Continued.

Descriptive characteristics of the students	**n**	**(%)**
General health status		
Very good	27	8.6
Good	150	47.8
Moderate	130	41.4
Bad	5	1.6
Very bad	2	0.6
The first thing you do when you or someone close to you gets sick		
I'll look up the disease on the internet	99	31.5
I/we go to the family health center	50	15.9
I/we go to the hospital	90	28.7
I/we use medicines/herbal tea etc. available at home	75	23.9
Age	$\bar{X} \pm$ **SD** 20.96±2.49	

SD: Standard deviation; $\bar{X}$= Mean

The mean age of the students was 20.96±2.49 years. In addition, 69.1% of the participants were female, 33.1% were in the second grade, 42.7% chose their profession willingly, 54.8% had a moderate income, 92.4% did not have any chronic disease, 48.4% had a chronic disease in their family, 47.8% had a good general health status, 31.5% of the participants' first behavior when they or a member of their family got sick was to search for the disease on the internet (Table 1).

Mean scores of students' health perception scale and health-seeking behaviour and scale are shown in Table 2.

Table 2. Mean Scores of Students' Health Perception Scale and Health-Seeking Behaviour and Scale (n=314)

Scales	**Number of items**	**Min. - Max. Score**	$\bar{X} \pm$ **SD**
Control Centre	5	5-25	17.00±3.33
Accuracy	4	4-20	11.92±2.98
The Importance of Health	3	3-15	11.24±2.04
Self Awareness	3	5-15	10.87±1.94
Total Health Perception	15	34-73	51.07±6.15
Online Health-Seeking Behaviour	6	6-30	18.19±4.39
Professional Health-Seeking	3	4-15	12.19±1.96
Conventional Health-Seeking Behaviour	3	3-15	10.48±2.11
Total Health-Seeking Behaviour	12	19-60	41.58±6.11

SD: Standard deviation; $\bar{X}$= Mean; Min: Minimum; Max: Maximum; HSB; Health-Seeking Behaviour; HPS; Health Perception scale

The mean scores of the control center, Accuracy, importance of health, self-awareness sub-dimensions of the HPS and the mean total scores of the HPS were 17.00±3.33, 11.92±2.98, 11.24±2.04, 10.87±1.94 and 51.07±6.15, respectively. The mean scores of the online health-seeking, professional health-seeking, and conventional health-seeking behavior sub-dimensions of the HSB scale and the total mean scores of HSB were found to be 18.19±4.39, 12.19±1.96, 10.48±2.11 and 41.58±6.11, respectively (Table 2).

Table 3. Comparison of the Descriptive Characteristics of the Students and the Mean Scores of Health Perception and Health Seeking Behaviour Scales (n=314)

Descriptive Features	Total and Subscales of HPS (Mean±SD)					HSB Total and Subscales (Mean±SD)			
	Control Centre	Accuracy	The Importance of Health	Self-Awareness	Perception of General Health	Online Health-Seeking Behaviour	Professional Health-Seeking	Conventional Health-Seeking Behaviour	General Health-Seeking Behaviour
Gender									
Female	17.15±3.34	11.87±2.80	11.07±1.98	10.73±1.78	50.83±5.76	18.91±4.30	12.20±1.85	10.56±1.89	41.68±6.06
Male	16.73±3.30	12.04±3.35	11.61±2.13	11.20±2.24	51.59±6.95	18.89±4.62	12.15±2.21	10.31±2.53	41.37±6.23
Statistical Testing and	t=1.03	t=-0.45	t= -2.17	t=-2.00	t=-1.01	t= 0.03	t=0.21	t=0.93	t=0.42
Significance	p=0.30	p=0.65	p=0.03	p=0.04	p=0.31	p=0.97	p=0.82	p=0.34	p=0.67
Grade									
1st grade[a]	17.66±3.47	11.75±3.29	11.51±2.14	10.78±2.13	51.72±7.31	18.70±5.41	12.20±2.14	10.47±2.21	41.37±6.71
2nd grade[b]	17.25±3.24	11.62±2.82	11.02±1.94	10.87±1.89	50.77±5.27	19.25±3.84	12.44±1.71	10.59±2.06	42.28±5.41
3rd grade[c]	15.94±3.46	12.08±2.69	11.40±2.08	10.78±1.86	50.22±6.12	18.68±4.20	12.01±2.05	10.19±2.27	40.89±6.90
4th grade[d]	16.69±2.91	12.52±2.96	11.07±2.01	11.09±1.82	51.39±5.72	18.85±3.82	11.92±1.99	10.58±1.91	41.36±5.53
Statistical Testing and	F=3.54	F=1.35	F=1.14	F=0.36	F=0.82	F=0.32	F=1.11	F=0.50	F=0.76
Significance	p=0.01 a-c*	p=0.25	p=0.33	p=0.78	p=0.48	p=0.80	p=0.34	p=0.67	p=0.51
The status of choosing the nursing profession willingly									
Yes	16.93±3.58	11.94±3.01	11.40±1.99	11.14±1.93	51.42±6.56	18.50±4.60	12.06±2.18	10.50±2.05	41.06±6.68
No	16.61±3.59	12.12±3.10	11.12±2.37	10.67±1.99	50.54±6.57	19.00±4.98	12.32±1.94	10.78±2.47	42.10±7.27
Partially	17.29±2.90	11.81±2.90	11.12±1.95	10.68±1.91	50.92±5.50	19.31±3.85	12.26±1.72	10.34±2.00	41.92±4.77
Statistical Testing and	F=0.87	F=0.21	F=0.69	F=2.15	F=0.45	F=1.11	F=0.48	F=0.82	F=0.87
Significance	p=0.41	p=0.80	p=0.50	p=0.11	p=0.63	p=0.32	p=0.61	p=0.44	p=0.42
Income status									
Low income[a]	17.05±3.19	11.35±2.83	10.96±2.12	10.63±2.11	50.00±5.73	19.00±4.31	12.26±1.88	10.57±1.99	41.84±6.06
Moderate income[b]	17.06±3.47	12.43±2.88	11.50±1.96	11.06±1.82	52.06±6.42	18.86±4.48	12.09±2.04	10.31±2.24	41.27±6.36
High income[c]	16.56±3.01	11.13±3.74	10.73±2.00	10.69±1.79	49.13±4.85	18.78±4.31	12.52±1.78	11.26±1.48	42.56±4.16
Statistical Testing and	KW= 0.73	KW= 8.15	KW= 6.21	KW= 3.78	KW= 10.50	KW= 0.59	KW= 1.14	KW= 3.88	KW= 1.67
Significance	p=0.69	p=0.01 a-b*	p=0.04 a-b*	p=0.15	p=0.00 b-c*	p=0.74	p=0.56	p=0.14	p=0.43

Table 3. Continued.

Chronic disease status									
Yes	17.29±4.44	12.00±3.31	10.66±3.18	10.83±2.18	50.79±7.30	18.66±5.91	12.70±1.75	10.25±1.89	41.62±7.58
No	17.00±3.23	11.92±2.95	11.29±1.92	10.88±1.92	51.09±6.06	18.93±4.25	12.14±1.97	10.50±2.13	41.58±5.99
Statistical Testing and	t=0.41	t=0.12	t= -1.44	t=-0.11	t=-0.23	t= -0.28	t=1.32	t=-0.57	t=0.03
Significance	p=0.68	p=0.90	p=0.15	p=0.90	p=0.81	p=0.77	p=0.18	p=0.56	p=0.97
Chronic disease status in the family									
Yes	17.00±3.28	11.80±2.89	11.05±2.01	10.80±1.92	50.67±6.06	19.40±3.99	12.34±1.70	10.75±1.96	42.50±5.39
No	17.04±3.38	12.04±3.06	11.41±2.06	10.94±1.96	51.45±6.23	18.44±4.70	12.04±2.18	10.24±2.22	40.73±6.62
Statistical Testing and	t=-0.11	t=-0.71	t= -1.56	t=-0.61	t=-1.12	t= 1.97	t=1.32	t=2.14	t=2.58
Significance	p=0.90	p=0.47	p=0.11	p=0.53	p=0.26	p=0.05	p=0.18	p=0.03	p=0.01
General health status									
Very good[a]	17.48±3.30	13.74±3.49	11.48±2.75	12.03±1.97	54.74±7.09	19.33±6.00	12.62±2.81	10.62±3.28	42.59±8.21
Good[b]	17.46±3.01	12.12±2.90	11.42±1.77	11.03±1.82	52.04±5.73	18.67±3.96	12.24±1.72	10.36±1.81	41.28±5.31
Moderate[c]	16.48±3.43	11.44±2.70	11.05±2.06	10.44±1.95	49.43±5.89	19.09±4.36	11.98±1.94	10.55±2.10	41.63±6.16
Bad[d]	15.00±6.63	8.20±2.38	11.20±1.64	11.20±2.58	45.60±5.59	21.20±4.65	14.40±1.34	12.20±2.94	47.80±7.36
Very bad[e]	17.50±6.36	13.50±6.36	7.50±6.36	11.00±0.00	49.50±6.36	13.50±10.60	10.00±4.24	9.00±0.00	32.50±14.84
Statistical Test and	KW= 7.23	KW= 18.11	KW= 4.50	KW= 16.61	KW= 26.55	KW= 3.41	KW= 13.12	KW= 5.83	KW= 6.35
Significance	p=0.12	p=0.00 a-d*	p=0.34	p=0.00 a-c*	p=0.00 a-c*	p=0.49	p=0.01 c-d*	p=0.21	p=0.17
The first thing you do when you or someone close to you gets sick									
I search for the disease on the Internet[a]	17.05±3.15	11.50±2.89	11.26±1.80	10.55±1.94	50.37±5.84	19.75±3.58	12.10±1.97	10.70±2.14	42.56±5.43
I/we go to the family health centre[b]	17.28±3.42	12.02±2.83	11.26±1.94	11.00±1.59	51.56±5.11	17.92±5.16	12.34±2.27	10.38±1.86	40.64±6.67
I/we go to hospital[c]	16.82±3.45	12.57±3.03	11.41±2.28	11.35±2.08	52.16±6.96	19.08±4.63	12.45±1.79	9.97±2.37	41.52±6.69
I/we use medicines/herbal teas etc. at home[d]	17.05±3.38	11.64±3.05	11.01±2.12	10.65±1.89	50.36±6.04	18.24±4.35	11.89±1.92	10.88±1.78	41.01±5.77
Statistical Test and	F=0.21	F=2.37	F=0.51	F=3.18	F=1.82	F=2.74	F=1.28	F=3.06	F=1.47
Significance	p=0.88	p=0.07	p=0.66	p=0.02 a-c*	p=0.14	p=0.04 a-b*	p=0.28	p=0.02 c-d*	p=0.22

SD: Standard deviation; $\bar{X}$= Mean; HSB; Health-Seeking Behaviour; HPS; Health Perception Scale; F: ANOVA test; t: Independent t-test; KW: Kruskal-Wallis test; p: considered statistically significant ($p<0.05$). * Dunn-Bonferroni tests

According to gender, between the mean scores for the importance of health and the self-awareness sub-dimensions, there was a statistically significant difference ($p<0.05$). According to the student's grades, a significant difference was between the mean scores for the control center sub-dimension. When the Tukey multiple comparisons were used to determine which group the difference originated from, it was discovered that a significant difference was between first-grade and third-grade students, with the first graders scoring higher on the control center sub-dimension ($p<0.05$). The mean scores of the accuracy and importance of the health sub-dimensions and the perception of overall health according to income status there was a significant difference. There was a significant difference between moderate income and low income, and the score of moderate income was higher ($p<0.05$), according to the results of the Dunn-Bonferroni multiple comparison. According to the students' income status, a significant difference was found between the mean general health perception scores. According to the results of the Dunn-Bonferroni multiple comparison, a statistically significant difference was found between those whose income was moderate or high those whose income was low, and the score of those with moderate income was higher ($p<0.05$). It was found that there was a significant difference between the mean accuracy scores for each of the students' general health statuses. This was attributed to those with very good and poor general health status, and those with good general health status had a higher score ($p<0.05$), according to the results of the Dunn-Bonferroni multiple comparisons. According to the student's general health status, between the mean scores for self-awareness and general health perception, a statistically significant difference was found. According to the results of the Dunn-Bonferroni multiple comparisons, those who had a good general health status were responsible for the difference and their score was higher ($p<0.05$). According to the prevalence of chronic disease in the family, between the mean scores of conventional health-seeking behavior sub-dimensions, general health-seeking behavior, and online health-seeking behavior there was a significant difference ($p<0.05$). According to the students' overall health status, it was found a significant difference between the mean scores for the sub-dimensions of professional health-seeking behavior. This situation was brought about by people with moderate to poor general health status, and people with moderate general health status had a higher score ($p< 0.05$) in the Dunn-Bonferroni multiple comparisons. It was found that the difference between the mean scores of the sub-dimension of self-awareness behavior according to the first behavior of the students when they or their families got sick was statistically significant. In the Tukey multiple comparison, it was found that this was due to the situation of researching the disease on the internet and going to the hospital and the score of going to the hospital was higher ($p<0.05$). The difference found between the mean scores of the sub-dimension of online health search behavior according to the first behavior of the students when they got sick was statistically significant. In the Tukey multiple comparisons, it was found that this was due to the situation of researching the disease on the internet and taking it to the family health center, and the score of those who searched for the disease on the internet was higher ($p<0.05$). According to the students' first response when they became ill, it was discovered that there was a significant difference between the mean scores of the conventional health-seeking behavior sub-dimension. In the Tukey multiple comparisons, it was discovered that using medication at home had a higher score ($p<0.05$) than visiting the hospital in causing this situation (Table 3).

Table 4. Examination of the Relationship between the Scale of Health Perception and the Health-Seeking Behaviour Scale Scores of the Students

HSB scale and its subscales	HPS scale and its subscales				
	Control Centre	**Accuracy**	**The Importance of Health**	**Self-Awareness**	**Total General HPS**
Online Health-Seeking Behaviour subscale	r=0.09 p=0.08	r=-0.00 p=0.91	r=0.27 p=0.00	r=0.96 p=0.08	r=0.17 p=0.00
Professional Health-Seeking subscale	r=0.36 p=0.00	r=0.13 p=0.01	r=0.28 p=0.00	r=0.18 p=0.00	r=0.41 p=0.00
Conventional Health-Seeking Behaviour subscale	r=0.03 p=0.49	r=-0.08 p=0.14	r=0.11 p=0.03	r=-0.01 p=0.75	r=0.01 p=0.79
General HSB Total	r=0.19 p=0.00	r=0.01 p=0.83	r=0.32 p=0.00	r=0.12 p=0.03	r=0.26 p=0.00

HSB; Health-Seeking Behaviour; HPS; Health Perception Scale; r: Pearson Correlation; p: considered statistically significant ($p<0.05$).

A positive relationship was found between the students' total general HPS and the importance of the health sub-dimension and the HSB online health-seeking behavior sub-dimension ($p<0.05$). A positive relationship was found between the total general HPS and all its subscales and the HSB professional health-seeking subscale ($p<0.05$). A positive relationship was found between the HPS importance of health sub-dimension and the HSB conventional health-seeking behavior sub-dimension ($p<0.05$). A positive relationship was found between students' total general HPS, control center, the importance of health, self-awareness sub-dimensions, and total HSB ($p<0.05$). It was found that as students' health perception increased, their level of health-seeking behavior increased (Table 4).

4. Discussion

Health perception and health-seeking behavior are affected by various factors. In addition to determining their health perception and health-seeking behaviors with the education they receive, nursing students are thought to be effective in the health perception and health-seeking behaviors of the individuals they will care for in the future [3, 7, 13, 14]. In this direction, in our study, the effect of health perceptions of nursing undergraduate students on health-seeking behaviors was examined.

In the study, the mean total score of the students' HPS was found to be 51.07±6.15. In the study conducted by Çilingir and Aydın, the mean total score of the students' HPS was at a moderate level (37.9±6.6) [15]. In a study by Öz Yıldırım et al., health perceptions of students were found to be at a moderate level (42.00±6.44) [16]. In the study of Özsoy and Şentürk, health perceptions of students were found to be at a good level (48.89±5.16) [17]. In another study conducted with students of vocational schools of health services, it was found that their health perceptions were at a good level [18, 19]. The individual's perception of health is based on self-assessment and reveals that the concept of health is multidimensional. However, health perception is very important for improving health, maintaining health, and gaining healthy life behaviors [1, 4, 15]. Considering the literature and our study, the health perceptions of nursing and other health services vocational school students were at medium and good levels. The main reason for this is thought to be a result of the positive effect of the education they receive on their health perceptions.

When the sub-dimensions of HPS were examined in our study, the sub-dimension with the highest mean score (17.00±3.33) was the control center sub-dimension. In this study, there was a significant difference between the first and third grades, and the control center sub-dimension score of the first grades was higher. The center of control sub-dimension reflects the person's confidence in his or her ability to change and improve his or her health, as well as whether they attributes their health to outside forces like luck and fate [8, 9]. It was discovered that the control center sub-dimension had a high mean

score in studies similar to this one [1, 13, 15, 18]. Nursing students had effective health control mechanisms, according to the study's findings and the literature.

No statistically significant difference between gender and the HPS overall score was found in the studies [15, 17, 20]. In this study, it was discovered that between the mean scores of the importance of health and self-awareness sub-dimension for men and women, there was a significant difference. In the Dülger and Seven studies, it was discovered that male students had higher health perceptions than female students [18]. In the study done by Dou and Atasoy, it was discovered that female students had higher health perceptions than male students [21]. According to this theory, how well someone perceives their health is unrelated to their gender, and each person should take personal steps to protect and enhance their health. In our study, the difference between Income status and the mean scores of Accuracy and importance of health sub-dimensions and general health perception was found to be statistically significant. Income status was found to affect students' health perception. In addition, a significant difference was found between those whose Income and expenses were equal and those whose Income was higher than expenses, and the scores of those whose Income and expenses were equal were higher. Demir et al. found in their study that the health perception total score and Accuracy sub-dimension scores of the students who defined the economic status of their families as good were high [13]. In Ağaçdiken Alkan et al.'s study, it was found that the level of Accuracy sub-dimension increased as the Income status increased [22]. In a study, it was reported that the mean scores of the health perception scale of students with poor Income status were higher, but not at the desired level [15]. The economic level of the individual may help him/her to access opportunities such as education and health more easily and help to improve health positively [13, 22, 23]. Although the increase in health perception with increasing Income level is supported by the literature, similar results were obtained in our study. In this direction; increasing Income level will enable students to evaluate their health status more accurately and will be a supportive factor in managing their health.

In this study, the difference between the mean scores of Accuracy and self-awareness sub-dimensions and the mean scores of general health perception according to the general health status of the students was found statistically significant. Students who expressed their general health perception as very good had a higher mean score of general health perception. In the study conducted by Dülger and Seven, it was found that those who defined their health status as very good had a higher mean total score on the health perception scale [18]. In Açıksöz et al.'s study, it was determined that nursing students who defined their health status as good had higher health perception [2]. In similar studies, the health perception of those who described their health status as good was found to be higher [1, 21, 22]. It is thought that defining the general health status as good motivates the individual and affects the health perception positively. It can be said that students with high health perception can evaluate their health without prejudice and thoughts.

The behaviors of an individual who does not feel well or who shows signs and symptoms of a disease and thinks that he/she is in a risk group for a disease to seek medical help are expressed as health-seeking behavior [24,25]. The type or quality of health-seeking behavior shown by individuals is directly effective for early diagnosis, treatment, recovery, and prevention of complications. In this process, receiving professional health support enables the individual to recognize and complete the disease process more accurately [24,25]. In this study, it was found that the most common HSB that students performed when they had health problems was online HSB, followed by professional HSB. In Deniz and Çimen's study, the majority of the students were 25 years of age and younger and the most common health-seeking behavior was professional health-seeking behavior and the lowest was online health-seeking behavior [24]. In the study conducted by Coşkun and Gürsoy, it was determined that 72.6% of the students would go to a health institution when they had a health problem and 47.2% would benefit from the internet and media [25]. When the help-seeking behavior for mental health problems

was examined in Thai medical students, the rate of professional help-seeking behavior was 66%, whereas this rate was 81% in Indian medical students [26]. In the study conducted by Özdemir and Arpacıoğlu, it was found that the online health-seeking behavior of participants in the 31-40 age range was higher than that of participants aged 51 and over [27]. The increasing amount of health-related information on the Internet, the higher digital health literacy of university students, and the fact that young individuals use the Internet and social media more in their daily lives than older individuals cause individuals to exhibit online health search behavior [27-29]. As a result of the literature and this study, younger individuals showed online health search behavior.

According to this study, a statistically significant difference was found between the mean scores of the professional HSB sub-dimension and the general health status of the students, as well as between the mean scores of the conventional health-seeking behavior sub-dimension and the general HSB according to the status of chronic disease in the family The scores of those with a moderate to good general health status were found to be higher, and this difference was attributed to them. In the study conducted by Özdemir and Arpacıoğlu, it was reported that participants with medical or mental illness were disadvantaged in terms of health-seeking behaviors [27]. In a study investigating the status of visiting health websites, it was found that individuals with long-term disability or chronic diseases visited health-related websites more frequently [30]. Poor health perception and the presence of a disease in oneself or one's family indicate that individuals may tend towards health-seeking behaviors to increase their awareness.

In this study, it was found that there was a weak positive correlation between the mean scores of HSB and HPS. It was found that as the health perception of the students increased, the level of health-seeking behavior increased. In the study conducted by Özdemir and Arpacıoğlu, it was reported that there was a statistically significant positive correlation between HSB and the sub-dimensions of the HPS scales [27]. In a study conducted on university students, the total health-seeking behavior scale score of students who perceived their health status as very good was found to be higher [31]. Individual differences in the meaning attributed to health have brought about a differentiation in the perception of health [31]. The way individuals perceive health and illness can affect their health-seeking behavior [32]. In this study, it can be interpreted that students' health perception directs their health-seeking behaviors. It is also thought that students tend to engage in health-seeking behaviors to increase their health perception.

5. Conclusion and Recommendation

The level of health-seeking behavior increased as the student's perception of their health increased, and it was discovered that there was a weakly positive correlation between the mean scores of HSB and HPS of the participants in this study. In this regard, it was made clear that students' health perceptions have an impact on their health behaviors and are crucial for influencing their quality of life to guide their future health-seeking behaviors. Finding the appropriate information and determining the veracity of that information presents a variety of challenges for students [28]. Nursing students should be taught how to evaluate and improve their perceptions of health and health-seeking behaviors during their education [14,15]. Improving students' information-seeking skills and ability to tell the difference between reliable and false information is crucial. Students should be encouraged to favor reputable websites and applications, and the literature should support this to increase the availability and reliability of health-related information on the internet because online search behavior is the most popular method.

Future studies can explore whether providing students with information about their or their family members' illnesses affects their perception of health and their search for health. These studies could offer a new perspective on the topic by comparing differences between grades.

Ethical Statement:

Ethics committee approval (Protocol No:40 Date: 22.10.2020) was obtained from a non-invasive clinical research ethics committee of the medical faculty of a university situated southeast of Türkiye

Conflict of Interest:

The authors declare that there is no conflict of interest.

Funding:

No financial support has been received for this study.

Contribution:

The author's contribution to the study is equal.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp

IJHSRP

e-ISSN: 2602-3482

Research Article

NURSE-ON-NURSE VIOLENCE: EXPLORING COLLEAGUE BULLYING IN NURSING

İrem UYANIK [1] ***Ayşe ÇİÇEK KORKMAZ**** [2]

[1]Bandırma Onyedi Eylül University, Institute of Health Sciences, Balıkesir, Türkiye
[2]Bandırma Onyedi Eylül University Faculty of Health Sciences, Nursing Department, Balıkesir, Türkiye
*Corresponding author: akorkmaz@bandirma.edu.tr

Abstract: *Colleague violence in nursing, identified as bullying, represents a significant issue. This cross-sectional and descriptive study aims to investigate the prevalence of workplace bullying among nurses and how these perceptions of bullying vary according to their individual-professional characteristics, frequency of support from managers and colleagues, and the bullying situations encountered. The study was conducted on 323 nurses, with data collected through an online survey using a descriptive information form and the Negative Act Questionnaire-Revised (NAQ-R). Descriptive statistics, Mann Whitney U, and Kruskal Wallis H tests were utilized for the analysis in SPSS. The findings indicate that the mean score of nurses on the NAQ-R is 35.61±12.34. Significant differences were found in the scale mean scores based on age, type of institution, unit worked, shift type, frequency of support from managers and colleagues, and the bullying situations encountered ($p<0.05$). However, no significant differences were observed based on gender, marital status, educational level, position, individual, institutional, and clinical experience, and the perpetrators of bullying ($p>0.05$). Results suggest that perceived workplace bullying among nurses is moderate and varies based on individual-professional characteristics, managerial and colleague support, and bullying situations. Consequently, it is critical to better understand and combat the issue of bullying among nurses in the workplace.*

Keywords*: bullying, nurses, negative acts, violence*

Received: January 8, 2024 *Accepted: February 28, 2024*

1. Introduction

Nurses are in a constant struggle not only with illnesses but also with their own colleagues. The bullying and hostility encountered in fulfilling their duties are among the most alarming and concerning aspects of this struggle [1]. Particularly in hospital settings, a significant number of nurses experience workplace violence, especially bullying [2]. This issue poses a significant threat in the human-centered field of nursing, underscoring the severity and prevalence of intra-professional violence [3,4].

Global studies emphasize the alarming levels of bullying among nurses, and this issue is experienced differently across various cultural and geographic regions. Research in Europe indicates that bullying rates vary from 9% to 74%, whereas studies in America show that incidents of weekly or daily bullying among nurses range from 21.3% to 82%. In Asia, 17% of intensive care nurses in South Korea and 53% of nurses in Jordan have encountered bullying [5], with the rate in Türkiye at 59.6% [6].

Workplace bullying among nurses is defined as harmful, repetitive, and persistent behavior aimed at humiliating, degrading, and weakening individuals [7]. According to Johnson (2019), common bullying behaviors among nurses include ignoring or excluding someone, engaging in malicious gossip, excessively monitoring a subordinate or colleague's work, and belittling a colleague's personal or

professional attributes [8]. Bullying in nursing manifests not only as a threat but also in various forms, such as harassment, horizontal violence, lateral violence, vertical violence, nurse hostility, abuse, and disruptive behavior [9,10]. These definitions highlight the complexity and multifaceted nature of the bullying problem in nursing, indicating that such behaviors must occur at least once a week for a minimum of six months [11].

Nursing bullying seriously threatens nurses' health and their ability to work safely [12]. Nurses subjected to bullying may experience a decrease in job satisfaction and absenteeism, depression, traumatic stress reactions, and other psychosomatic symptoms, adversely affecting their capacity to provide safe and effective patient care. The implications of this issue extend beyond individuals to organizations, the nursing profession, and patients [5,12]. Professional bullying negatively impacts nurses' patient care quality and increases medical errors. Increased turnover rates among nurses experiencing workplace bullying can lead to a human resources crisis in the nursing workforce [13, 14]. A study in southern Taiwan found a moderate, positive, and significant correlation between turnover intention and bullying, indicating bullying is a primary predictor of turnover intention [15]. These findings underscore the prevalence and seriousness of bullying in nursing and the importance of developing effective intervention strategies.

The causes of workplace bullying in nursing are multifaceted, including individual factors such as lack of professional experience, role conflicts, low self-confidence, and dissatisfied staff, as well as environmental factors like workload excess, inadequate managerial support, and poor communication [15]. Bullying is also influenced by various demographic factors such as gender, age, educational level, experience, and type of institution [2, 14, 16]. Studies have shown that nurses often experience bullying from their managers or colleagues [2,4,5,7]. Considering the cultural and geographical influences on this phenomenon, international research is needed to develop appropriate interventions against bullying [17].

Research indicates that workplace bullying varies depending on various factors and, therefore, needs to be continuously examined [4,7,8,11,12,15]. As a source of violence, bullying can change over time, highlighting the dynamic nature of the issue and the continued importance of its study. This research focuses on examining the situations of peer violence encountered by nurses in their work environment, determining perceptions of workplace bullying, and investigating whether these perceptions vary according to nurses' individual and professional characteristics, as well as the frequency of support from managers and colleagues, and the bullying situations faced. This study aims to understand the problem of bullying in nursing better and contribute to the development of more effective intervention strategies.

Research Questions

In line with the objectives of the research, the following questions will be addressed:

- What is the frequency of workplace bullying encountered by nurses?
- Does the workplace bullying experienced by nurses vary according to their individual-professional characteristics, the frequency of support from managers and colleagues, and the bullying situations they face?

2. Materials and Methods

2.1. Study Design

This was a cross-sectional descriptive study.

2.2. Setting and Participants

The study population comprises 139,640 nurses working in hospitals in Türkiye, according to the Ministry of Health's 2021 data [18]. Based on calculations using G*Power 3.1.9.2 software (80% confidence interval, ±5% margin of error, 0.20 effect size), the minimum required sample size was 226. Considering potential data losses during the research, the necessary sample size was set at a minimum of 300 nurses using simple random sampling. The online survey method reached 337 participants. Inclusion criteria were: (1) being a nurse working in public or private hospitals, (2) having at least six months of clinical experience, (3) providing informed consent and voluntary participation in the study. Exclusion criteria: (1) intern nurses or those working outside hospitals, (2) incomplete filling of data collection forms. A total of 323 nurses meeting these criteria were included in the study.

2.3. Data Collection Tools

Data collection was conducted through an online survey consisting of two parts.

The first part is a descriptive information form. It contains 17 questions regarding participants' age, gender, marital status, education, institution of employment, and situations related to managerial and colleague support and experiences of workplace bullying.

The second part is the widely used Negative Act Questionnaire-Revised (NAQ-R) for identifying colleague violence among nurses. Developed by Einarsen and Raknes (1997) and later revised, this scale measures nurses' perceptions of workplace bullying. The Turkish validity and reliability of the scale were established by Aydın and Öcel (2009). It was decided to use the title "Workplace Bullying Scale" instead of a direct translation of the "Negative Acts Questionnaire" to prevent misunderstandings about the features it aims to measure [19]. The scale has been found to have a single-factor structure. Nurses respond to 22 behaviors related to workplace bullying they have encountered in the last six months, rating each behavior from "Never-1 point" to "Daily-5 points". The scale score is obtained by summing all item scores, ranging from 22 to 110 points, with higher scores indicating higher perceptions of workplace bullying. The total Cronbach's Alpha reliability coefficient of the scale was $\alpha = 0.88$, and in this study, it was calculated as $\alpha = 0.93$.

2.4. Data Collection

Data was collected using an online survey form after obtaining ethical committee approval from November 2022 to February 2023. The survey link was shared with nurses through social media (e.g., WhatsApp, Bip, Telegram). An informed consent page was presented on the survey's entry page, and nurses who agreed proceeded with the survey. All questions in the survey required mandatory responses, with nurses having the option to leave at any time. All nurses who submitted their responses by clicking the "Submit" button were considered to participate in the study voluntarily.

2.5. Data Analysis

Data was analyzed using SPSS for Windows 23.0. Descriptive statistics included numbers, percentages, means, and standard deviations. The Kolmogorov-Smirnov test, kurtosis, and skewness values were used to assess the normality of the distribution. Mann-Whitney U and Kruskal-Wallis tests were employed since the data did not show a normal distribution. Bonferroni-corrected Mann-Whitney U analysis was used to determine the source of differences in more than two groups. A significance level of 0.05 was used for all tests.

The study's dependent variable was the NAQ-R, and the independent variables were the nurses' individual-professional characteristics, frequency of managerial support, colleague support frequency, bullying situation, and the perpetrators of bullying, totaling 16 independent variables.

2.6. Ethical Considerations

Ethical approval for the study was obtained from the Non-Interventional Research Ethics Committee of Bandırma Onyedi Eylül University (18.10.2022; 2022-150), and permission was obtained from the author for the scale used in the research. Participation in the study began with completing an Informed Consent Form added to the online survey form by nurse participants. This form confirmed the informed and voluntary involvement of the nurses and included their written consent.

3. Results

3.1. Participant characteristics

55.7% of the nurses participating in the study were 34 years old and under (average age = 35.13±7.99; min-max = 22-57), 79.3% were female, 70.9% were single, and 61.3% had a bachelor's degree. It was found that 82.7% of the nurses worked as clinical nurses, with 35% working in surgical clinics. Of nurses with an average professional experience of 13.37±8.69 years, 55.4% had professional experience of 11 years or more. 73.4% of the nurses worked in public hospitals, 73.1% had institutional experience, and 68.4% had clinical experience (see Table 1).

Information regarding the nurses' experiences with manager and colleague support and the violence they faced is provided in Table 2. Regarding the frequency of managerial support, 38.1% of the nurses reported occasionally receiving managerial support, while 51.4% reported often receiving colleague support. Regarding colleague bullying, 30.3% of the participants reported experiencing bullying, whereas 69.7% did not. Among the perpetrators of bullying, 65.3% were nurse managers, and 34.6% were clinical nurses.

Factors contributing to bullying were identified as personal reasons (57.2%), workload and managerial reasons (18.3%), communication-related reasons (17.3%), and other reasons such as belittling the work done, acting as if it doesn't exist (7.2%) (is not included in the table).

3.2. Negative Act Questionnaire-R score

Nurses on the Negative Act Questionnaire-R mean scores were found to be 35.61±12.34. In this study, the scores obtained from the scale ranged between 22 and 104.

3.3. Differences in Negative Act Questionnaire-R according to independent variables

Nurses aged 35 and over had significantly higher NAQ-R mean scores than their colleagues aged 34 and under ($p<0.05$). Regarding the work environment, nurses working in public hospitals had substantially higher NAQ-R scores than those in private hospitals ($p<0.001$). Mainly, nurses working in specialized areas such as Palliative and COVID-19 had significantly higher NAQ-R scores than those in internal medicine and surgical clinics ($p<0.001$). Bonferroni-corrected Mann-Whitney U analyses identified a significant difference between Palliative and COVID-19 clinics and internal medicine and surgical clinics ($p<0.05$). Additionally, nurses working in day shifts had significantly higher NAQ-R mean scores than those in day/night rotation shifts ($p<0.05$).

Table 1. Differences in Negative Act Questionnaire-R mean scores according to nurses' personal and professional characteristics

Variables	Group	n	%	NAQ-R Total $\bar{X}$ ±SD
Age	34 or less	180	55.7	34.92±0.94
*35.13±7.99/(22– 57)	35 or more	143	44.3	36.47±0.99
Z; p-value				-1.968; **0.04***
Gender	Female	256	79.3	35.90±0.78
	Male	67	20.7	34.49±1.43
Z; p-value				-0.277; 0.78
Marital status	Married	229	70.9	35.44±0.80
	Unmarried	94	29.1	36.03±1.33
Z; p-value				-0.123; 0.90
Education level	High school or above	46	14.2	37.84±2.12
	Bachelor's degree	197	61	34.73±0.77
	Master's degree or above	80	24.8	36.48±1.60
X^2; p-value				1,987; 0.37
Type of Institution	Public hospital in city[a]	237	73.4	36.81±0.80
	University hospital[b]	45	13.9	33.93±1.74
	Private hospital[c]	41	12.7	30.48±1.72
X^2; p-value				21.06; **0.00***
Post hoc				**a>c**
Position	Staff nurse	267	82.7	35.10±0.72
	Unit manager or above	56	17.3	38.05±1.91
Z; p-value				-1,425; 0.15
Clinics they work	Medical clinics[a]	113	35	33.17±0.89
	Surgical clinics[b]	62	19.2	32.51±1.23
	İntensive care[c]	66	20.4	37.19±1.61
	Palliative/ Covid 19 clinics[d]	32	9.9	42.84±3.21
	Emergency department	29	9	37.72±2.38
	Administrative units	21	6.5	38.95±2.98
X^2; p-value				21.60; **0.00***
Post hoc				**d>a; d>b**
Nursing experience	≤10	144	44.6	35.43±1.09
*13.37±8.69/ (1– 34)	≥11	179	55.4	35.75±0.87
Z; p-value				-0.988; 0.32
Institution experience	≤10	236	73.1	36.00±0.82
*8.10±6.64/ (1– 30)	≥11	87	26.9	34.56±1.21
Z; p-value				-0.855; 0.39
Clinical experience	Six months –5 years	221	68.4	35.98±0.86
*5.03±4.21/ (1– 23)	≥6	102	31.6	34.80±1.09
Z; p-value				-0.351; 0.72
Shift type	Day	101	31.3	38.35±1.50
	Day/Night Rotation	222	68.7	34.36±0.71
Z; p-value				-2.026; **0.04***

*(Mean ± SD)/(Min-Max), Z=Mann Whitney U; X^2=Krusskall Wallis ; *p <0.05; ***:p<0.001

Table 2 examines the NAQ-R mean scores in the context of violence experienced by nurses about managerial and colleague support. According to the frequency of managerial support, nurses who

'always' receive support had significantly lower NAQ-R scores than other groups ($p<0.001$). Regarding colleague support frequency, nurses who rarely received support had substantially higher NAQ-R scores than other frequencies ($p<0.001$). Nurses who experienced violence had significantly higher NAQ-R scores compared to those who did not experience violence ($p<0.05$). However, regarding the perpetrators of violence, the NAQ-R scores for those experiencing bullying from managerial nurses averaged 41.39±1.79, while for those from clinical nurses, the scores averaged 38.94±2.28. This difference was not statistically significant ($p>0.05$).

Table 2. Differences in Negative Act Questionnaire-R mean scores according to Managerial and Colleague Support and Exposure to Bullying Situations

Variables	Group	n	%	NAQ-R Total $\bar{X}$ ±SD
Managerial support frequency	Rarely[a]	94	29.1	41.17±2.63
	Sometimes[b]	123	38.1	39.92±1.84
	Often[c]	85	26.3	44.5±3.75
	Always[d]	21	6.5	27.00±1.37
X^2; p-value				16.69; **0.00*** **
Post hoc				a>d; b >d
Colleague support frequency	Rarely[a]	21	6.5	51.70±6.01
	Sometimes[b]	76	23.5	43.23±2.53
	Often[c]	166	51.4	37.32±1.82
	Always[d]	60	18.6	36.93±3.01
X^2; p-value				47.00; **0.00*** **
Post hoc				a>b>c>d
Exposure to colleague bullying	Yes	98	30.3	40.54±1.41
	No	225	69.7	33.46±0,72
Z; p-value				-5.33; **0.00*** **
Perpetrators of violence*	Nurse managers	64	65.3	41.39±1.79
Z; p-value	Clinics nurses	34	34.6	38.94±2.28
				-0.956; 0.33

* Responses from Those Exposed to Colleague Violence, Z=Mann Whitney U; X^2=Krusskall Wallis; *p: <0.05; ***:p<0.001

4. Discussion

Bullying, manifesting in various forms of violence over time, is a significant issue in healthcare settings. This is especially true for hospital nurses who, working in close-knit groups, are vulnerable to bullying from colleagues or supervisors/managers [3]. This research examines an often overlooked yet significant issue in the nursing profession: colleague violence, namely bullying. The obtained mean NAQ-R score (35.61±12.34), although well below the scale's maximum score, indicates the presence of moderate levels of workplace bullying. This finding highlights the issue of bullying faced by nurses in hospital environments. Furthermore, the high standard deviation (SD=12.34) points to significant differences in individual experiences, emphasizing the importance of understanding how the work environment and colleague interactions shape nurses' perceptions of bullying. In conclusion, this study's findings demonstrate that colleague violence, or bullying, is a natural and undeniable problem among nurses.

Our study determined that 30.3% of nurses experienced colleague bullying, and nurse managers perpetrated 65.3% of these incidents. These rates are consistent with findings in other studies within the field of nursing. For instance, a survey by Yoseb et al. (2022) [7] reported that nurse managers conducted 40.7% of bullying incidents. This often manifests as intimidation and pressure tactics towards nurses at

lower levels of the hierarchy, sadly indicating a lack of effective leadership and judgment skills [15]. Yıldırım (2009) found that 21% of nurses were bullied [20]. Similarly, a study by Etienne (2014) reported that 48% of registered nurses had experienced workplace bullying in the previous six months [21]. Likewise, Spector, Zhou, and Che (2014) found that 39.7% of nurses reported being bullied [22]. As noted by Bambi et al. (2018), the reported prevalence rates of bullying range significantly from 2.4% to 81% [23]. These comparisons suggest that bullying among nurses is not only a widespread issue but also occurs at varying degrees. Notably, the high rate of bullying conducted by nurse managers calls for reevaluating nursing management and leadership practices. The findings from our study allow for an understanding of the challenges nurses face in the healthcare sector and the complexity of peer relationships. The reasons for colleague bullying identified in our study include personal factors, increased workload, and administrative issues [13, 17]. Identifying these factors can form the basis for understanding the emergence of workplace bullying and developing steps to address this issue [13].

Our study examined which groups of nurses, based on their individual and professional characteristics, might be more vulnerable to workplace bullying. Interestingly, our findings reveal that workplace bullying does not significantly differ among nurses based on gender, educational level, or marital status, aligning with previous research [2]. The literature often suggests that, theoretically, nurses with less power in the workplace, namely younger nurses, are more likely to experience bullying [14, 16, 24]. However, our study revealed that nurses aged 35 and over had significantly higher NAQ-R scores. This finding indicates that bullying is not exclusive to younger nurses but can also affect older nurses. Older nurses, possibly fatigued by years of work life and experiencing psychological burnout and dissatisfaction, might be more likely to report incidents of violence [25]. Costronovo et al. (2016) [9] noted that specific characteristics make individuals more susceptible to workplace bullying. Notably, individuals who introduce new ideas often face bullying as they challenge the status quo at work; similarly, those perceived as threats to higher-level individuals are also targeted. This underscores the importance for nurse managers to consider different age groups and levels of professional experience in developing strategies to combat bullying. Effective anti-bullying measures should encompass young and inexperienced nurses and older, more experienced ones. By doing so, healthcare institutions can develop more comprehensive and effective intervention methods that consider the needs of nurses at all levels.

Our study has demonstrated significant differences in NAQ-R scores based on the type of institution. This result is consistent with the literature, which has found that nurses working in public hospitals have statistically higher NAQ-R scores compared to their counterparts in private hospitals [16, 26,27,28,29]. Seyrek and Ekici (2019) found that nurses working in university hospitals experience more psychological violence than those working in private hospitals in Türkiye [29]. According to Fontes et al. (2013), the reason for this is that in the public sector, bullying can last for years because victims cannot be easily dismissed, and there is often a preference to maintain job stability at the expense of personal dignity. The methods employed in this sector are more harmful and can have a catastrophic impact on the victim's health. Another exacerbating factor in the public sector is the difficulty in accessing higher-ranking employees to discuss interpersonal issues with superiors. Hence, such work environments pose a risk for the development and persistence of bullying [26]. This result may indicate that nurses working in private hospitals experience less workplace bullying. However, it is important to note that only a small fraction (12.7%) of our study's respondents were from private hospitals. Therefore, these findings should be interpreted with caution. Further exploration through research including a more balanced representation of nurses from both public and private sectors is necessary. Such research would provide a more holistic understanding of the phenomenon and could inform more effective strategies to combat workplace bullying in various healthcare settings. This result underscores the importance of considering the type of institution in understanding the working environments and challenges faced by healthcare workers. Particularly, the more frequent experiences of bullying among

nurses in public hospitals suggest a need for improving working conditions and implementing effective protective measures against bullying in these institutions. Strategic actions could create a more supportive and safe working environment for nurses and help reduce bullying in the healthcare sector.

The literature particularly highlights that working in specialized units and high-stress environments exposes healthcare workers to increased bullying, often associated with heightened stress in interpersonal staff relationships and the management of critical patients [2, 5, 13]. During the COVID-19 pandemic, healthcare workers faced high violence risk due to heavy clinical workloads, low clinician-to-patient ratios, and stressful work environments [30]. Our study found that nurses in specialized areas such as Palliative/COVID-19 clinics had significantly higher NAQ-R mean scores than their internal medicine and surgical clinic counterparts. These findings suggest that high-stress and specialized healthcare settings can amplify nurses' experiences of bullying. The effects of these factors on nurses can become more pronounced during extraordinary health crises like a pandemic. Our results emphasize the need for nurse managers to take additional measures to support and strengthen the capacity of nurses working in these environments to cope with bullying.

Another notable finding from our study, which is consistent with the literature [14], is that nurses working daytime shifts had significantly higher NAQ-R mean scores compared to their colleagues working rotating shifts (day/night rotation). The higher bullying scores among daytime nurses might indicate that working on this shift could increase stress levels and, consequently, the risk of bullying. This could be due to daytime shifts generally involving a heavier patient flow, more administrative interactions, and typically a higher workload. Additionally, nurses working during the day might interact more with managers and other administrative staff, potentially increasing the risk of bullying due to these potentially stressful interactions. On the other hand, nurses working night shifts might encounter fewer patients and administrative interactions, which could contribute to their lower bullying scores. These findings suggest the need for healthcare institutions to be cautious in shift planning and work environment design. Developing strategies to mitigate the challenges and stress factors faced by daytime nurses is crucial, potentially enhancing the overall well-being of nurses and reducing the risk of workplace bullying.

The lack of support from nurse managers and colleagues hampers the coping abilities of nurses and leads to increased job resignations [15]. Our study analyzed the NAQ-R mean scores of nurses in the context of the support they receive from managers and colleagues and the bullying they encounter. As expected, nurses who 'always' received managerial support had significantly lower NAQ-R scores than other groups. This suggests that managerial support can reduce nurses' perceptions of workplace bullying. Continuous support may help nurses feel more secure in challenging situations, thereby mitigating the effects of bullying [7]. Conversely, nurses who infrequently received peer support had significantly higher NAQ-R scores. This indicates that a lack of colleague support can increase nurses' perceptions of bullying. Peer support can be a crucial factor in coping with workplace challenges, and its absence may increase the risk of encountering bullying. These findings underscore the importance of managerial and peer support in healthcare institutions to bolster nurses' abilities to cope with workplace bullying.

Our study also found that nurses who experienced violence had significantly higher NAQ-R scores than those who did not, highlighting that exposure to workplace violence significantly increases nurses' perceptions of bullying. However, when examining the source of bullying, no significant difference was found in the NAQ-R scores between nurses bullied by nurse managers and those bullied by clinical nurses. This could suggest that regardless of the bullying source, nurses experience the effects of such behaviors similarly. Especially in the healthcare sector, nurses and nurse managers are often subjected to various forms of bullying, such as humiliation, insult, and criticism, from lower-level

employees and upper management [31]. These findings indicate the need for more in-depth studies to understand the types and sources of bullying that nurses face.

5. Conclusion

Our study determined that 30.3% of nurses experienced colleague bullying, with 65.3% of these incidents perpetrated by nurse managers. Moreover, it was observed that nurses generally have a moderate perception of bullying. However, the high standard deviation indicates significant differences in individual experiences. Our study found no significant differences in the NAQ-R mean scores when considering nurses' gender, marital status, educational background, position, professional, institutional, and clinical experience, and the parties perpetrating the bullying. On the other hand, significant differences were identified among factors such as age, type of institution, department, and shift pattern. Notably, nurses aged 35 and over, working in public hospitals, in specialized clinical areas such as palliative/COVID-19, and on day shifts scored significantly higher on the NAQ-R than other groups. Additionally, the considerably lower NAQ-R scores of nurses who 'always' received managerial support than other groups suggest that managerial support is crucial in reducing perceptions of bullying. Similarly, the higher NAQ-R scores among nurses who rarely received peer support indicate that a lack of peer support may increase perceptions of bullying.

5.1. Limitations

The study has several significant limitations. Firstly, the methodology involved data collection solely via an online survey form. This approach may have excluded the views of participants who prefer not to participate in online surveys or have limited internet access, potentially limiting the generalizability of the study. Secondly, the study's results are based solely on the participants' self-reports, so the responses and demographic information collected may not fully reflect the views of all nurses. Thirdly, the results may change because the research was conducted within a specific time frame. Consequently, these limitations should be considered when interpreting and generalizing the findings.

5.2. Implications

Our study's findings have significant implications for nurse managers and clinical nurses. As our research suggests, nurse managers can substantially reduce nurses' perceptions of bullying by providing consistent support. It is recommended that nurse managers exhibit continual supportive leadership and promote effective communication and conflict-resolution skills within their teams. These approaches will likely enhance understanding and collaboration among nurses, thereby reducing bullying incidents [9, 32].

For nurses, the study underscores the importance of peer support. Actively providing colleague support can strengthen coping skills against bullying and reduce the perception of bullying in the workplace. Stress management techniques and personal well-being should also be emphasized for nurses working in high-stress environments. Engaging in ongoing professional development and education on bullying-related issues will increase their awareness and coping abilities [7].

Furthermore, shift planning and personnel management strategies should consider the effects of institutional type and shift patterns on nurses' perceptions of bullying. Providing additional support and resources for nurses working in high-stress, specialized clinical areas and for older nurses could reduce the risk of bullying in these areas.

In conclusion, nurse managers and clinical nurses are vital in addressing and reducing workplace bullying. The findings of this study highlight the need for health institutions to develop comprehensive and targeted strategies to enhance nurses' professional and personal well-being.

Ethical Statement:

Ethical approval for the study was obtained from the Non-Interventional Research Ethics Committee of Bandırma Onyedi Eylül University (18.10.2022; 2022-150), and permission was obtained from the author for the scale used in the research. Participation in the study began with completing an Informed Consent Form added to the online survey form by nurse participants. This form confirmed the informed and voluntary involvement of the nurses and included their written consent.

Acknowledgment:

Thank you to all our colleagues who participated in our research.

Conflict of interest:

No conflict of interest has been declared by the authors

Authors' contributions:

All authors read and approved the final manuscript.
The level of their contributions are as follows:
İ.U: Conceptualization; Data collection, Investigation, Formal analysis, Manuscript preparation
A.Ç.K : Conceptualization; Methodology; Formal analysis; Writing – Original Draft; Writing – Review and Editing.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp

IJHSRP

e-ISSN: 2602-3482

Research Article

THE RELATIONSHIP BETWEEN FEAR OF DEATH AND MEANING OF LIFE IN NURSING STUDENTS AND NURSES CARING FOR TERMINAL PATIENTS•

Merve AKARSLAN*[1] Fidan KARADENİZ[1] Funda GÜMÜŞ[1]

[1] Dicle University Atatürk Faculty of Health Sciences Nursing Department, Diyarbakır, Türkiye
*Corresponding author: akarslanmerve13@gmail.com

Abstract: *This study aims to determine the relationship between fear of death and the meaning of life in nursing students and nurses caring for terminally ill patients. The study was conducted in a cross-sectional and relationship-seeking research design. The research was conducted between March 15 and June 30, 2023. 123 nurses and 139 nursing students working with terminal-stage patients at a university hospital participated in the study. The study was conducted with a total of 262 participants.*
The Personal Information Form was collected using the Fear of Death Scale (DAS) and the Meaning of Life Scale (MLQ). The relationship between fear of death and the meaning of life in nursing students and nurses caring for terminally ill patients was determined to be 31.74 (7.13) years old on average for the nurses participating in the study and 22.71 (1.66) years for the nursing students. 61% of nurses and 66.2% of nursing students were women. It was determined that 56.1% of the nurses had undergraduate degrees and 77.7% of the students were third-year students. According to the Student t-test analysis, a significant difference was detected between the groups in terms of the total score of the DAS, and the DAS scores of the nursing students were statistically significantly higher. According to the Pearson correlation analysis, a weak negative relationship was detected between the total scores of the nurses' DAS and MLQ, while no significant difference was found between the scale scores of the nursing students. In this study, the Cronbach's alpha coefficient of the Death Anxiety Scale (DAS) was found to be 0.96 and the Meaning of Life Scale (MLQ) was 0.68. It can be said that there is no relationship between the fear of death and the meaning of life in nursing students who care for terminal patients, but there is a relationship between the fear of death and the meaning of life in nurses.

Keywords: *Fear of death, meaning of life, nurse, nursing students, patient.*

Received: January 8, 2024 *Accepted: February 27, 2024*

1. Introduction

Death, which is an inevitable part of life, is defined as the end of life, the most egalitarian truth that happens to a human being, and the change of form of the state of existence in terms of quality and quantity, representing the fear of the unknown. Death is the definitive end of all vital processes in a living being's cells, tissues, and organs, or the state of being alive [1]. Nurses and nursing students often encounter death in healthcare institutions, and this puts great responsibility on nurses and nurse candidates [2]. All health professionals, especially nurses, experience various difficulties in caring for

• This study was supported by TÜBİTAK–2209-A University Students Research Projects Support Program with application number 1919B012207083

dying patients due to reasons such as the high care needs of dying patients, their condition getting worse, difficulty in treating the symptoms that distress patients, and trying to meet the care needs of the relatives of the dying patient [3]. On the other hand, working with a dying patient involves witnessing death and causing the individual to confront the reality of his death [4].

In nursing education, nurses encounter dying patients and learn to manage the process of providing care to these patients. In the process of caring for dying patients, they have multiple responsibilities, such as keeping these patients comfortable and supporting them in the final stages of their lives, meeting their care needs, and helping them die with dignity. In addition, witnessing the death process causes psychosocial problems and undesirable situations such as anxiety and fear in nursing students [4,5]. Nursing students' feelings and thoughts about death and their attitudes towards the patient in the terminal period play a very important role in the quality of the care they provide to the patient approaching death [6]. Considering that the knowledge and skills for caring for terminally ill patients were shaped during their student years; It is important to address students' behaviors and attitudes toward death and the emotions and thoughts that may affect these attitudes [7]. Studies have shown that students' attitude scores regarding the care of terminally ill patients are at a moderate level [8,9] and that the majority of students do not want to care for a patient whose death is approaching; It has been reported that their feelings and thoughts towards terminally ill patients and their families are negative [10]. Nurses and nursing students are among the health professionals who provide direct communication with terminally ill patients and their relatives. In this process, in addition to students having the necessary knowledge and skills to meet the care needs of the patient and family, their attitudes towards death and the meaning they give to life are of great importance. However, it is stated in the literature that attitudes towards death and care of terminally ill patients are affected by many variable factors such as age, gender, losing a relative, and receiving training on terminally ill patient care [7,9] Although the emotions felt towards death vary among everyone, the universally common emotion is fear. The reason for this can be said to be the loss of loved ones, loss of continuity in the sense of identity, loss of control over the body and body, separation from relatives, not being able to see loved ones again, loneliness, pain, and uncertainty [11]. The perception of death also affects our behavior. For example, for an individual who sees death as a pathway to a happy life, suicidal behavior may be considered consistent. Someone else who does not think this way may see death after suicide as a traumatic situation. But the connection may not always be that simple. Most of the time, similar behaviors may follow different understandings of death or similar understandings may lead to different behaviors. In other words, the way an individual perceives death can affect his or her behavior in complex and indirect ways [1,4,11]. As observed in the patient and his/her relatives, nurses caring for terminally ill patients may experience anxiety, fear, helplessness, guilt, anger, denial, and depressive feelings. In addition, the death of the patient cared for by the nurse may cause the nurse to see themselves as unsuccessful and inadequate and to experience guilt [1,12,13]. Studies have shown that this concern is real. Research shows that most nurses feel sadness, helplessness, anxiety, fear, anger, denial, guilt, depression, grief, wear and tear while caring for patients in the terminal period and that the emotional and spiritual needs of the patient and his or her family at the end of life are met.

2. Materials and Methods

2.1. Design of the Study

A cross-sectional and correlational research design was used in this study.

2.2. Sample of the Study

The population of this cross-sectional and descriptive study consisted of Dicle University Atatürk Faculty of Health Sciences Nursing Department students and nurses working in terminal patient units at Dicle University Hospitals in the 2022-2023 academic year. The study did not include a sample calculation but was conducted with nursing students and nurses working with terminal patients within the specified date range. 123 nurses working with terminal patients at Dicle University Hospitals participated in the study conducted between 15 March and 30 June. 139 students from Dicle University Atatürk Faculty of Health Sciences, Department of Nursing participated. The study was conducted with a total of 262 participants. 23 nurses and 37 students did not volunteer to participate in this study.

2.3. Inclusion Criteria

Being a student at Dicle University Atatürk Faculty of Health Sciences Department of Nursing and having worked with terminal stage patients, being a nurse at Dicle University Hospitals and having worked with terminal stage patients, not having any diagnosed mental problems, It was conducted with participants who volunteered to participate in the study.

2.4. Data Collection Instruments

Data were collected using the "Personal Information Form, Fear of Death Scale (DAS), and Meaning of Life Scale (MLQ)".

2.4.1 Personal Information Form

This form, prepared by the researchers in line with the literature, was created from the descriptive characteristics of nursing students such as age, gender, marital status, education level, employment status, and income level, and for nurses such as age, gender, marital status, education level, income level, working age, working unit, etc.

2.4.2 Death Anxiety Scale (DAS)

It is a 20-item scale developed by Sarıkaya and Baloğlu (2016). It has three sub-dimensions: uncertainty of death, thinking about death and witnessing it, and suffering. The DAS items were prepared in a 5-point Likert form. For each item, zero points are given for the answer 'never', one point for the answer 'rarely', two points for the answer 'sometimes', three points for the answer 'often', and four points for the answer 'always'. The scale is scored between 0-80, with higher scores indicating higher death anxiety. Scores between 0 and 29 indicate low levels of death anxiety, scores between 30 and 59 indicate moderate levels of death anxiety, and scores between 60 and 80 indicate high levels of death anxiety. Cronbach's alpha internal consistency coefficient was calculated to determine the reliability of the scale; Cronbach's alpha value was found to be 0.94 for the 'uncertainty of death factor', 0.92 for the 'thinking about death and witnessing factor' and 0.76 for the 'suffering factor' [14].

2.4.3 Meaning in Life Scale (MLQ)

The scale was developed by Steger et al. (2006). It was adapted to the Turkish language by Akın and Taş (2015). MLQ consists of 10 items. The scale provides a seven-point Likert-type measurement (1 = completely true for me and 7 = not true for me at all). Item 9 is reverse coded. The scale consists of two sub-dimensions: current meaning and sought-after meaning. Internal consistency reliability coefficients of MLQ were found to be 0.77 for the current meaning subscale and 0.83 for the sought-meaning subscale. The test-retest reliability coefficients obtained four weeks apart were found to be 0.89 for the current meaning subscale and 0.92 for the sought-meaning subscale [15]. A low score indicates a high meaning in life.

2.5. Analysis of the Data

This study data was analyzed in the SPSS 25.0 program. Mean, standard deviation, minimum, maximum, number, and percentage were used in the analysis of descriptive data. The total score average of the scales was taken to examine whether there was a normal distribution within each group. Kurtosis and Skewness were used in normality tests, and it was determined that the scale scores were normally distributed. Student t-test was used to compare scale scores between groups. Pearson correlation was examined to examine the relationship between the scales. Cronbach's alpha coefficient was calculated in the internal consistency analysis of the scales. All findings were evaluated at the $p<0.05$ significance level**.**

2.6. Ethical Considerations

This research was conducted by the principles of the Declaration of Helsinki. For ethical approval of the research, approval was received from Dicle University Social and Humanities Ethics Committee (29.11. 2022\401087), Dicle University Atatürk Faculty of Health Sciences (13.12.2022\408722) and Dicle University Hospital (15.03.2023\464132). Both written and verbal consent was obtained from the participants.

3. Results

The sociodemographic characteristics of the nurses and nursing students participating in the study are shown in Table 1. It was determined that the average age of nurses was 31.74 (7.13) and nursing students were 22.71 (1.66) years old. 61% of nurses and 66.2% of nursing students were women. It was determined that 56.1% of the nurses had undergraduate degrees and 77.7% of the students were third-year students. 44.7% of nurses had 10 years or more of experience in the profession. It was determined that nurses most frequently worked in internal medicine, pediatrics, surgical clinics, and intensive care units, respectively. 56.1% of the nurses were married and 99.3% of the students were single. 53.7% of nurses reported that they had children. 64.2% of the nurses stated that their income was less than their expenses, and 68.3% of the students stated that their income was equal to their expenses. It was determined that 44.7% of nurses enjoyed their jobs and 69.1% of students did not choose the profession willingly (Table 1).

Table 1. Sociodemographic Characteristics of Nurses and Nursing Students

	Nurses (n=123)		**Nursing Students (n=139)**	
	Min-Max	**$\bar{X}$ ±SD**	**Min-Max**	**$\bar{X}$ ±SD**
Age	20-52	31.74 ± 7.13	20-32	22.71±1.66
Gender	n	%	n	%
Female	75	61	92	66.2
Male	48	39	47	33.8
Educational Status				
High school	20	16.3		
Associate degree	24	19.5		
Undergraduate	69	56.1		
Master's Degree	10	8.1		
3rd Grade			108	77.7
4th Grade			31	22.3
Professional Duration				
0-5 years	33	26.8		
6-10 years	35	28.5		
10 years and above	55	44.7		

Table 1 Continued.

Marital Status				
Married	69	56.1	1	0.7
Singel	54	43.9	138	9.3
Child presence				
Yes	66	53.7	1	0.7
None	57	46.3	138	99.3
Income rate				
Income less than expenses	79	64.2	35	25.2
Income equal to expenses	38	30.9	95	68.3
Income higher than expenses	6	4.9	9	6.5
Doing Your Job With Love \ Choosing a Profession Willingly				
Yes	55	44.7	43	30.9
No	23	18.7	96	69.1
Sometimes	45	36.6		

Min: Minimum, Max: Maximum, SD: Standard Deviation

It was determined that the average age of nurses was 31.74 (7.13) and nursing students were 22.71 (1.66) years old. 61% of nurses and 66.2% of nursing students were women. It was determined that 56.1% of the nurses had undergraduate degrees and 77.7% of the students were third-year students. 44.7% of nurses had 10 years or more of experience in the profession. It was determined that nurses most frequently worked in internal medicine, pediatrics, surgical clinics, and intensive care units, respectively. 56.1% of the nurses were married and 99.3% of the students were single. 53.7% of nurses reported that they had children. 64.2% of the nurses stated that their income was less than their expenses, and 68.3% of the students stated that their income was equal to their expenses. It was determined that 44.7% of nurses enjoyed their jobs and 69.1% of students did not choose the profession willingly. Characteristics of the participants that may be related to their physical and mental health are shown in Table 2. It was determined that 54.5% of nurses and 54.7% of nursing students experienced trauma during their lifetime. It was determined that 75.6% of nurses and 74.1% of nursing students had lost a relative before. 86.2% of nurses and 92.8% of nursing students had never experienced physical or sexual assault before. It was determined that 95.1% of nurses and 95% of nursing students did not have a life-threatening disease. 65% of nurses and 64.7% of nursing students had never experienced a disaster before. It was determined that 7.3% of nurses and 10.8% of nursing students had a health threat to a relative. It was determined that 95.1% of the nurses and 93.5% of the nursing students were not injured due to the accident. It was determined that 97.6% of nurses and 97.1% of nursing students did not experience an accident at home or work. It was found that 1.6% of nurses were exposed to a toxic substance. It was determined that the parents of 94.3% of the nurses and 95.7% of the nursing students were not separated. It was determined that 97.6% of nurses and 97.1% of nursing students did not attempt suicide. It was found that 10.6% of nurses and 12.2% of nursing students experienced academic pressure. It was determined that 95.1% of nurses and 97.1% of nursing students had not experienced migration (Table 2).

Table 2. Characteristics of the Physical and Mental Health of Nurses and Nursing Students

Characteristics	**Nurses (n=123)**		**Nursing Students (n=139)**	
Experiencing Trauma	n	%	n	%
Yes	67	54.5	76	54.7
No	56	45.5	63	45.3
Loss of a Relative				
Yes	30	24.4	36	25.9
No	93	75.6	103	74.1
Physical\Sexual Assault				
Yes	17	13.8	10	7.2
No	106	86.2	129	92.8
Life-Threatening Disease				
Yes	6	4.9	7	5
No	117	95.1	132	95
Experiencing Disaster				
Yes	43	35	49	35.3
No	80	65	35.3	64.7
Health Threat to a Relative				
Yes	9	7.3	15	10.8
No	114	92.7	124	89.2
Accidental Injury				
Yes	6	4.9	9	6.5
No	117	95.1	130	93.5
Having an accident at work or home				
Yes	3	2.4	4	2.9
No	120	97.6	135	97.1
Exposure to Toxic Substances				
Yes	2	1.6		
No	121	98.4	139	100
Separation of Mother and Father				
Yes	7	5.7	6	4.3
No	116	94.3	133	95.7
Suicide Attempt				
Yes	3	2.4	4	2.9
No	120	97.6	135	97.1
Academic Edition				
Yes	13	10.6	17	12.2
No	110	89.4	122	87.8
Migration				
Yes	6	4.9	4	2.9
No	117	95.1	135	97.1

Min: Minimum, Max: Maximum, SD: Standard Deviation, t: Student t Test

The total scale score averages of DAS and MLQ used in this study are shown in Table 3.

Table 3. Comparison of Nurses' and Nursing Students' Total Score Means in DAS and MLQ

Scales	**Nurses (n=123)**		**Nursing Students(n=139)**		**Test /p**
	Min-Max	**$\bar{X}$ ±SD**	**Min-Max**	**$\bar{X}$ ±SD**	
DAS	20-100	48.77 ± 21.66	20-100	53.76±17.55	t: -2.05 p: 0.04*
MLQ	11-69	48.42 (11.38)	17-95	49.58 (10.60)	t: -0.85 p: 0.39

Min: Minimum, Max: Maximum, SD: Standard Deviation, t: Student t Test DAS: Death Anxiety Scale MLQ: Meaning in Life Scale; *:p<0.05

According to the Student t-test analysis, a significant difference was detected between the groups in terms of the total score of the DAS, and the DAS scores of the nursing students were statistically significantly higher. According to the Pearson correlation analysis, a weak negative relationship was detected between the total scores of the nurses on the DAS and MLQ, while no significant difference was found between the scale scores of the nursing students (Table 4).

Table 4. Relationship Between MLQ and DAS Total Scores of Nurses and Nursing Students

Scales	Nurses (n=123)	Nursing Students (n=139)
	MLQ	MLQ
DAS	**r:-.183** **p: 0.043***	r: .121 p: 0.15

r: Pearson Correlation; *: p<0.05

Regression analysis was performed to determine the explanatory power of the DAS and MLQ scores of all nurses and nursing students participating in the study on the DAS. The established model is meaningful; It was determined that MLQ and DAS variables explained 29% of the DAS total score (R^2=0.29, Table 5)

Table 5. The Effect of DAS and MLQ on DAS

Dependent Variable	Independent Variable	B	ß	t	p	F	Model (p)	R^2
DAS	Constant	12.187		10.966	0.00	54.91	0.00	0.29
	DAS	.172	.546	10.45	0.00			
	MLQ	-.001	-.001	-,015	0.98			

SD: Standard Deviation, F: ANOVA test, t: Student t Test

4. Discussion

This study, which was conducted to determine the relationship between fear of death and the meaning of life in nursing students and nurses caring for terminally ill patients, was discussed in line with the literature. It can be said that the descriptive findings of nurses and nursing students, fear of death, and meaning of life score averages are like those of studies in the literature [16,17,18]. In this study, the fear of death of nursing students working with terminal patients was found to be higher than nurses. Studies in the literature have found that nursing students experience death anxiety [16,18]. Nursing students who encounter death during their clinical training may experience stress. Moreover, it has been found that nursing students have difficulty coping with the stress that comes with the care provided and have care concerns [17]. In a study conducted with nurses, it was found that nurses mostly encountered death in the clinics where they worked, they considered death natural and thought that death was a fact of life [19]. In another study, it was determined that nurses with more work experience had lower levels of fear of death and avoidance of death and had more positive attitudes towards death and caring for dying patients [20]. It is thought that nursing students' fear of death is higher than nurses for two reasons. The first reason is that the anxiety experienced by nursing students while caring for a patient in the terminal period may not be due to the fear of personal death, but rather to feelings of inadequacy and helplessness due to not knowing what to do and say to the patient [21]. The second reason is, Considering the claim that it is necessary to confront death to reduce death anxiety in existential theory and the assumption that exposure/exposure, as in cognitive behavioral therapy, is effective in reducing death anxiety, it can be associated with the fact that death anxiety is higher in nursing students than nurses. Although death is a situation experienced by all living creatures, only humans are aware of this situation and attempt to make sense of life. Even though human beings accept

that they are mortal and think that death is inevitable, they may feel anxious and uneasy about the moment of death and afterward [22]. While the presence of meaning in life creates a purpose for our lives and helps us judge our actions, the absence of meaning in life negatively affects individuals psychologically. In this study, it was determined that the meaning of life decreased as the fear of death increased in nurses working with terminal patients. In studies conducted on nurses' attitudes toward the care of terminally ill patients, it has been stated that nurses experience negative emotions such as helplessness and resignation, fear, anxiety, and suffering [17]. In one study, it was determined that meaning of life results predicted death anxiety by 0.1% [23]. Ozcan et al. In their study, they found a positive relationship between the meaning of life and death anxiety [24]. It can be said that as the meaning of life increases, the person moves away from negative attitudes toward death and thoughts about death [16]. In a different study, a significant and directly proportional relationship was found between the meaning and purpose of life and individuals' death anxiety [22]. In another study, participants were found to have a slightly higher meaning in life than average [16]. In the research conducted by Sönmez Benli and Yıldırım (2017), it was determined that nurses' life satisfaction was related to their positive attitudes toward death, and as the level of life satisfaction increased, they showed positive attitudes toward death [25]. In a study conducted in Qatar, it was determined that nurses mainly adopted a neutral and accepting approach to death and death-related issues. In this study, it was determined that they think that death is not a feared or welcomed phenomenon, but at the same time, they see death as a door opening to a happy life after death [26]. In conclusion, it is thought that the meaning of life, which is a source of strength for individuals to continue their lives despite the different difficulties they face in life, can be affected by individual, social, and community factors, and this meaning may change in different life periods for the individual [22].

5. Conclusion

In this study, it can be said that there is no relationship between the fear of death and the meaning of life in nursing students who care for terminal patients, but there is a relationship between the fear of death and the meaning of life in nurses. For nurses to be able to cope healthily with the stress, distress, and strain that arise because of frequent encounters with death, nurses must be mentally prepared, primarily for their mental health. It is thought that it would be a good method to provide death education to nursing students who will be health professionals, to help them change their awareness of death anxiety, adaptation to death and negative attitudes towards death, and the coping methods they use to cope with death. For this reason, it has been suggested that death education should be presented in lectures or scientific events such as independent seminars and conferences, encouraging students to talk about their feelings and thoughts about death, accompanying the patient and his/her family when they are approaching death, providing consultancy services and concretizing the subject with case discussions.

Ethical statement:

This study was carried out in accordance with research and publication ethics rules. Approval for this study was received from the Dicle University Social and Human Sciences Ethics Committee on 29.11.2022 with number 401087.

Acknowledgment:

This study was supported by TÜBİTAK–2209-A University Students Research Projects Support Program with application number 1919B012207083.

Conflict of interest:

All three authors declared that they had no conflict of interest in this study.

Authors' Contributions:

The authors declare that their contribution to the work is equal. MA: Project coordinator; FK: project researcher; FG: project advisor.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp
IJHSRP
e-ISSN: 2602-3482

Research Article

EFFECTS OF COVID-19 ANXIETY AND COVID-19 QUALITY OF LIFE ON COVID-19 BURNOUT IN PSYCHIATRIC NURSES

***İbrahim GÜN*[*1] *Nur Elçin BOYACIOĞLU*[2] *Semra ENGİNKAYA*[3]**

[1]Batman University Faculty of Health Sciences Health Management Department, Batman, Türkiye
[2]Istanbul University-Cerrahpasa Faculty of Health Sciences Gerontology Department, İstanbul, Türkiye
[3]Bakırköy Prof. Dr. Mazhar Osman Mental and Neurological Diseases Train. and Res. Hospital, İstanbul,Türkiye
[*]Corresponding author; ibrahim.gun@batman.edu.tr or ibrahimgun1@gmail.com

Abstract: *Nurses are key professionals in fighting the COVID-19 pandemic and they provide services beyond expectations. Although psychiatric nurses are suffering from anxiety and burnout they need to enhance and protect their quality of life. The major aim of the study was to investigate the effects of COVID-19 anxiety on COVID-19 quality of life and COVID-19 burnout, and the impact of COVID-19 quality of life on COVID-19 burnout on psychiatric nurses. The descriptive-relational design was used. The sample consisted of 159 nurses working in a state psychiatric hospital in İstanbul, determined by convenience sampling method. The data of the study was collected by using the socio-demographic form, COVID-19 Anxiety Scale, COVID-19 Life Quality Scale, and COVID-19 Burnout Scale. Statistically significant relationships were found between COVID-19 anxiety, COVID-19 life quality, and COVID-19 burnout. The increase in the anxiety of psychiatric nurses due to COVID-19 also increases the negative effect on their quality of life. COVID-19 anxiety positively affects burnout related to COVID-19. The increase in the negative effects of COVID-19 on the life quality of nurses causes an increase in burnout levels. The effect of COVID-19 on their life quality and the burnout based on COVID-19 was investigated in the research. Nurses are surpassing traditional boundaries, providing their services without constraints to confront the challenges posed by the COVID-19 pandemic. Their dedication knows no bounds as they work tirelessly to navigate through these difficult times, transcending conventional limits to offer essential care and support. Policymakers can alleviate the increasing physical and psychosocial burden of psychiatric nurses by providing financial and moral support. Additionally, medical, psychosocial, and legal resources should be provided to psychiatric nurses.*

Keywords: *COVID-19 anxiety, COVID-19 quality of life, COVID-19 burnout, psychiatric nurses*

Received: January 11, 2024 *Accepted: February 28, 2024*

1. Introduction

In the year 2020, healthcare workers (HCWs) found themselves at the forefront of an unprecedented global challenge—the COVID-19 pandemic [1]. HCWs serve as the bedrock of health systems, playing a pivotal role in advancing universal health coverage and bolstering global health security. Their dedication and professionalism have been seen by all, proving that they do extraordinary work throughout the pandemic. However, many of the HCWs have been infected, sickened, or died due to COVID-19. Who approximates that from January 2020 to May 2021, a staggering 80,000 to 180,000 HCWs may have lost their lives by the reason of COVID-19? This estimate implies that around 115,500 HCWs were potentially confronted with the risk of death during this period. [2]. The COVID-19

pandemic not only affected HCWs by death but also economic crisis; stress, a high unemployment rate, and physical and psychological health consequences were caused [3].

In such an environment, the anxiety levels of HCWs and the level of burnout are expected to increase, whereas their quality of life is expected to decrease. HCWs face increasing health issues including mental, such as anxiety, insomnia, depression, burnout, and poor quality of life [3].

Because of their close contingence with infected patients, HCWs are more vulnerable to compelling incidents like patient suffering and death. Anxiety has been prevalent among healthcare professionals who are directly associated with the management of affected patients during the pandemic [4].

It has been indicated that the anxiety percentage among nurses during COVID-19 varies between 22.2% and 27% globally [5]. The main reason for this was the fear of being infected or infecting others unknowingly [4].

As the number of patients infected by the pandemic increased, the burden on HCWs' who get a contact with patients increased. Stress, anxiety, and burnout can affect both their performance and status of health and decrease their quality of life [6].

The concept of "job burnout" was initially introduced by a clinical psychologist called Freudenberger (1974) and subsequently applied within the realm of mental health research [7]. It is a known fact that nurses hold a crucial and indispensable role in various facets of infection management, incorporating aspects such as preventing infections, implementing control measures, isolation practices, containment strategies, and promoting public health. There is a limited body of research examining the mental health challenges exposed by clinical medical workers amid the COVID-19 epidemic [8]. Changes in the quality of life and increased anxiety within the nurses could give rise to substantial challenges across individual, social, and occupational dimensions. These challenges have the potential to impact daily personal functions, including eating, sleeping, and overall health [9].

Nurses working in the psychiatry unit generally experience psychological distress and they often experienced workplace violence. Therefore, they constantly expressing anger, pity, fear, etc. Job burnout risk arises when they faced negative emotions [7]. For this purpose, this study aimed to investigate the effects of COVID-19 Anxiety (COV19Anxty) on COVID-19 quality of life (COV19QoL) and COVID-19 burnout (COV19Bo), and effects of COV19QoL on COV19Bo on psychiatric nurses. In this concept, a research model was created and presented in Figure 1.

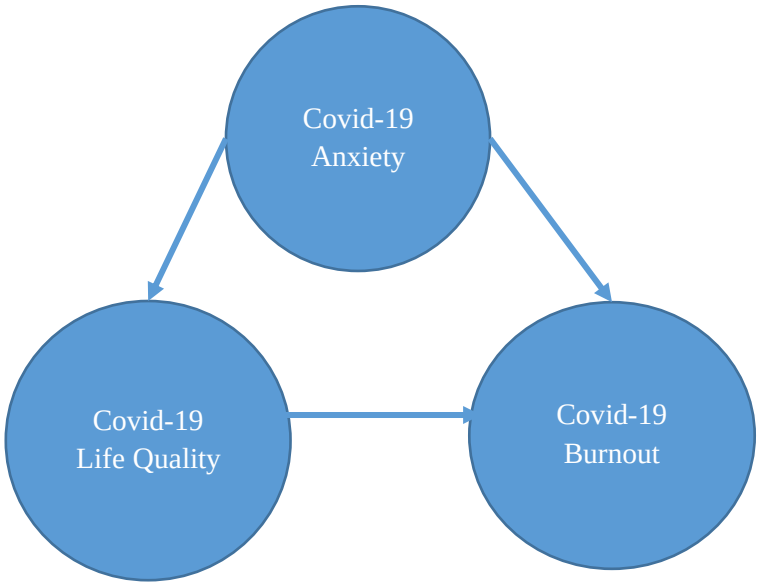

Figure1: Research Model

2. Material and Methods

2.1. Design

The study was structured using a descriptive-correlational design. This research approach aimed to describe and analyze the relationships between variables, providing a comprehensive overview of the studied phenomena without manipulating any variables.

2.2. Participants

Study data were gathered between June 2022 and August 2022. Convenience sampling method was used and aimed to reach the entire population. Out of the 200 nurses employed in the psychiatry clinics at a Psychiatry Hospital in Istanbul, 163 actively took part in the research. The analysis included the assessment of all 159 questionnaires received, resulting in a response rate of 79.5%. To meet the criteria for inclusion, participants were required to be currently employed in the psychiatry clinic of the relevant hospital and willingly express their desire to participate in the study. No specific exclusion criteria were applied, ensuring an inclusive approach to gather insights from all eligible participants in the psychiatry clinic.

2.3. Instruments

The data was collected by using personal information form (8 items), COV19 Anxiety Scale (7 items), COVID-19 Life Quality Scale (6 items), and COV19BO Scale (10 items).

2.3.1 Personal Information Form

The survey encompassed eight inquiries covering demographic aspects, including age, gender, marital status, education level, professional position (nurse supervisor or service nurse), general work shifts, specific work location, and the number of years of professional experience.

2.3.2 COVID-19 Anxiety Scale

Turkish adoption of the scale was conducted by Ladikli, Bahadır, Yumuşak, Akkuzu, Karaman and Türkkan [10]. The scale’s internal consistency was 0.82. Furthermore, the test-retest reliability analyzed for the data and it was found 0.72. Answers by the participants given to the items are rated on a 5-point Likert type scale. Scale items are scored range from 1-5. High score indicates high anxiety. There is no reverse item in this scale. The Cronbach alpha for this study was 0.82.

2.3.3 COVID-19 Quality of Life Scale

Turkish adoption of the scale conducted by Sumen and Adibelli [11]. The survey employs a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to assess the feelings and thoughts of individuals over the last seven days. The scale, consisting of a single factor and comprising six items, gauges the impact of the pandemic on one's quality of life. A higher cumulative score on the scale indicates a more significant influence of the pandemic on the respondent's overall quality of life. The design of the scale is structured to capture the nuanced experiences and perceptions of individuals within the specified timeframe. The Cronbach alpha for this study was 0.91.

2.3.4 COVID-19 Burnout Scale

Burnout level related with COVID-19 scale validated by Yılmaz and Solmaz [12]. It consists of 10 items. Each item of the scale is evaluated using a 5-point Likert scale, ranging from 1 (indicating "never") to 5 (indicating "always"). To derive a total score, one can sum the values assigned to all 10 items, resulting in a score range between 10 and 50. A higher cumulative score signifies elevated levels of burnout associated with the impact of COVID-19. In essence, the total score serves as an indicator,

with an increase reflecting a higher degree of burnout experienced in relation to the challenges presented by the COVID-19 situation. The Cronbach alpha for this study was 0.92.

2.4. Procedure

The scales used in the present research was created by reviewing the scales in the literature to evaluate the effect of COVID-19 features of the psychiatric nurses. Before we started our research ethical committee approval and permission to conduct study in a public hospital from Ministry of Health have been gathered. Before the data collection, a pilot study was undertaken involving a social worker, two psychiatric nurses, and two psychiatrists to solicit expert evaluations and assess the clarity of the questions and items. The data were gathered via Google Forms. A researcher with firsthand experience in psychiatric clinics (holding a bachelor's degree) conducted interviews with the participants. The researcher extended invitations to potential participants and shared the survey link with those willing to volunteer. This approach ensured the refinement of the survey instrument and the collection of valuable insights from individuals with expertise in the relevant field.

2.5. Statistical analysis

In this study to analyze the data SPSS 20 and SPSS AMOS 22 package program were used. There is no missing data in the data set. Descriptive statistics, Pearson correlation analysis, confirmatory factor analysis, and path analysis were used to analyze the data. The confidence interval was assumed to be 95% at a significance level of <0.05.

Ethical Approval

Approval from the ethical committee of Istanbul University Cerrahpaşa was obtained (decision date: May 06, 2022; decision number: 2022/28) before initiating the study. The research adhered to the principles outlined in the 1964 Helsinki Declaration and complied with the ethical standards set by the National Research Committee.

3. Results

The research was carried out with 159 psychiatric nurses. Median age of participants is 27±6.33. Of the participants 76.73% were women, 53.46% not willing to work during COVID-19 (for details see Table 1).

Table 1. Socio-demographic and COVID-19 related characteristics

Variables		**N**	**%**
Age	Median=27±6.33		
Gender	Female	122	76.73
	Male	37	23.27
Willingness to work during COVID-19	Yes	33	20.75
	No	85	53.46
	Not Sure	41	25.79
With whom s/he lived	Alone	39	24.53
	With partner	28	17.61
	With partner and children	35	22.01
	Friend/s	19	11.95
	Relative/s	38	23.90

Table 1. Continued.

Variables		N	%
Treated confirmed COVID-19 patients	Yes	112	70.44
	No	47	29.56
Working time in the institution	Less than 1 year	9	5.66
	1-5 years	100	62.89
	6 years and more	49	31.41

Mean scores of COV19Anxty, COV19QoL, and COV19Bo scales were 3.21±1.00, 3.32±0.66, and 30.14±7.59 respectively (Table 2). These data indicate that anxiety, related to COVID-19, negative effects of COVID-19 on quality of life and COV19Bo levels are all above the average scores on psychiatric nurses.

Table 2. Descriptive statistics and reliability values of the scales

Scales	n	Cronbach's Alpha	Mean	SD
COVID-19 Anxiety	159	0.92	3.21	1.00
COVID-19 Quality of Life	159	0.74	3.32	0.66
COVID-19 Burnout	159	0.91	30.14	7.59

Based on the Pearson correlation results (see Table 3), a statistically significant and positive relationship was detected between COV19Anxty and, COV19QoL (r=0.372, $p< 0.05$). In this context, as COV19Anxty increases, negative effects of COVID-19 life quality increases. Additionally, increase in COV19Anxty results in increase in COV19Bo, because there is positive and significant relationship between these variables (r=0.639, $p< 0.05$). Lastly, there is also positive and significant relationship found between COV19QoL and COV19Bo (r=0.686, $p< 0.05$).

Table 3. Relationship between scales

Scales	COVID-19 Anxiety		COVID-19 Burnout	
	r	p	r	p
COVID-19 Life Quality	.372**	.000	.686**	.000
COVID-19 Anxiety			.639**	.000

Note: ** Correlation is significant at the 0.01 level (2-tailed).

The evaluation of model fit evaluated based on multiple statistics to test for both the measurement and structural models, as relying on a single statistic would not provide sufficient evidence of model adequacy [13]. The indices employed in this research included the $\chi 2$/df ratio, Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA). A low and statistically insignificant $\chi 2$ value below 5 indicates an acceptable fit, while a value below 3 suggests a good fit. However, it should be noted that $\chi 2$ is sensitive to sample size [14]. RMSEA value less and 0.08 or less is indicative of a good fit, while values of 0.10 or less, indicate an acceptable fit. Furthermore, Hu and Bentler [13] recommended threshold values for NFI, TLI, and CFI of 0.90 or greater for acceptable fit, and 0.95 or greater for good fit. Based on the results of the confirmatory factor analysis (CFA), all fit indices for the measurement model demonstrated a good fit to the data (Chi-square/df:1.689; GFI:0.856; NFI:0.868; TLI:0.930; CFI:0.941; RMSEA:0.066). Due to the limited number of universes, we studied, perfect fit values could not be achieved, but they are statistically acceptable. The findings indicate that the proposed model demonstrated a satisfactory fit to

the data. While the GFI value of 0.86 fell slightly below the 0.90 threshold, all values were within the range of recommended standard [15, 16].

In this model, we tested 3 hypotheses:

- H_1: COV19Anxty has significant effect on COVID-19 life quality
- H_2: COV19Anxty has significant effect on COV19Bo
- H_3: COVID-19 life quality has significant effect on COV19Bo

The results obtained from the model are compatible with the data and the model fit index values are obtained within the desired limits. According to the results, the path coefficient of COV19Anxty and life quality related with COVID-19 was statistically significant (β=0.53, p=0.00). Therefore, hypothesis H_1 was confirmed. The increase in the anxiety of psychiatric nurses due to COVID-19 also increased the negative effect on their quality of life. Increase in the level of COV19Anxty in nurses also resulted in increased level of burnout. COV19Anxty positively affects burnout (β=0.34; p=0.00; H_2 confirmed).

The increase in the negative effects of COVID-19 on the quality of life of nurses causes an increase in burnout levels. Therefore, a positive and statistically significant effect was detected (β=0.67, p=0.00; H_3 confirmed).

In summary, the model indicated that COV19Anxty has a positive effect on COVID-19 life quality and COV19Bo. When anxiety increases related with COVID-19, negative effects of COVID-19 on life quality in psychiatric nurses increases. In the same way, when anxiety increases, level of burnout increases in participants. Additionally, a negative effects of life quality related with COVID-19 increases; COV19Bo level of nurses increases ($p<0.05$)(Table 4).

Table 4. Results of Path Analysis

Hypothesis	Independent Variable	Dependent Variable	β	Direct Effect		
				CR	P-Value	Information
H1	COVID-19 Anxiety	COVID-19 Life Quality	0.53	4,26	0.00*	Supported
H2	COVID-19 Anxiety	COVID-19 Burnout	0.34	4,46	0.00*	Supported
H3	COVID-19 Life Quality		0.67	4,61	0.02*	Supported

β: Beta CR: Critical Ratio *: p <0.05

4. Discussion

The aim of the study is to figure out the effects of COV19Anxty on COV19QoL and COV19Bo, and effects of COV19QoL on COV19Bo on psychiatric nurses. The SEM approach was employed to test the model to investigate if COV19Anxty has significant effects on COVID-19 life quality (H_1) and COV19Bo (H_2). In the SEM approach lots of regression analysis could be done in the same time. In the model authors also tested if there is a significant effect COV19QoL on COV19Bo (H_3). According to results all hypothesis (H_1, H_2 and H_3) accepted.

In a research study involving 2,014 frontline nurses in Wuhan, the results revealed that 288 individuals (14.3%) reported experiencing moderate levels of anxiety, 217 nurses (10.7%) reported moderate levels of depression, and a significant proportion of 1,837 nurses (91.2%) reported high levels of fear. This findings indicated up to 45% of the nurses exposed of anxiety or depression [17]. In a study carried out by Bayrak et al. on nurses, 80.7% of nurses were found to have high anxiety levels during COVID-19 pandemic [18]. Results of the study indicated that the anxiety level of nurses is above the average, parallel with the literature.

The first hypothesis of the research examines the effect of COV19Anxty on COV19QoL. Fazeli et al. In a study conducted by 1512 nurses, it was determined that there was a moderate negative correlation between Anxiety and life quality [19]. In a cross-sectional study examining in Iran, a substantial negative association was observed between COV19Anxty and the quality of life. This relationship remained statistically significant, indicating a considerable effect size (partial $r = -0.515$, $p < 0.001$). The findings underscored that heightened COV19Anxty among nurses is linked to a notable decrease in their quality of life. Furthermore, the authors reported that for each unit increase in the mean anxiety score, there was a corresponding reduction of 0.81 units in the quality of life score. [9].

According to the findings, the COV19Bo levels of the participants were found above the average. In a study carried out with the participation of 2707 health professionals in 60 countries 51% of respondents reported 60 reported burnout in 2020. in the country. 33 countries reported burnout of 60 countries [20]. These results show that COVID-19 increased burnout level of health professionals. In another study conducted with 375 clinical nurses in Saudi Arabia, moderate burnout was detected in nurses [21]. In another research carried out, the burnout level of nurses was determined quite high [22]. It has been concluded that the findings show that burnout level of psychiatric nurses above the average in parallel with the other researches. Studies show that the COVID-19 outbreak has left many psychological effects, especially on health professionals [23]. The high level of burnout brings many mental health problems in HCWs. A study has shown that high levels of burnout result in insomnia [24, 25].

The results indicated that anxiety due to COVID-19 had a significant and positively correlated with COV19 Bo and had an indispensable variable in the path analysis model for the variable of burnout [26]. In our study we also found a positive effect of anxiety on burnout.

According to research, HCWs on the frontline, particularly those engaged in diagnosing and treating patients with COVID-19, have reported elevated levels of burnout. This burnout is linked to various symptoms, including insomnia, depression, and anxiety [27]. In our study, about 70% of psychiatric nurses treated people who were officially diagnosed with COVID-19, and their burnout levels were found to be high. Çemeçe and Menekay (2020) stated that moderate and positive correlation between anxiety and burnout was found [6]. In parallel with the results of our study.

The anxiety of nurses can result in depression and decrease their quality of life. A study of nurses in China supports this idea.[28] The findings of the researchers also confirm that the effects of COVID-19 on the quality of life of nurses are noticeably high. According to the results of a study, a high and negative correlation was detected between COV19Bo and COV19QoL [6]. The life quality of nurses scale used in this study was designed based on the effects of COVID-19, and the higher score indicated the lower the quality of life.

5. Limitations

Major limitation of this study is that it has conducted in a one center. The sample was limited to voluntary online participants. No assessment was made of the severity of COVID-19 in the sample group. Presence of mental problems did not include a clinician's assessment; it was based on the participants' self-assessment. Since COV19Anxty, COVID-19 Life Quality and COV19Bo items has ambiguity maybe common method bias can be considered as other limitations of this research.

6. Conclusion

Coronavirus has brought about changes in the lives of many of us since it entered our lives, but health professionals who have to constantly struggle with this disease have faced more difficulties than anyone else. During the COVID-19 pandemic, nurses faced increased workload, lack of support, fatigue

and risk of infection. This situation they faced has increased their COV19Anxty level. The reason why, the effect of COVID-19 on their quality of life and the burnout due to COVID-19. While nurses are extending their services beyond traditional limits to help us overcome the challenges of the COVID-19 pandemic, it's crucial to note that psychiatric nurses, despite their dedication, are grappling with anxiety and burnout. The challenging experiences of psychiatric nurses during the COVID-19 outbreak may cause a decrease in the quality of service they provided. This may harm both themselves and the quality of health services. It also may result in layoffs. The present investigation, alongside existing studies in the literature, underscores the lasting repercussions of negative pandemic experiences. It emphasizes the critical need for swift provision of comprehensive medical, psychosocial, and legal support to health professionals, especially psychiatric nurses. Timely access to these resources is imperative to effectively deliver the required treatment and care for psychiatric nurses grappling with the challenges presented during the COVID-19 outbreak. Policy makers can alleviate the increasing physical and psychosocial burden of psychiatric nurses by providing financial and moral support.

In the light of the findings obtained from the research, it would be beneficial for the hospital management to provide a resilience development program in addition to psychological support services.

Acknowledgments

We thank all respondents.

Ethical Approval

Approval from the ethical committee of Istanbul University Cerrahpaşa was obtained (decision date: May 06, 2022; decision number: 2022/28) before initiating the study. The research adhered to the principles outlined in the 1964 Helsinki Declaration and complied with the ethical standards set by the National Research Committee.

Conflict of interest

No conflict of interest declared.

Author's Contributions:

Author's contributions to the study are equal.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp
IJHSRP
e-ISSN: 2602-3482

Research Article

FEAR OF PREGNANCY AND BIRTH

***Saadet BOYBAY KOYUNCU*[1], *İpek TURAN**[2]

[1] Department of Midwifery, Faculty of Health Sciences, Adıyaman University, Adıyaman, Turkiye
[2] Department of Midwifery, Faculty of Health Sciences, Adıyaman University, Adıyaman, Turkiye
Corresponding author: ipekturan02@gmail.com

Abstract: *This study aimed to examine the relationship between internet use and fear of childbirth in pregnant women. This descriptive cross-sectional study was conducted with a total of 385 pregnant women who were referred to a hospital in Turkey. Data were collected using a personal information form and the Women Childbirth Fear – Prior to Pregnancy Scale (WCF-PPS). The WCF-PPS total mean score of the pregnant women was 38.04±10.49 (17-60) and there was a weakly significant positive correlation between their WCF-PPS total score and duration of daily internet use. In addition, there was a statistically significant relationship between their WCF-PPS total mean score, the issues searched on the Internet about pregnancy/childbirth, the status of believing in the accuracy of the information they obtained on the Internet, the status of confirming this information by health professionals, and the status of having concerns about this information (p<0.05). It is recommended that health professionals be aware of the information needs of pregnant women and take appropriate initiatives in this regard.*

Keywords*: Childbirth, fear, internet, pregnancy.*

Received:January 8, 2024 *Accepted: February 27, 2024*

1. Introduction

Childbirth is a painful process with outputs that cannot be predicted with certainty. Considering the uncertainty of this process, it is normal for women to have some fear of childbirth (FOC) [1, 2]. Fear of childbirth among pregnant women was first examined [3, 4]. The factors of fear of childbirth in pregnant women include previous negative birth experiences [5], misinformation, low trust in existing healthcare organizations and providers [6], inadequate preparation (both physically and mentally) for pregnancy and delivery [7], fear of death, fear of losing control during active labor, and fear of prolonged labor pains [8]. Women search for different information about the childbirth fears they experience during pregnancy.

Today, with the rapid development in information and communication technologies, the widespread use of the Internet has made social networks, which are expressed as social media, a part of our lives and caused them to be used as a source of health information [9]. More than 57% of the world's population is active internet users. This rate varies between 60-98% in European countries, while it is 83.3% in Turkey [10]. During pregnancy, most women actively use their mobile phones [11]. Individuals search for health information on the Internet before getting information from health professionals and doctors [2]. Several studies have shown that pregnant women seek to obtain information about childbirth, fetus, labor pain, fear of childbirth, and pregnancy over the Internet [2, 12]. Polluted information obtained from the Internet during pregnancy can cause unnecessary worry, anxiety, stress, and fear of childbirth in pregnant women.

Today, one of the risky aspects of internet and media use is that the researched information is accepted as accurate and reliable without confirming it by a health professional/midwife [13]. This situation causes women to be unable to find a solution to their pregnancy and birth needs [14]. Women need to obtain information from accurate and reliable sources that have been adequately confirmed by midwives, to have healthy pregnancy and labor.

Considering the widespread use of social media and the Internet today, women-oriented interventions can be developed for fear of childbirth in pregnant women. Midwives should be aware of how internet use affects pregnant women in every follow-up and counseling, provide training, and direct them to the right sources to obtain relevant information. Although there are studies on the fear of childbirth in Turkey, they did not examine the relationship between internet use and the fear of childbirth in detail. Therefore, this study aimed to examine the relationship between internet use and fear of childbirth in pregnant women.

2. Materials and Methods

2.1. Research Design and Participants

The population of this cross-sectional descriptive study consisted of healthy pregnant women between January 24 and September 09, 2022, in a province in the east of Turkey. The sample size was determined as 282 pregnant women with a 5% error level, bidirectional significance level, 95% confidence interval, and 0.89 power of representation. Pregnant women were selected by random sampling method, which is one of the non-probability sampling methods. Healthy pregnant women over the age of 18 years who were able to communicate and agreed to participate in the study were recruited. Those who had any health issues were excluded from the study.

2.2. Measures

The data were collected using a personal information form and the WCF-PPS through face-to-face interviews. Information about the study was presented on the first page of the online survey form and the participants filled in the survey form only once.

2.2.1 Personal Information Form

The form was developed by the researchers in line with the literature and included a total of 25 questions about the pregnant women's socio-demographic characteristics, pregnancy, number of living children and miscarriages, duration of pregnancy, whether having a planned pregnancy, planned delivery type, negative experiences in previous childbirths, status of attending a pregnant school, status of having social support, and internet use.

2.2.2 Women Childbirth Fear – Prior to Pregnancy Scale (WCF-PPS)

The scale was developed by Stoll et al. (2016) and is a self-reported scale to measure the pre-pregnancy fear of childbirth in young women and men [15]. The Turkish validity and reliability study of the scale was performed by Uçar and Taşhan in 2018 [16]. The minimum and maximum scale scores are 10 and 60, respectively. A higher item-total score indicates a greater level of fear of childbirth. The Cronbach's alpha coefficient of the scale was 0.86 [15]. In our study, the Cronbach's alpha coefficient of the scale was calculated as 0.90.

2.3. Data Collection

Data were collected by the researcher. Pregnant women were informed about the study and their consent was obtained. Personal information form and Women's Pre-Pregnancy Fear of Birth Scale (WCF-PPS) were used as data collection tools.

2.4. Statistical Analysis

The data was analyzed using the SPSS for Windows 15.0 (Statistical Package for Social Science for Windows) package program. The Kolmogorov-Smirnov test was used to check whether the data had a normal distribution. The data were evaluated using descriptive statistics including numbers, the Kruskal Wallis test, the Mann-Whitney U test, and Pearson's correlation analysis.

Ethical considerations

For conducting the study, Ethics committee approval for this research was received from the Non-Interventional Clinical Research Ethics Committee of a university on 24/01/2022 with decision number 2022/202. In addition, the participants were informed about the study and explained that their personal information would be kept confidential.

3. Results

Table 1 shows the pregnant women's socio-demographic characteristics and WCF-PPS total score distribution. There was a statistically significant relationship between the pregnant women's WCF-PPS total mean scores, employment status, duration of education, and duration of spouse's education ($p<0.05$). There was no statistically significant relationship between their WCF-PPS total mean scores, age, spouse's employment status, monthly income, family type, and place of residence ($p>0.05$).

Table 1. The Relationship Between Pregnant Women's Socio-Demographic Characteristics and WCF-PPS Total Scores (N: 282)

Socio-Demographic Characteristics	Number (%)	$\bar{X}$ ±SD	WCF-PPS Total Score	Statistical test
Age		30.36±13.24	38.04±10.49	r=-0.016* p=0.792
Employment Status				
Yes	89(31.6)		41.82±11.21	Z=-4.237
No	193(68.4)		35.89±9.44	p=0.000**
Husband's Employment Status				
Yes	261(92.6)		37.78±10.65	Z=-0.032
No	21(7.4)		37.52±6.44	p=0.974
Duration of Education (year)				
≤ 4	53(18.8)		37.66±10.23[a]	KW=10.74 [α]
5-8	49(17.4)		36.73±8.81[a]	p=0.004*
≥ 9	180(63.8)		39.33±10.79[b]	
Duration of Husband's Education (year)				
≤ 4	52(18.4)		40.63±8.24	KW=21.416
5-8	116(41.1)		34.57±10.44	p=0.000**
≥ 9	114(40.4)		40.31±10.51	
Monthly income				
High	65(23.0)		37.68±10.28	KW=1.498
Moderate	196(69.5)		38.40±10.61	p=0.473
Low	21(7.4)		35.85±10.26	
Type of family				
Nuclear family	242(85.8)		37.77±10.27	Z=-0.672
Extended family	40(14.2)		39.80±11.89	p=0.502
Place of residence				
City	239(84.8)		38.11±10.74	Z=-0.048
County/Village	43(15.2)		37.50±8.71	p=0.962

r: Pearson correlation analysis, α: KW: Kruskal Wallis Test; Z: Mann Whitney U Test ;*:p<0.05; **:p<0.01

Table 2 shows the pregnant women's obstetric characteristics and WCF-PPS total score distribution. There was a statistically significant relationship between the pregnant women's WCF-PPS total mean scores, number of pregnancies, number of living children, duration of pregnancy, type of planned delivery, type of desired delivery, presence of negative experiences in previous childbirths, and presence of social support ($p<0.05$). There was no statistically significant relationship between their WCF-PPS total mean scores, number of miscarriages, status of having planned pregnancy, and status of attending a pregnant school ($p>0.05$).

Table 2. The Relationship Between Pregnant Women's Obstetric Characteristics and WCF-PPS Total Scores (N: 282)

Obstetric Characteristics	Number (%)	WCF-PPS Total Score	Statistical test
Number of Pregnancy			
Primiparous ≤1	103(36.5)	40.32±8.74	Z=-3.343
Multiparous ≥2	179(63.5)	36.72±11.19	p=0.001**
Number of Living Children			
≤1	178(63.1)	39.19±9.74	Z=-2.735
≥2	104(36.9)	35.96±11.48	p=0.006**
Gestational time (months)			
0-3	90(31.9)	35.31±10.24	KW=10.201 α
4-6	85(30.1)	36.90±10.11	p=0.001**
7-9	107(37.9)	42.88±10.96	
Number of Miscarriage			
≤1	247(87.6)	38.02±10.41	Z=-1.477
≥2	35(12.4)	32.00±12.86	p=0.140
Had a Planned Pregnancy			
Yes	220(77.5)	38.33±10.43	Z=-1.006
No	62(22.5)	36.73±10.72	p=0.315
Planned Type of Delivery			
Normal delivery	147(52.42)	38.72±10.02[a]	KW=-6.556
Cesarean section	70(24.4)	44.58±12.01[b]	p=0.000**
None	65(23.18)	39.34±13.44[a]	
Desired Type of Delivery			
Normal delivery	212(75.6)	36.72±9.82	Z=-2.413
Cesarean section	70(24.4)	41.60±12.07	p=0.016
Negative Experiences at Previous Childbirth			
Yes	232(82.3)	37.07±10.15	Z=-2.915
No	50(17.7)	41.97±10.83	p=0.003**
Attended Pregnant School			
Yes	50(17.0)	37.27±8.30	Z=-0.012
No	232(73.0)	38.23±10.91	p=0.990
Social Support			
Yes	260(92.2)	37.66±10.48	Z=-2.588
No	22(7.8)	45.33±7.83	p=0.010*

α: KW: Kruskal Wallis Test; Z: Mann Whitney U Test ;*:p<0.05; **:p<0.01

Table 3 shows the relationship between the pregnant women's characteristics of internet use and WCF-PPS total score distribution. The women spent an average of 1.80±1.55 hours a day on the Internet, and an average of 1.32±1.26 hours a day to research topics related to pregnancy/childbirth. In addition, 34.4% of them used spending time, 50.4% researched the methods of coping with labor pains, 71.3% believed that the information they obtained from the Internet was correct, and 41.8% did not confirm the information they obtained from the Internet by health professionals.

In addition, there was a weak positive relationship between the pregnant women's WCF-PPS total mean scores and the times they spent on the Internet and searching for pregnancy/childbirth-related issues. In

addition, there was a statistically significant relationship between their WCF-PPS total mean scores, the subjects they searched about pregnancy/childbirth, status of believing in the accuracy of the information they obtained on the Internet, status of confirming this information by health professionals, and status of having concerns due to the information they obtained from the Internet ($p<0.05$). There was no statistically significant relationship between their WCF-PPS total mean score and internet usage purposes ($p>0.05$).

Table 3. The Relationship Between Pregnant Women's Internet Usage Characteristics and WCF-PPS Total Scores (N: 282)

Internet Usage Characteristics	**Number (%)**	**$\bar{X}$ ±SD**	**WCF-PPS Total Score**	**Statistical test**
Time spent on the Internet (per day)		1.80±1.55	38.04±10.49	r= 0.352 p=0.000**
Time spent on the Internet researching pregnancy/childbirth-related topics		1.32±1.26	38.04±10.49	r= 0.235 p=0.014*
Internet usage purpose				
Playing games - shopping - meeting new people	52(18.4)		40.56±13.51	KW=5.567$^{\alpha}$
Getting information	48(17.0)		36.44±8.05	p=0.206
Spending time	97(34.4)		38.63±9.57	
Using Social media	85(30.2)		36.80±10.64	
Issues searched for pregnancy/childbirth (multiple options marked)				
Formation of pregnancy	58(20.4)		35.31±10.22	KW=21.556
Complications during pregnancy	49(18.0)		36.90±10.13	p=0.000**
Nutrition during pregnancy	97(35.7)		38.88±10.98	
Infant development	85(33.2)		36.33±10.24	
Type of delivery	98(18.4)		43.86±10.11	
Problems during childbirth	120(48.4)		44.78±10.96	
Methods of coping with labor pain	128(50.4)		43.83±11.35	
Belief in the accuracy of Internet information				
Yes	201(71.3)		39.38±10.11	Z=-3.029
No	81(28.7)		34.72±10.56	p=0.002*
Status of confirming information obtained from the Internet by health professionals				
Yes	164(58.2)		39.59±10.25	Z=-2.974
No	118(41.8)		36.01±10.34	p=0.003**
Status having concerns due to information obtained from the Internet				
Yes	118(39.0)		42.26±9.99	Z=-5.282
No	164(58.2)		35.34±9.77	p=0.000**

r: Pearson correlation analysis; α: KW: Kruskal Wallis Test; Z: Mann Whitney U Test ;*:p<0.05; **:p<0.01

4. Discussion

Pregnancy is a complex process in which women experience many emotions together, including fear of childbirth. Due to fear of childbirth, women are considered to have complications regarding both their health and their baby's health during pregnancy/childbirth. In our study, the pregnant women had a moderate level of fear of childbirth. Like our study, several studies in the literature have reported that pregnant women have moderate or high levels of fear of childbirth [17, 18].

Several factors affect the fear of childbirth. This study examined the relationship between internet use during pregnancy and fear of childbirth. In our study, the pregnant women's WCF-PPS total scores increased as the average time they spent on the Internet and searching for pregnancy/childbirth-related issues increased. Pregnant women mostly searched online about the possible problems in childbirth and methods of coping with labor pains. Cirban and Özsoy (2020) found that women surfed on the Internet for many subjects related to pregnancy, childbirth, and the postpartum period. A study reported that the majority of women searched on the Internet about labor pains and fear of childbirth [19]. Kocademir and Öter (2022) found that women used the Internet to have information about pregnancy because they

had easy and fast access to information, and mostly searched on fear of childbirth and labor issues [20]. In the literature, there is no study about the relationship between internet use and fear of childbirth. However, diverse studies on the subject have reported that women use the Internet to search for topics related to pregnancy/childbirth and benefit from the Internet by getting information about how to cope with the fear of childbirth.

Our study determined that pregnant women spent more than an hour on the Internet daily and used the Internet to obtain information about pregnancy/childbirth for more than one hour a day. Jacobs Steijn and Pampus (2019) reported that 95.6% of women with a plan for having pregnancy and pregnant women used the Internet as a source of information, and most women spent less than two hours a day on the Internet [21]. Cirban and Özsoy (2020) have determined that the Internet is frequently used during pregnancy in Turkey and across the world [19]. Kocademir and Oter (2022) found that 47.6% of pregnant women spent two hours or more on the Internet a day, 78.9% used the Internet every day, and 65.0% used the Internet during pregnancy more than before pregnancy [20]. Our study suggests that women frequently use the Internet, which is compatible with the literature.

In our study, most pregnant women believed in the accuracy of the information they obtained from the Internet, which has increased their fear of childbirth. Masella and Godard (2020) stated that pregnant women may have misinformation and disproportionate information while using the Internet [22]. Kocademir and Oter (2022) determined that 54.6% of pregnant women reported trusting the information they obtained from the Internet, and 38.2% compared such information with other sources to confirm its reliability [20]. In addition, our study determined that 64.5% of the pregnant women did not verify the information they received from the Internet by health professionals, and 94.8% were not directed to reliable internet resources by health professionals. In line with our results and those in the literature, it is worrying that pregnant women believe in the accuracy of the information they obtain from the Internet and do not confirm this information by health professionals.

5. Conclusions and Recommendations

- In our study, the pregnant women had moderate levels of fear of childbirth; therefore, it is recommended that health professionals train pregnant women on how to cope with their fear of childbirth.
- There was a weak positive relationship between pregnant women's daily internet usage time and fear of childbirth; therefore, it is recommended that health professionals be careful about the fact that the Internet can increase the fear of childbirth in women.
- The pregnant women reported spending more than one hour on the Internet daily and searching for common problems related to pregnancy/childbirth and methods of coping with labor pain; therefore, it is recommended that health professionals determine the lack of knowledge of pregnant women in this regard and take appropriate initiatives for them.
- The majority of pregnant women believed in the accuracy of the information they obtained from the Internet; therefore, it is recommended that healthcare professionals support pregnant women to improve the health of both them and their babies.

Limitations of the study:

The major limitation of our study is that it is a single center. The results obtained may not be generalized to other parts of the country.

Acknowledgment:

We thank the pregnant women who participated in our study.

Conflict of interest:

No potential conflict of interest was reported by the author(s).

Authors' Contributions:

Conceptualization: SBK, İT; İdea concept: SBK; Literature review: İT; Data collection: İT, SBK; Data analysis, findings: SBK; Writing up the original draft: İT; Critical review: SBK

Note: This study has been presented in 9. International GAP Summit Scientific Research Projects Congress, held in Gaziantep, 1-3 July 2022.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp
IJHSRP
e-ISSN: 2602-3482

Research Article

THE IMPACT OF EMOTIONAL CONTAGION IN NURSES ON MISSED NURSING CARE: A CROSS-SECTIONAL STUDY

Gamze KUTLU TÜREDİ*[*1] ***Serap ALTUNTAŞ[2]***

[1]Bandırma Onyedi Eylül University, Institute of Health Sciences, Balıkesir, Turkiye
[2]Bandırma Onyedi Eylül University Faculty of Health Sciences Nursing Department, Balıkesir, Turkiye
*Corresponding author; gamzekutlu17@gmail.com

Abstract: *Nurses encounter various situations in their work that can affect their emotional status, and they can contagion these emotions to others. These emotions experienced by nurses can influence nursing care. The study used a cross-sectional, descriptive, and correlational design to explore the impact of emotional contagion among nurses on unmissed nursing care. The research was conducted with 304 volunteer nurses through an online survey. Data were collected using a survey form consisting of a Demographic Information Form, Emotional Contagion Scale, and Missed Nursing Care Needs Scale. The data were analyzed by the researchers. The study revealed that nurses had a moderate level of emotional contagion. Differences in emotional contagion levels were found based on gender, age, educational level, type of institution, marital status, working hours, institutional experience, unit of work, and voluntary choice of job ($p < 0.05$). Additionally, the study showed that the level of missed nursing care among nurses was low. "Communication" was identified as the most significant factor causing missed nursing care. The level of missed nursing care varied according to gender, age, educational status, type of institution, professional and institutional experience, marital status, working hours, unit of work, and duration of employment ($p < 0.05$). Emotional contagion had a negative impact on the need for missed nursing care ($\beta = -0.150$, $t = -2.636$, $R^2 = 0.022$, $p < 0.05$), its causes ($\beta = -0.193$, $t = -3.411$, $R^2 = 0.037$, $p < 0.05$), especially workforce resources ($\beta = -0.249$, $t = -4.470$, $R^2 = 0.062$, $p < 0.05$), and material resources ($\beta = -0.271$, $t = -4.898$, $R^2 = 0.074$, $p < 0.05$). To reduce the level of missed nursing care, fostering positive emotions among nurses and promoting their transmission can be utilized as a strategy.*

Keywords: *Emotional contagion, missed nursing care, nursing.*

Received: January 17, 2024 *Accepted: February 28, 2024*

1. Introduction

1.1. Background of the Study

In individual and professional lives, human beings, as social beings, interact and communicate with others, experiencing emotions that also influence their behaviors [1]. Although emotions were long overlooked in the workplace, they have gained increasing importance with the behavioral management approach. Emotions cannot be separated from the work environment because individuals carry their emotions into the workplace, influencing other employees and shaping their behaviors accordingly [1-2]. In fact, the same emotions can lead to different behaviors in different individuals. Within an organization, emotions are generally associated with concepts such as emotional labor, emotional intelligence, emotional identity, emotional climate, and emotion management. However, in recent years,

the emotional dynamics among individuals have given rise to the concept of "emotional contagion," emphasizing the need for its examination within organizations [3]. This concept was first defined by Hatfield et al. in 1994 as "the transfer of emotions or mood from one person to another" and has been noted to have positive and negative consequences within organizations. It has been emphasized that positive emotions perceived and displayed by employees and managers create a positive emotional state in others and lead to positive work outcomes, while negative emotions can cause stress and burnout in others [4-5].

In healthcare organizations, nurses, who are at the core of the healthcare team, encounter numerous situations that can affect their emotional state, both in their interactions with patients, team members, colleagues, and managers, and in their personal lives [6]. This situation increases the likelihood of nurses transmitting emotions such as happiness, joy, disappointment, anxiety, fear, anger, stress, trust, etc. [7]. Since the emotions that nurses possess can impact nursing care and, particularly, negative emotions can jeopardize patient safety, it is emphasized that the susceptibility of nurses to emotional contagion and its consequences should be examined and managed effectively to prevent adverse outcomes [7-8].

The transmission of negative emotions has been found to lead to burnout, emotional exhaustion, reduced communication sensitivity, and decreased professional commitment [6-9]. On the other hand, it is stated that positive emotions act as a factor that enhances job satisfaction and commitment [10]. In addition to these findings, it is expressed that nurses, as a result of experiencing negative emotional states, may neglect patient care, particularly psychosocial care, leading to unmet care needs [11].

Missed nursing care is defined as "the total or partial omission or delay of required care" [12]. In the literature, it is also referred to as unfinished, omitted, deferred, incomplete, missed, or postponed care [13-14]. This can lead to serious patient outcomes, such as pressure ulcers, phlebitis, urinary tract infections, patient falls, patient dissatisfaction, and increased length of stay, resulting in a decline in the quality of nursing care, increased healthcare costs, and compromised patient safety [15-16-17-18-19-20-21]. It is also noted that it can lead to negative consequences for nurses, including job dissatisfaction, decreased job satisfaction, intention to leave the profession, and burnout [16-22]. Considering these negative outcomes, it is emphasized that factors affecting missed nursing care need to be examined, and effective strategies need to be developed and implemented to prevent it [23]. In this context, although it is suggested that emotional contagion among nurses may be effective in missed nursing care, this issue has not been sufficiently investigated and clarified. Based on this need, this study aims to determine whether emotional contagion among nurses has an impact on missed nursing care.

1.2. Research Questions

The research sought answers to the following questions.

1-What is the level of emotional contagion in nurses?

2-What is the amount of nursing care that is not met by nurses and what are the reasons?

3-Does emotional contagion in nurses affect unmet nursing care?

2. Materials and Methods

2.1. Study Design

The research was carried out in a cross-sectional, descriptive, and correlational design.

2.2. The Study Area

The research population consisted of nurses (N= 227.292) working all over Türkiye.

2.3. Sample Size Estimation

The confidence interval for the size of the population considered within the scope of the research was determined as 95%, the corresponding Z value was selected as 1.96 from the standard normal distribution table, and the acceptable margin of error was determined as 5%. Using the formula, the sample size was found to be 249.

2.4. Study Population

The population of the research consists of nurses working in the country where the research was conducted. The sample consists of 304 nurses who can be accessed online by a simple random sampling method and accepted to participate in the research and fill out the online questionnaire.

2.5. Data Collection Tools

The research data were collected with an online questionnaire including the "Descriptive Information Form", the "Emotional Contagion Scale" and the " The Missed Nursing Care Scale".

Descriptive Information Form: It consists of 11 questions to determine the gender, age, education level, marital status, institution they work for, professional and institutional experience, position, working style, weekly working time, and willingness to choose the profession of nurses.

The Emotional Contagion Scale (ECS): It was developed by Doherty (1997) to assess individuals' sensitivity and susceptibility to emotional contagion by capturing their emotions such as joy, happiness, love, fear, anxiety, anger, sadness, and depression. The Turkish validity and reliability of the scale were tested by Akın et al. (2015). The scale consists of a total of 15 items and is unidimensional. It is rated on a five-point Likert scale (1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always) and assesses the tendency to mimic five basic emotions (love, happiness, fear, anxiety, and sadness). There are no reverse-scored items in the scale. The lowest possible score is 15, and the highest score is 75, indicating higher susceptibility and sensitivity to emotional contagion as the scores increase. The Cronbach's alpha coefficient of internal consistency for the scale was found to be 0.90 in the original study [24] and 0.75 in the Turkish adaptation study [25]. In this study, Cronbach's alpha coefficient was found of 0,88.

The Missed Care Nursing Needs Scale (MISSCARE Survey-Turkish): It was developed by Kalisch and Williams (2009) and adapted into Turkish by Kalisch et al. (2012), and consists of two parts. The first part aims to determine the amount of missed care needs perceived by nurses and consists of 21 items, rated on a five-point Likert scale (1: Rarely missed, 2: Occasionally missed, 3: Frequently missed, 4: Never missed, 5: Not applicable). The second part focuses on identifying the reasons for missed nursing care and consists of 16 items, rated on a four-point Likert scale (1: Major reason, 2: Moderate reason, 3: Minor reason, 4: Not a reason for not providing care). This section comprises three dimensions: labor resources (4 items), material resources (3 items), and communication (9 items). There are no reverse-scored items in the scale. An increase in scores in the first part indicates a higher perceived amount of missed nursing care, while an increase in scores in the second part indicates a higher perceived importance of reasons for missed care. The Cronbach's alpha coefficient for the first part of the scale is 0.93, and for the second part, it is 0.80 [26]. In this study, the Cronbach's alpha coefficient for both the first and second parts of the scale was found to be 0.90.

2.6. Data Collection

The research data was collected between July and September 2022 using an online survey method. The access link to the survey form was sent to groups of nurses through social media applications that facilitate group communication. The nurses were informed about the research and invited to participate

through a voluntary informed consent form and written explanations. A total of 304 nurses voluntarily participated in the study and completed the survey form.

2.7. Data Entry, Analysis and Presentation

The research data was analyzed by the researchers using statistical software packages. In the evaluation of the data, Cronbach's alpha coefficient, descriptive statistics, percentage, and frequency distributions, as well as t-test, ANOVA, Kruskal-Wallis, Mann-Whitney U, Pearson correlation analysis, and Simple Linear Regression Analysis tests were employed.

2.8. Ethical Considerations

Before starting the research, ethical approval was obtained from the ethics committee of the Bandırma Onyedi Eylül University where the study was conducted (Date: 20.06.2022; Number: 2022-80), and necessary permissions for the use of scales were obtained from the relevant authors. Participants were provided with written explanations and informed consent forms, allowing voluntary completion of the survey.

3. Results

When examining the characteristics of the participating nurses in the study, it was determined that the majority were female (94.7%), aged between 20-30 years (59.5%), married (69.7%), had a bachelor's degree (47.0%), had professional experience between 6-10 years (41.1%), and institutional experience between 0-5 years (68.4%). It was also found that they worked in public hospitals (59.9%) as staff nurses (32.6%), and they worked on both day and night shifts (62.5%) for 40 hours per week (52.6%). Furthermore, it was revealed that they intentionally chose the nursing profession (60.9%).

Table 1. Mean Scores of Nurses on ECS and MISSCARE Survey-Turkish Scales (N=304)

Scales	M	SD	Min.	Max.
Emotional Contagion Scale (ECS)	49.42	9.56	21.00	75.00
MISSCARE Survey-Turkish (Total)	1.64	0.50	1.00	3.47
Amount of Missed Nursing Care	1.75	0.64	1.00	3.57
Reasons for Missed Nursing Care (Total)	1.48	0.54	1.00	3.47
Labor resources (LR)	1.36	0.55	1.00	3.25
Material resources (MR)	1.34	0.58	1.00	3.33
Communication (C)	1.60	0.67	1.00	4.00

When examining the levels of emotional contagion and findings related to missed nursing care among nurses, it was observed that the average score on the Emotional Contagion Scale was M=49.42±9.56 points. On the Missed Nursing Care Need Scale, the average score was M=1.64±0.50 points. In terms of the amount of missed nursing care, the average score was M=1.75±0.64 points. Regarding the reasons for missed nursing care, the average score was M=1.48±0.54 points. In terms of labor resources, the average score was M=1.36±0.55 points. For material resources, the average score was M=1.34±0.58 points, and for communication, the average score was M=1.60±0.67 points (Table 1).

Table 2. Mean Scores of Nurses on ECS and MISSCARE Survey-Turkish Scales by Demographic Characteristics (N=304)

Demographic Characteristic	ECS	Misscare (Total)	Amount of Missed	Reasons for Missed Nursing Care			
				Reasons (Total)	LR	MR	C
	X̄ ±SD	X̄ ±SD	X̄ ±SD	X̄ ±SD	X̄ ±SD	X̄ ±SD	X̄ ±SD
Gender							
Female (n=287, %94.7)	49.95±9.4	1.60±0.46	1.71±0.61	1.39±0.49	1.34±0.63	1.29±0.53	1.55±0.64
Male (n=17, %5.3)	39.31±6.91	2.39±0.51	2.45±0.71	2.23±0.46	2.19±0.57	2.13±0.68	2.38±0.48
Test	*Z*=-4.355	*Z*=-5.252	*Z*=-4.048	*Z*=-5.415	*Z*=-5.545	*Z*=-5.588	*Z*=-4.983
p value	**.000***	**.000***	**.000***	**.000***	**.000***	**.000***	**.000***
Age							
20-30 (n=181, %59.5)[a]	51.07±9.76	1.59±0.45	1.70±0.63	1.37±0.49	1.36±0.65	1.24±0.5	1.57±0.66
31-45 (n=104, %34.2)[b]	47.36±8.91	1.70±0.54	1.81±0.66	1.53±0.54	1.52±0.63	1.44±0.61	1.62±0.62
46+ (n=19, %6.3)[c]	43.44±6.76	1.83±0.64	1.89±0.70	1.66±0.73	1.50±0.72	1.69±0.8	1.80±0.88
Test	X^2=15.459	X^2=4.005	X^2=3.565	X^2=6.650	X^2=13.857	X^2=13.762	X^2=1.710
p value	**.000* a > b, c**	**.135**	**.168**	**.036** b>a**	**001* b>a**	**.001* b>a**	.425
Education Level							
Health Voc. Schools' Grad. (n=32, %10.5)[a]	47.53±10.35	1.53±0.44	1.77±0.72	1.38±0.47	1.33±0.64	1.20±0.47	1.61±0.7
Associate's Degree holders (n=62, %19.8)[b]	45.26±11.64	1.75±0.59	1.72±0.72	1.71±0.66	1.73±0.95	1.63±0.77	1.78±0.71
Bachelor's Degree holders (n=141, %47.0)[c]	51.05±8.79	1.61±0.48	1.85±0.61	1.38±0.49	1.30±0.53	1.28±0.51	1.55±0.69
Master's Degree holders (n=69, %22.7)[d]	50.57±7.42	1.66±0.46	1.75±0.66	1.34±0.38	1.28±0.46	1.22±0.41	1.52±0.51
Test	F=6.319	F=1.655	F=1.103	F=7.572	F=7.399	F=8.165	F=2.074
p value	**.000* c > b, d**	**.001* b > a, c, d**	**.348**	**.000* b > a, c, d**	**.000* b> a, c, d**	**.000* b >a, c, d**	**104**
Type of Workplace							
Public Hospital (n=181, %59.9)[a]	49.78±8.66	1.55±0.52	1.83±0.71	1.46±0.57	1.39±0.63	1.37±0.61	1.61±0.68
Private Hospital (n=60, %20.1)[b]	51.85±9.76	1.35±0.3	1.51±0.53	1.30±0.32	1.23±0.38	1.14±0.38	1.52±0.6
University Hos. (n=46, %14.5)[c]	42.98±11.03	1.62±0.45	1.74±0.49	1.58±0.56	1.59±0.98	1.51±0.62	1.63±0.62
Other (n=17, %5.5)[d]	53.82±6.13	1.43±0.35	1.6±0.42	1.37±0.42	1.4±0.48	1.1±0.26	1.63±0.76
Test	X^2=22.857	X^2=11.278	X^2=12.287	X^2==5.453	X^2=11.052	X^2==16.433	X^2==1.118
p value	**.000* d > a, b, c**	**.010** c >b, a**	**.006** a>b**	**.141**	**.011** a>b**	**.001* c >b, d**	.773

Table 2 Continued.

Demographic Characteristic	ECS	Misscare (Total)	Amount of Missed	Reasons for Missed Nursing Care			
				Reasons (Total)	LR	MR	C
	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD
Professional Experience							
0-5 years (n=95, %31.3)[a]	49.12±10.4	1.59±0.47	1.74±0.63	1.37±0.52	1.32±0.77	1.25±0.53	1.54±0.63
6-10 years (n=125, %41.1)[b]	50.59±9.73	1.61±0.51	1.71±0.66	1.42±0.51	1.35±0.56	1.33±0.56	1.57±0.67
11-15 years (n=48, %15.8)[c]	49.33±9.11	1.74±0.51	1.81±0.62	1.60±0.54	1.59±0.64	1.44±0.59	1.77±0.64
16-20 years (n=18, %5.9)[d]	45.59±7.06	1.94±0.64	2.15±0.75	1.54±0.58	1.53±0.59	1.45±0.71	1.65±0.67
21 years + (n=18, %5.9)[e]	45.75±.80	1.54±0.25	1.57±0.25	1.42±0.58	1.30±0.68	1.40±0.6	1.57±0.77
Test	X^2=7.897	X^2=8.657	X^2=7.656	X^2=9.776	X^2=16.883	X^2=6.951	X^2=6.596
p value	.095	.070	.105	.054	**.002** c>a**	.139	.159
Marital Status							
Married (n=212, %69.7)	49.89±9.67	1.66±0.50	1.78±0.64	1.46±0.53	1.41±0.7	1.36±0.57	1.61±0.68
Single (n=92, %30.3)	48.23±9.32	1.59±0.50	1.70±0.63	1.40±0.5	1.34±0.55	1.28±0.57	1.58±0.62
Test	t=1.393	t=1.055	t=1.012	t=.914	t=.835	t=1.149	t=.364
p value	.165	.292	.312	.361	.405	.252	.716
Employment Type							
Night Shift (n=14.%4.6)[a]	43.36±11.3	1.53±0.6	1.59±0.72	1.44±0.64	1.27±0.47	1.52±0.84	1.53±0.8
Day Shift (n=100.%32.9)[b]	48.79±9.41	1.73±0.49	1.89±0.65	1.49±0.56	1.48±0.81	1.40±0.59	1.59±0.7
Rotating Shift (n=190.%62.5)[c]	50.15±9.41	1.60±0.45	1.69±0.63	1.41±0.5	1.35±0.57	1.28±0.53	1.60±0.63
Test	X^2=6.319	X^2=9.170	X^2=13.105	X^2=.889	X^2=3.723	X^2=2.880	X^2=.792
p value	**.042** c>b**	**.010** b>a, c**	**.005** b >a, c**	.641	.155	.237	.673
Institutional Experience							
0-5 years (n=208,%68.4)[a]	50.28±9.87	1.59±0.49	1.74±0.65	1.35±0.47	1.3±0.61	1.24±0.49	1.50±0.6
6-10 years (n=62, %20.4)[b]	47.75±9.46	1.67±0.46	1.67±0.57	1.63±0.58	1.60±0.75	1.49±0.67	1.79±0.72
11-15 years (n=24, %7.9)[c]	47.14±6.07	2.05±0.60	2.11±0.73	1.83±0.57	1.68±0.62	1.73±0.73	2.09±0.7
16-20 years (n=3, %1.0)[d]	54.00±7.94	1.59±0.19	1.48±0.25	1.72±0.75	1.67±1.15	1.67±0.58	1.83±0.76
21 years + (n=7, %2.3)[e]	41.67±5.24	1.41±0.15	1.68±0.22	1.05±0.08	1.04±0.1	1.06±0.14	1.04±0.1
Test	X^2=11.844	X^2=16.889	X^2=8.115	X^2=29.775	X^2=16.777	X^2=19.18	X^2=27.255
p value	**.019** a>e**	**.000* c> a, b, e**	**.087**	**.000* c> a, b, e**	**.002** c> a, b, e**	**.001* c >a, b, e**	**.000* c> a, b, e**

Table 2 Continued.

Demographic Characteristic	ECS	Misscare (Total)	Amount of Missed	Reasons for Missed Nursing Care			
				Reasons (Total)	LR	MR	C
	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD	$\bar{X}$ ±SD
Position							
Service Nurse (n=99, %32.6)[a]	50.04±9.09	1.64±0.54	1.78±0.71	1.42±0.55	1.40±0.83	1.33±0.6	1.53±0.6
Intensive Care Nurse (n=63,%20.7)[b]	52.19±8.37	1.52±0.41	1.57±0.54	1.36±0.47	1.25±0.54	1.17±0.41	1.65±0.69
Emergency Nurse (n=27, %8.9)[c]	43.11±7.74	1.93±0.59	2.04±0.68	1.67±0.67	1.57±0.65	1.58±0.78	1.87±0.74
Policlinic Nurse (n=13, %4.3)[d]	51.69±11.88	1.57±0.46	1.71±0.59	1.34±0.51	1.37±0.62	1.23±0.44	1.41±0.86
Unit manager nurse (n=48, %15.8)[e]	48.13±9.06	1.69±0.48	1.77±0.61	1.55±0.54	1.41±0.58	1.53±0.63	1.70±0.73
Other (n=54, %17.7)[f]	48.63±11.05	1.61±0.45	1.75±0.60	1.38±0.41	1.42±0.46	1.25±0.45	1.47± 0.53
Test	X^2=21.796	X^2=13.052	X^2=12.007	X^2=8.798	X^2=18.378	X^2=15.696	X^2=10.735
p value	**.001* b>a, c**	**.023** c>b**	**.035** c>b**	**.117**	**.003** c>b**	**.008** c>b**	**.05** e>b**
Weekly Working Hours							
Less than 40 hours (n=10, %3.4)[a]	43.2±7.9	1.44±0.35	1.44±0.33	1.41±0.53	1.40±0.65	1.33±0.59	1.49±0.53
40 hours (n=160,%52.6)[b]	50.27±8.8	1.63±0.44	1.76±0.56	1.40±0.49	1.32±0.51	1.32±0.58	1.55±0.7
41-50 hours (n=140,%46.2)[c]	51.21±8.9	1.59±0.50	1.70±0.65	1.40±0.52	1.36±0.73	1.25±0.51	1.59±0.63
51 hours + (n=48, %15.8)[d]	43.4±10.6	1.83±0.60	1.94±0.78	1.65±0.58	1.61±0.69	1.58±0.66	1.74±0.68
Test	X^2=24.601	X^2=8.257	X^2=7.573	X^2=7.090	X^2=9.550	X^2=14.423	X^2=4.036
p value	**.000* c> b, d**	**.041** d>c**	.056	**.**069**	**.023** d>c**	**.002** d>c**	.258
Choosing Profession Willingly							
Yes (n=185, %60.9)	49.48±10.09	1.64±0.54	1.75±0.71	1.43±0.51	1.38±0.55	1.34±0.58	1.59±0.68
No (n=119, %39.1)	49.25±8.77	1.64±0.42	1.76±0.52	1.45±0.56	1.40±0.8	1.33±0.55	1.61±0.64
Test	t=.198	t=-.087	t=-.195	t=-.173	t=-.341	t=0.111	t=-0.169
p value	.843	.931	.846	.863	.733	.912	.866

Z= Mann Whitney U. t= Student t Testi. F= One Way Anova. X^2= Kruskal Wallis. M= Mean. SD:Standart Deviation. ECS= Emotional Contagion Scale. LR=Labor resources. MR=Material resources. C= Communication. *p ≤0.001. ** p< 0.05

When examining the levels of emotional contagion among nurses, it was determined that female nurses, aged between 20-30, with a bachelor's degree, working in private hospitals, having 15 years or less of professional experience, married, working in day and night shifts, having 16-20 years of institutional experience, serving as intensive care nurses, working for 40-50 hours per week, and choosing the nursing profession willingly, had higher levels of emotional contagion scores. Furthermore, significant differences were observed among groups in terms of gender, age, education level, type of institution worked, work schedule, institutional experience, position, and weekly working hours ($p<0.05$) (Table 2).

When examining the average scores of missed nursing care needs among nurses, it was found that male nurses, aged 46 and above, with an associate degree, working in university hospitals, having 16-20 years of professional experience and 11-15 years of institutional experience, married, working consistently in day shifts, serving as emergency department nurses, and working more than 51 hours per week, had higher average scores. Additionally, significant differences were observed among groups in terms of gender, education level, type of institution worked, work schedule, institutional experience, position, and weekly working hours ($p<0.05$) (Table 2).

When evaluating the amount of unmet nursing care needs among nurses, it was determined that male nurses, aged 46 and above, with a bachelor's degree, working in public hospitals, having 16-20 years of professional experience and 11-15 years of institutional experience, married, working consistently in day shifts, serving as emergency department nurses, working more than 51 hours per week, and not choosing the nursing profession willingly, had higher average scores. Additionally, significant differences were observed among groups in terms of gender, type of institution worked, work schedule, and position ($p<0.05$) (Table 2).

When the missed nursing care needs reasons of the participants were evaluated both in total and in sub-dimensions, it was observed that male nurses, aged 46 and above, with an associate degree, working in university hospitals, having 11-15 years of both professional and institutional experience, married, working in day shifts, serving as emergency department nurses, working more than 51 hours per week, and not choosing the nursing profession willingly, had higher average scores. Furthermore, significant differences were observed among groups in terms of gender, age, education level, type of institution worked, professional and institutional experience, position, and weekly working hours in some dimensions ($p<0.05$) (Table 2).

Table 3. The results of the correlation analysis regarding the relationship between emotional contagion level and missed nursing care.

		1.	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**
1.Emotional contagion	r	1	-.150*	-.084	-.193*	-.249*	-.271*	-.103
2. Missed nursing care need (total)	r		1	.905*	.711*	.573*	.584*	.657*
3. Missed amount of nursing care	r			1	.344*	.282*	.317*	.305*
4. Reasons for missed nursing care needs	r				1	.800*	.765*	.945*
5. Labor resources	r					1	.624*	.603*
6. Material resources	r						1	.583*
7. Communication	r							1

*p<.001

When examining the relationship between emotional contagion levels and missed nursing care among nurses, it was observed that there were negative and significant correlations at a low level between emotional contagion and the level, amount and reasons of missed nursing care. Additionally, a positive and moderate level of significant correlation was found between the amount and reasons of missed nursing care (Table 3).

Table 4. Results of the regression analysis on the effect of emotional contagion level on missed nursing care.

Variables	**B**	**SD**	**β**	**t**	**p**	**F**	**R^2**
Constant	2.026	.149		13.584	.000	6.946*	.022
Emotional Contagion	-.008	.003	-.150	-2.636	.009		
Dependent Variable: Missed Nursing Care Needs (Total)							
	B	**SD**	**β**	**t**	**p**	**F**	**R^2**
Constant	2.023	.161		12.567	.000	11.636*	.037
Emotional Contagion	-.011	.003	-.193	-3.411	.001		
Dependent Variable: Reasons for Missed Nursing Care Needs							

Table 4. Continued.

	B	SD	β	t	p	F	R^2
Constant	2.062	.161		12.825	.000	19.982*	.062
Emotional Contagion	-.014	.003	-.249	-4.470	.000		
Dependent Variable: Labor resources							
	B	**SD**	**β**	**t**	**p**	**F**	**R^2**
Constant	2.145	.168		12.760	.000	23.994*	.074
Emotional Contagion	-.016	.003	-.271	-4.898	.000		
Dependent Variable: Material resources							

*p<.001

According to the results of the regression analysis in Table 4, it has been determined that emotional contagion has a negative effect on missed nursing care needs (β= - .150, t=-2.636, R^2=.022, p<.05), particularly on the reasons for missed nursing care (β=- .193, t=-3.411, R^2=.037, p<.05), specifically the dimensions of workforce resources (β=- .249, t=-4.470, R^2= .062, p<.05) and material resources (β= - .271, t=-4.898, R^2= .074, p<.05). In other words, as the level of emotional contagion increases among nurses, the importance of missed nursing care needs and reasons decreases. According to the results, emotional contagion explains 2% of the total variance in missed nursing care needs, 3% of the total variance in the reasons for missed nursing care needs, 6% of the total variance in workforce resources, and 7% of the total variance in material resources.

4. Discussion

In the field of healthcare, just like in any other work environment, the emotions experienced by employees can have an impact on their individual productivity and performance. Furthermore, these emotions can also affect the performance of other individuals involved in the healthcare service, ultimately influencing the quality of healthcare provided. In the study, it was found that the level of emotional contagion, which refers to the susceptibility and sensitivity to emotional contagion, was moderate among nurses. It was observed that female nurses, those under the age of 30, graduates of bachelor's degree programs, working in private hospitals, married, working in both night and day shifts, having significant institutional experience, serving as intensive care nurses, working between 40-50 hours per week, and choosing their profession willingly, were more susceptible to emotional contagion.

It is believed that the moderate level of emotional contagion among nurses is related to their empathy and emotional intelligence. Nurses' ability to understand or feel others' emotions through empathy, as well as their emotional intelligence and emotion management, may contribute to this phenomenon [27]. Additionally, the variation in emotional contagion levels among nurses is thought to stem from women being more emotional individuals compared to men, younger nurses having less professional experience and different emotion management skills [27]. Moreover, the higher expectations related to emotional behaviors concerning patient satisfaction and effective communication in private hospitals can be associated with the differing levels of emotional contagion among nurses. Intensive care nurses, on the other hand, are believed to face more negative emotions, bear a higher emotional burden, and increase emotional contagion by sharing these emotions to alleviate the burden. Nurses who choose the profession willingly are thought to be prone to emotional contagion due to their more positive attitudes towards the profession and their inclination to provide deeper and more genuine emotional labor as they develop a love for the profession [36].

According to the literature, there are variations in nurses' emotion management skills based on age, marital status, workplace, institutional and professional experience, which support the findings of the study [27]. While married and more experienced nurses were found to have higher levels of emotional contagion [2], contrary to this study, it was found that male nurses, those over 35 years old,

postgraduate graduates, working as managers, and with less institutional experience had higher levels of emotional contagion. In this regard, nurses over the age of 35, nurses with a high level of education, male nurses, and nurses working as managers should be closely monitored in terms of emotional contagion.

According to the research findings, the level of unmet nursing care and the importance of communication, workforce, and material resources as reasons for unmet nursing care are low. Communication is identified as the most significant factor causing unmet nursing care. The low level of unmet nursing care and the importance of its causes among nurses are encouraging findings and align with the literature [28]. In this regard, it is thought that it is important for nurse managers to follow methods that strengthen communication within the team, especially to create and support positive communication channels between nurses.

According to the results, it is evident that the most significant reason for unmet nursing care is communication. This finding suggests that effective communication is not being maintained within the healthcare team. Similar to these findings, in the literature, nurses have indicated "poor communication" as the reason for missed care [29]. However, contrary to this study, it is also mentioned that nurses experiencing staff shortages and high workloads tend to miss more nursing care [28-30-31-32-33-34].

According to the study, it has been determined that male nurses aged 46 and above, with associate's degrees, working in university hospitals, having extensive professional and institutional experience, married, working on a permanent day shift, serving as emergency department nurses, and working longer weekly hours, experience a higher amount of unmet nursing care, and the factors contributing to this are perceived as more significant. It is believed that older nurses with extensive institutional and professional experience may start to decrease their professional idealism or have developed advanced emotion management skills, resulting in them being less influenced by the emotions of others.

The finding of a higher amount of unmet nursing care among male nurses in the study is considered an interesting result that needs to be further examined in future research. The higher level of unmet nursing care in university hospitals, emergency departments, and among nurses working on a permanent day shift is believed to be attributed to high job demands.

University hospitals are known for providing intensive treatment and care for advanced-level patients, requiring coordination among a larger healthcare team, and thus placing a heavier workload on nurses. In emergency departments, the simultaneous arrival of patients requiring urgent interventions leads to nurses being unable to allocate sufficient time for each patient due to the need for quick additional interventions. Daytime hours are also the periods when nurses experience the highest workload, making it challenging for them to allocate enough time for nursing care while attending to all their responsibilities. These findings are supported by other studies in the literature, which indicate higher levels of missed care among male nurses with longer working hours in teaching hospitals [19-29]. Married nurses, on the other hand, may struggle to fulfill nursing care due to their societal roles such as motherhood and being a spouse, which can lead to their inability to fully focus at work, resulting in factors such as attention deficits, stress, and performance decline that can contribute to unmet nursing care [35].

The emotional contagion among nurses appears to have a negative and low-level impact on the amount and reasons for unmet nursing care. In other words, as the level of emotional contagion increases among nurses, the amount and significance of unmet nursing care needs decrease.

These findings suggest that most nurses, being young, having less professional experience, and choosing the nursing profession willingly, experience and transmit more positive emotions. This situation positively influences their motivation and leads them to provide nursing care in the best possible way. Additionally, nurses who are influenced by positive emotions may not consider

communication, workforce, and material deficiencies as significant reasons for unmet nursing care. These results indicate that positive emotional contagion among nurses can be utilized as a way to reduce unmet nursing care.

Limitations

Conducting the research online instead of face-to-face may have led to a decrease in the number of participating nurses. Furthermore, relying on participants' self-assessments for the research results is another limitation. Additionally, the limited availability of studies on the subject has also posed a limitation in discussing the findings. Having a limited body of research on the topic may restrict the depth of analysis and interpretation of the results.

5. Conclusion and Recommendations

The study results indicate that nurses have a moderate level of emotional contagion, and there are differences in emotional contagion levels based on gender, age, education level, type of healthcare institution, marital status, working hours, institutional experience, work unit, and voluntary career choice. Additionally, it has been observed that the level of unmet nursing care among nurses is low, and the most significant factor contributing to unmet nursing care is "communication". The level of unmet nursing care also varies according to gender, age, education status, type of healthcare institution, professional and institutional experience, marital status, working hours, work unit, and duration of employment.

Furthermore, the study reveals that as the level of emotional contagion among nurses increases, the level of unmet nursing care decreases. Based on these results, it is suggested that utilizing positive emotional contagion among nurses can be a way to reduce unmet nursing care. It is also recommended to conduct further research on this topic in different samples for a more comprehensive investigation.

Ensuring that nurses are aware of their emotions, try to understand their emotions, and are supported to cope with their emotions,

Determining individual differences of nurses regarding their perceptions of the emotions of the patient and the team and their susceptibility to emotional contagion,

Determining a professional role model-leader and ensuring that the leader has a positive feeling,

Creating different, diverse, and rich perspectives within the team,

Ensuring the coordination of ideas and behaviors within the team and creating positive and morale-increasing communication behaviors,

Creating a common goal within the team,

Creating commitment in team relationships, providing an environment of empathy and self-confidence,

Increasing success and satisfaction within the team,

To gain the behavior of being sensitive to others;

Ensuring creativity, helpfulness, individual happiness, and organizational citizenship,

Providing a fair working environment,

Supporting professional empathic communication is recommended to ensure positive emotional transfer among nurses [38].

Ethical Statement

Before the research, ethical approval (Date: 20.06.2022; Number: 2022-80) was taken from the ethics committee of the Bandırma Onyedi Eylül University where the research was conducted. The participants were informed in line with the informed consent form and the voluntary participants were allowed to fill in the survey. For the use of PRePS in data collection, permission was taken from the author, who adapted the scale into Turkish, via e-mail.

Acknowledgments

The authors would like to thank the nurses who participated in the data collection.

Conflicts 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.

Funding

The authors declared that this study had received no financial support.

Data availability statement

The datasets generated during and/or analyzed during the current study are not publicly available as respondents were assured raw data would remain confidential and would not be shared.

Author's contributions

G.K.T.: Conceptualization, Methodology, Acquisition of data for the study, Formal analysis, Writing - Original draft preparation

S.A.: Conceptualization, Methodology, Formal analysis, Writing - Original draft preparation

All authors read and approved the final manuscript.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp
IJHSRP
e-ISSN: 2602-3482

Research Article

COMPARISON OF TIMELY INITIATION OF BREASTFEEDING AND DISCHARGE TIMES OF MOTHERS WITH ETHNIC DIFFERENCES: NORTH MACEDONIA STUDY

***Ebru HALİDİ*[1] *Hatice KAHYAOĞLU SÜT**[2]

[1]Department Nursing, Trakya University, Institute of Health Sciences, Edirne - Türkiye
[2]Department of Women Health and Diseases Nursing, Trakya University, Fac. of Health Sci., Edirne - Türkiye
*Corresponding author: haticesut@yahoo.com

Abstract: *The quality of maternity and newborn care and training in the hospitals in North Macedonia is still inadequate today. This study aimed to examine their readiness for discharge and the first breastfeeding time according to ethnic groups in mothers who were postnatal in Tetovo State Hospital North Macedonia. This cross-sectional study was conducted with 202 Macedonian, Albanian, Turkish, Bosnian, and Romanian mothers who were hospitalized in the maternity service of Tetovo State Hospital in North Macedonia. Data were collected before discharge with a survey form and face-to-face interviews. The mothers reported that the first postpartum breastfeeding started after an average of 22.0±20.6 hours. Macedonian mothers reported that they received more training on shower and hygiene ($p<0.05$), nutrition and fluid intake ($p<0.05$), sleep and rest ($p<0.01$), family planning ($p<0.01$), and sexual intercourse ($p<0.001$) than Albanian and other mothers. The Albanian mothers indicated that they received less training on navel care ($p<0.05$), shower and skin care (<0.01), cleaning and emptying diapers ($p<0.01$), dressing ($p<0.05$), gas problems ($p<0.01$), regular health checks ($p<0.05$), jaundice ($p<0.001$), and vaccinations ($p<0.05$) compared to Macedonian and other mothers ($p<0.05$). The first breastfeeding time after birth is quite late in North Macedonia. Readiness for discharge differs between ethnic groups. The conditions in the health system and the quality of health care regarding hospital discharge should be improved for all ethnic groups.*

Keywords*: Breastfeeding, Discharge, Ethnic group, North Macedonia, Postnatal*

Received: December 14, 2023 *Accepted: February 23, 2024*

1. Introduction

Postpartum discharge is the period starting from the moment the mother gives birth to the time she leaves the hospital. According to the American Academy of Pediatrics (AAP) and the American College of Obstetricians and Gynecologists (ACOG), early discharge refers to 48 hours after vaginal delivery and 96 hours after cesarean delivery, and very early discharge is used for the discharge within 24 hours after vaginal delivery, provided that the mother and baby are healthy, free of complications and do not carry any risk [1]. The length of stay may range from 48 hours for vaginal delivery to 72 hours for cesarean delivery, excluding the day of delivery, although some women may choose earlier discharge at present [2]. Besides, readiness for discharge means that the mother feels ready to go home [3]. The World Health Organization (WHO) advises that mothers be informed about maternal and newborn care, nutrition, and emergency health conditions that require referral to a health institution [4].

In North Macedonia, 99.5% of all births take place in hospitals [5]. Postpartum care starts in the maternity ward. Breastfeeding and the mother-newborn relationship begin after at least 3 hours of birth

[6]. Ministry of Health of the Republic of Macedonia (MHRM), in the Macedonian Safe Motherhood Strategy, postpartum training underlines the need for education on newborn feeding and breastfeeding [7]. Trainers have limited knowledge about breastfeeding [6]. The mother and baby are discharged after completing routine controls, educational issues, infection control, and treatment needed for therapeutic purposes [8].

Considering newborn deaths in Europe, the newborn mortality rate is higher in Balkan countries [9]. North Macedonia is one of the European countries that has the highest perinatal mortality rate [5]. Perinatal causes (73%) and congenital anomalies (10.5%) are the most common reasons for newborn mortality rates [10,11]. According to WHO, perinatal deaths in North Macedonia are due to poor intrapartum care and management [5]. When neonatal care training given before, during, and after birth and perinatal death analyses are compared, it is observed that the quality of care in North Macedonia is insufficient [6].

Timely initiation of breastfeeding (TIB); breastfeeding should be started within half an hour or at the latest within an hour after birth [12]. According to TIB, the first breastfeeding after birth still starts quite late in North Macedonian hospitals. Ethnic disparities exist in health system conditions regarding hospital discharge. WHO, advocates that special priority should be given to developing Central and Eastern European countries (e.g., North Macedonia) to promote the development of national and international nursing-midwifery services in line [13]. This study aims to examine their readiness for discharge and the first breastfeeding time according to ethnic groups in mothers who were postnatal in Tetovo State Hospital North Macedonia.

2. Material and Method

2.1. Research design, target population, and the sample

This cross-sectional study was conducted in the maternity ward of Tetovo State Hospital in North Macedonia, between October 30, 2019, and August 21, 2021. All participants were volunteer women who were over the age of 18, hospitalized in the maternity ward, had just given birth, and did not have a risky condition for early discharge. With the G-power analysis, we determined the number of patients to be included in the study as 202 [14].

2.2. Data collection process and tools

Data were collected via a questionnaire prepared by reviewing the literature [15-17]. The following steps were considered by the researcher during data collection:

- Data were collected through face-to-face interviews conducted in hospital rooms.
- Participants (n=202 volunteer mothers who had recently given birth) were informed about the study in their languages (Turkish, Albanian, Macedonian, Bosnian, and Romanian).
- Data were collected from volunteer mothers through a questionnaire. Each interview lasted an average of 15 minutes.

2.2.1 The personal information form

The questionnaire was used to identify the mother's age, first breastfeeding of the newborn, type of birth, personal characteristics (e.g., ethnic group, place of residence, education level, income status, employment status), training given during the postpartum period in the hospital for the care of the mother/newborn, and data of discharge according to groups of ethnicities. Ethnic groups had different education levels. We asked all participants whether they felt competent in both practical and theoretical care knowledge. Participants approved the Likert answers to the questions according to their own free will.

Experts in their field translated the questionnaire into "Turkish, Albanian, Macedonian, Bosnian, and Romanian" languages. After obtaining an expert opinion from the hospital doctor, notary approval was obtained for the translations.

*The researcher who collected the data is a Macedonian citizen of Turkish origin and works as a nurse in the hospital. She has sufficient command of Turkish, Albanian, Macedonian, Bosnian, and Romanian languages to be able to communicate with patients.

2.3. Statistical analyses

SPSS 20.0 statistical analysis package program was used for data analysis. Descriptive statistics were presented as Mean ± standard deviation and median (min–max), and categorical data were expressed as numbers and %. Pearson, Yates or Fisher Chi-square tests were used to compare 2x2 tables. Pearson Chi-square test was utilized for comparing multi-way tables. A value of $p<0.05$ was accepted as the cut-off value of statistical significance.

2.4. Ethical statement

Before the study was conducted, ethics approval was obtained from the Trakya University Ethics Committee (BAEK 2019-363), and a research permit was obtained from the Trakya University Rectorate. Participants were obtained to submit their consent to an informed consent form in accordance with the Declaration of Helsinki.

3. Results

Mothers (n=202) were aged between 19 and 43, with a mean of 28.6 ± 4.8. The first breastfeeding time was 22.0 ± 20.6 hours of birth. 62.4% of births were vaginal deliveries. 58% of the mothers were at primary school or below education level. The income of 75.7% of mothers was income equals expense, 74.3% of them were housewives, and 66.3% of them lived in villages. The majority of the mothers (87.1%) were Albanian, followed by Macedonian (10.4%) and other ethnic groups (2.5%) (Turkish, Bosnian, Romanian) (see Table 1).

Table 1. Mothers' age, first breastfeeding time of newborn baby, delivery type and some personal characteristics (n=202)

	$\bar{X}$ ±SD	**Median**	**Min**	**Max**
Age, year	28.6±4.8	28	19	43
First breastfeeding time (hour)	22.0±20.6	12	1	120
			n	**%**
Delivery type	Vaginal deliveries		126	62.4
	Cesarean deliveries		76	37.6
Ethnic groups	Albanian		176	87.1
	Macedonian		21	10.4
	Other (Turkish, Bosnian, Romanian)		5	2.5
Living place	Province		68	33.7
	Villages		134	66.3
Educational Status	Primary school or below		117	58
	High school and above		85	42
Income status	Income less than expenses		19	9.5
	Income equals expense		153	75.7
	Income more than expenses		30	14.9
Working status	Not working		150	74.3
	Working		52	25.7

$\bar{X}$ ±SD: Mean ± Standart daviation, Median: Med, Minimum: Min, Maximum: Max

Albanian, Macedonian, and other ethnic group mothers (Turkish, Bosnian, Romanian) stated that they received discharge training from health professionals (such as a doctor, nurse, or midwife) in the hospital (p>0.05). Regarding training subjects, Albanian mothers received less training in perineal episiotomy care (p<0.05) compared to Macedonian and other mothers (Turkish, Bosnian, Romanian). Macedonian mothers had more training on shower and hygiene (p<0.05), nutrition and fluid intake (p=0.018), sleep and rest, and family planning (p<0.01) compared to Albanian and other mothers (Turkish, Bosnian, Romanian). All of the other ethnic group mothers (Turkish, Bosnian, Romanian) received no training on postpartum sexual intercourse (p<0.001) (see Table 2).

Table 2. Comparison of hospital discharge training and maternal care training according to mothers' ethnic groups

		Ethnic groups (n=202)						**p** [a]
		Other (Turkish, Bosnian, Romanian) (n=5)		Macedonian (n=21)		Albanian (176)		
		n	**%**	**n**	**%**	**n**	**%**	
Getting discharge training from a health professionals (such as a doctor, nurse, midwife) at the hospital	No	1	20.0	8	38.1	86	48.9	0.305
	Yes	4	80.0	13	61.9	90	51.1	
Maternal Care								
Perineal episiotomy care	Yes	2	40.0	6	28.6	18	10.2	**0.011***
	No	3	60.0	15	71.4	158	89.8	
Breast care	Yes	4	80.0	13	61,9	74	42.0	0.063
	No	1	20.0	8	38.1	102	58.0	
Shower and hygiene	Yes	4	80.0	16	76.2	81	46.0	**0.013***
	No	1	20.0	5	23.8	95	54.0	
Nutrition and fluid intake	Yes	2	40.0	16	76.2	77	43.8	**0.018***
	No	3	60.0	5	23.8	99	56.3	
Breast milk and breastfeeding	Yes	3	60.0	14	66.7	80	45.5	0.159
	No	2	40.0	7	33.3	96	54.5	
Sleep and rest	Yes	2	40.0	13	61.9	51	29.0	**0.009****
	No	3	60.0	8	38.1	125	71.0	
Exercises	Yes	1	20,0	6	28.6	24	13.6	0.191
	No	4	80.0	15	71.4	152	86.4	
Family planning	Yes	1	20.0	9	42.9	27	15.3	**0.009****
	No	4	80.0	12	57.1	149	84.7	
Sexual intercourse	Yes	0	0.0	10	47.6	21	11.9	**0.001****
	No	5	100.0	11	52.4	155	88.1	
Emergencies requiring admission to a health institution	Yes	1	20.0	4	19.0	24	13.6	0.748
	No	4	80.0	17	81.0	152	86.4	

[a] Fisher's exact test ; *:p<0.05; **:p<0.01

Regarding newborn care, Albanian mothers received less training on navel care (p<0.05), shower and skin care, gas problems (p<0.01), cleaning and emptying diapers (p<0.01), dressing (p<0.05), regular health checks (p<0.05), jaundice (p<0.001), and vaccinations (p<0.05) compared to Macedonian and other mothers (Turkish, Bosnian, Romanian) (see Table 3).

Table 3. Comparison of mothers' ethnic groups and the training given on newborn care in the hospital

		Ethnic groups (n=202)						p [a]
		Other (Turkish, Bosnian, Romanian) (n=5)		Macedonian (n=21)		Albanian (176)		
Newborn care		**n**	**%**	**n**	**%**	**n**	**%**	
Navel care	Yes	3	60.0	13	61.9	55	31.3	**0.010***
	No	2	40.0	8	38.1	121	68.8	
Shower and skin care	Yes	4	80.0	16	76.2	68	38.6	**0.001****
	No	1	20.0	5	23.8	108	61.4	
Cleaning and emptying diaper	Yes	4	80.0	14	66.7	64	36.4	**0.005***
	No	1	20.0	7	33.3	112	63.6	
Dressing	Yes	5	100.0	17	81.0	102	58.0	**0.025***
	No	0	0.0	4	19.0	74	42.0	
Breastfeeding-nutrition	Yes	3	60.0	15	71.4	82	46.6	0.088
	No	2	40.0	6	28.6	94	53.4	
Gas problems	Yes	4	80.0	14	66.7	55	31.3	**0.001****
	No	1	20.0	7	33.3	121	68.8	
Regular health checks	Yes	4	80.0	16	76.2	89	50.6	**0.042***
	No	1	20.0	5	23,8	87	49.4	
Diaper and screening tests	Yes	4	80.0	14	66.7	92	52.3	0.233
	No	1	20.0	7	33.3	84	47.7	
Jaundice	Yes	2	40.0	13	61.9	30	17.0	**0.001****
	No	3	60.0	8	38.1	146	83.0	
Vaccinations	Yes	5	100.0	16	76.2	101	57.4	**0.047***
	No	0	0.0	5	23.8	75	42.6	

[a] Fisher's exact test;*:p<0.05; **:p<0.01

Albanian mothers did not feel ready for discharge (p<0.05), and there was no "mother" support at home (p<0.01) compared to Macedonian and other mothers (Turkish, Bosnian, Romanian) (see Table 4).

Table 4. Comparison of discharge-related data of mothers in terms of ethnicity

		Ethnic groups (n=202)						p [a]
		Other (Turkish, Bosnian, Romanian) (n=5)		Macedonian (n=21)		Albanian (176)		
		n	**%**	**n**	**%**	**n**	**%**	
Hospital discharge training request	No	1	20.0	0	0.0	9	5.1	0.173
	Yes	4	80.0	21	100.0	167	94.9	
Feeling ready to be discharged	No	0	0.0	5	23.8	87	49.4	**0.010***
	Yes	5	100.0	16	76.2	89	50.6	
The presence of a person at home to support the postpartum period	No	0	0.0	0	0.0	4	2.3	0.740
	Yes	5	100.0	21	100.0	172	97.7	
Support person at home, Spouse	No	3	60.0	12	57.1	105	59.7	0.975
	Yes	2	40.0	9	42.9	71	40.3	
Support person at home, Mother	No	3	60.0	16	76.2	164	93.2	**0.002****
	Yes	2	40.0	5	23.8	12	6.8	
Support person at home, Mother-in-law	No	0	0.0	4	19.0	26	14.8	0.558
	Yes	5	100.0	17	81.0	150	85.2	

[a] Fisher's exact test; *: p<0.05; **: p<0.01

Regarding the adequacy of the discharge training given to the mothers who gave birth at the hospital, almost all of the participants evaluated the training as "not sufficient"(p<0.001) (see Table 5).

Table 5. The adequacy of the discharge training on "maternal care" given in the hospital (n=202)

		Quite enough		Sufficient		A little is enough		Not sufficient		p [a]
		n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	
Perineal episiotomy care	Yes	7	31.8	10	20.0	7	10.0	2	3.3	**0.002****
	No	15	68.2	40	80.0	63	90.0	58	96.7	
Breast care	Yes	16	72.7	29	58.0	42	60.0	4	6.7	**0.000*****
	No	6	27.3	21	42.0	28	40.0	56	93.3	
Shower and hygiene	Yes	17	77.3	34	68.0	44	62.9	6	10.0	**0.000*****
	No	5	22.7	16	32.0	26	37.1	54	90.0	
Nutrition and fluid intake	Yes	19	86.4	32	64.0	39	55.7	5	8.3	**0.000*****
	No	3	13.6	18	36.0	31	44.3	55	91.7	
Breast milk and breastfeeding	Yes	15	68.2	31	62.0	42	60.0	9	15.0	**0.000*****
	No	7	31.8	19	38.0	28	40.0	51	85.0	
Sleep and rest	Yes	14	63.6	20	40.0	29	41.4	3	5.0	**0.000*****
	No	8	36.4	30	60.0	41	58.6	57	95.0	
Exercises	Yes	8	36.4	12	24.0	11	15.7	0	0.0	**0.000*****
	No	14	63.6	38	76.0	59	84.3	60	100.0	
Family planning	Yes	10	45.5	12	24.0	14	20.0	1	1.7	**0.000*****
	No	12	54.5	38	76.0	56	80,.0	59	98.3	
Sexual intercourse	Yes	8	36.4	10	20.0	12	17.1	1	1.7	**0.000*****
	No	14	63.6	40	80.0	58	82.9	59	98.3	
Emergencies requiring admission to a health institution	Yes	7	31.8	13	26.0	9	12.9	0	0.0	**0.000*****
	No	15	68.2	37	74.0	61	87.1	60	100.0	

[a] Fisher's exact test; **:p<0.01; ***:p<0.001

Regarding the adequacy of the discharge training given to the mothers who gave birth in the hospital for newborn care, almost all of the participants evaluated the training as "not sufficient"(p<0.001) (see Table 6).

Table 6. The adequacy of the discharge training on the "newborn care" given in the hospital (n=202)

		Quite enough		Sufficient		A little is enough		Not sufficient		p [a]
		n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	
Navel care	Yes	18	75.0	22	47.8	30	42.9	1	1.6	**0.000*****
	No	6	25.0	24	52.2	40	57.1	61	98.4	
Shower and skin care	Yes	20	83.3	28	60.9	37	52.9	3	4.8	**0.000*****
	No	4	16.7	18	39.1	33	47.1	59	95.2	
Cleaning-emptying	Yes	18	75.0	24	52.2	35	50.0	5	8.1	**0.000*****
	No	6	25.0	22	47.8	35	50,0	57	91.9	
Dressing	Yes	22	91.7	35	76.1	55	78.6	12	19.4	**0.000*****
	No	2	8.3	11	23.9	15	21.4	50	80.6	
Breastfeeding-nutrition	Yes	21	87.5	30	65.2	45	64.3	4	6.5	**0.000*****
	No	3	12.5	16	34.8	25	35.7	58	93.5	
Gas problems	Yes	14	58.3	21	45.7	34	48.6	4	6.5	**0.000*****
	No	10	41.7	25	54.3	36	51.4	58	93.5	
Regular health checks	Yes	21	87.5	36	78.3	46	65.7	6	9.7	**0.000*****
	No	3	12.5	10	21.7	24	34.3	56	90.3	
Diaper and screening tests	Yes	17	70.8	38	82.6	50	71.4	5	8.1	**0.000*****
	No	7	29.2	8	17.4	20	28.6	57	91.9	
Jaundice	Yes	15	62.5	11	23.9	19	27.1	0	0.0	**0.000*****
	No	9	37.5	35	76.1	51	72.9	62	100.0	
Vaccines	Yes	20	83.3	42	91.3	53	75.7	7	11.3	**0.000*****
	No	4	16.7	4	8.7	17	24.3	55	88.7	

[a] Fisher's exact test; ***:p<0.001

4. Discussion

The prominent findings of this study; TIB is quite late in mothers who gave birth, and postpartum readiness for discharge differs according to ethnic groups, many ethnic group mothers consider the discharge education given at the hospital insufficient. The findings were discussed in light of the research literature on similar topics.

WHO and the United Nations Children's Fund (UNICEF) recommend exclusive breastfeeding for the first six months. In a study conducted in Turkey, the overall TIB rate was determined as 80.5%. TIB rates were found as 83.1% in the Neonatal Baby Service (NBS), and 73.1% in the Obstetrics and Gynecology Service (OGS) [12]. In another study the frequency of was 70.7% [18]. In this study, mothers reported that the first postpartum breastfeeding started after an average of 22.0±20.6 hours (Table 1). In North Macedonia, the first breastfeeding generally starts at a late period in postpartum hospitalized mothers, so this rate was indicated in hours. UNICEF reports that 44% of the world starts, with a rate of 47% in Africa, 42% in Asia, 49% in Latin America, and 53% in less developed countries [19]. In Balkan countries, the rate of TIB is 21% in North Macedonia, 4.6% in Bulgaria, 7.6% in Serbia, 25.2% in Montenegro, 42.3% in Bosnia-Herzegovina, and 42.9% in Albania [20]. Only 12% of Romanian mothers in Europe start breastfeeding within the first hour of birth [21]. In Athens, Greece, 40.5% of the mothers did not have any information about their newborn being fed for the first time, and 63.6% of the mothers stated that although they wanted to breastfeed, their babies were fed formula milk without their knowledge [22]. In Bulgaria observed that postpartum mothers were taken to separate rooms after seeing their babies for a short time and were separated due to routine baby care lasting at least two hours [23]. In North Macedonia, breastfeeding time is delayed due to reasons such as lack of room and routine maternal-newborn care [6]. Compared to European countries, the first postpartum breastfeeding time is later in Balkan countries. It is a common practice to separate the baby and the mother for routine care practices in the postpartum period. According to the AAP, routine care of the mother and baby can be done during skin-to-skin contact in the postpartum period, or it can be postponed until after skin-to-skin contact as long as both are in good health [24].

The quality of education differs between ethnic groups in North Macedonia due to the fact that education is provided in the mother tongue for each ethnic group instead of accepting education in the common language [25,26]. The ethnic groups that live in North Macedonia are Macedonian (65%), Albanian (25%), Turks (4%), Romanian (3%) and other minorities (2%). Albanians constitute the majority of the population following Macedonians [27]. Regarding training for self and newborn care, Albanian ethnic group mothers received less training compared to Macedonian mothers. Macedonian mothers reported that they received more training on shower and hygiene ($p<0.05$), nutrition and fluid intake ($p<0.05$), sleep and rest ($p<0.01$), family planning ($p<0.01$), and sexual intercourse ($p<0.001$) than Albanian and other mothers. The Albanian mothers indicated that they received less training on navel care ($p<0.05$), shower and skin care ($p<0.01$), cleaning and emptying diapers ($p<0.01$), dressing ($p<0.05$), gas problems ($p<0.01$), regular health checks ($p<0.05$), jaundice ($p<0.001$), and vaccinations ($p<0.05$) compared to Macedonian and other mothers ($p<0.05$). Albanian mothers did not feel ready for discharge ($p<0.05$), and there was no “mother” support at home ($p<0.01$) compared to Macedonian and other mothers (Turkish, Bosnian, Romanian). (Table 2-4). Most Macedonians were in a nuclear family structure and both spouses were working. Compared to other ethnic groups, their income status was better, and their knowledge level was at a higher level [26]. The highest rate of participation in educational programs that contribute to the development of parents' skills in parenting was in Macedonians (36%), and the least was in Albanians (3%) and Romanians (4%). Macedonian mothers were more advantageous than Albanians and other ethnic groups (Turkish, Bosnian, Romanian) in terms of education and economy [28]. Mothers who had just given birth mostly received information and

support for postpartum maternal/newborn care from their relatives at home [29]. It is interpreted that differences in "Turkish, Albanian, Macedonian, Bosnian and Romanian" ethnic group characteristics in North Macedonia also affected postpartum discharge.

Most mothers scored "not sufficient" for the discharge training given at the hospital for postpartum maternal and newborn care (Table 5-6). UNICEF (2013) reported that only 54% of the mothers who had just given birth in North Macedonia were given postpartum care and that these mothers also found the training given before discharge from the hospital insufficient. It was interpreted that the inadequate quality of care provided in the maternity wards of public hospitals negatively affected the health of mothers [28]. Due to the poor conditions in the health system in North Macedonia, women's complaints did not gain traction [30]. Mothers also found the newborn care training given before discharge from the hospital insufficient [7]. According to Mersini et al., the quality of postpartum care for mothers in Albania was low and inadequate. In Albania, the quality of maternal and newborn care was found to be below standard [29]. Newborns experience high mortality throughout the entire postnatal period. The highest mortality rate in the first week, particularly on the first day [31]. There is no research examining the effectiveness and satisfaction of care given in the postpartum hospital in North Macedonia. Newborn babies are discharged after routine controls, infection control, and necessary treatment for therapeutic purposes, and the training given to the mother about the baby is completed with short verbal education. Whether mothers comprehend the education given is not checked. Midwives and nurses who provide training have limited knowledge. The lack of education is mostly about newborn feeding and breastfeeding [7]. The quality of education on maternal and newborn care given in the postpartum hospital in North Macedonia is insufficient.

This study is not a multicenter study or cohort study. The study had limitations such as hospital admission and data collection pauses due to the COVID-19 pandemic in the data collection period.

5. Conclusion

In conclusion, TIB is quite late in mothers who give birth. Postpartum readiness for discharge differs according to ethnic groups. Many ethnic group mothers consider the discharge education given at the hospital insufficient. Suggestions based on the study findings in North Macedonia, importance should be given to initiating breastfeeding in the early postpartum period, within the first hour. The routine care of mother and newborn should be done during skin-to-skin contact or if their health is good, routine care should be postponed until after the first breastfeeding. The training of health professionals (nurses, midwives, doctors) who will manage postpartum care and discharge services should be improved. Conditions in North Macedonia's health system and quality of health care regarding hospital discharge should be improved for all ethnic groups.

Acknowledgment

All of the data in this study was based on a Master's Thesis. The research data was collected by a graduate researcher in the Tetova province of North Macedonia, where she resides.

Ethical statement

Before the study was conducted, ethics approval was obtained from the Trakaya University Ethics Committee (BAEK 2019-363), and a research permit was obtained from the Trakya University Rectorate. Participants were obtained to submit their consent to an informed consent form in accordance with the Declaration of Helsinki.

Conflict of interest:

The authors declare no conflicts of interest.

Authors' Contributions:

E. H: Conceptualization, Methodology, Acquisition of data for the study, Formal analysis, Writing - Original draft preparation

H. K. S: Conceptualization, Methodology, Formal analysis, Writing - Original draft preparation
All authors read and approved the final manuscript.

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International Journal of Health Services Research and Policy
www.dergipark.org.tr/ijhsrp

IJHSRP

e-ISSN: 2602-3482

Research Article

HAS DOMESTIC VIOLENCE REALLY INCREASED DURING THE COVID-19 PANDEMIC? AN EXAMPLE FROM TURKEY

E. Füsun KARAŞAHİN[1] Ömer KARAŞAHİN[2] Uğur AVUN[1] C. Caner KILIÇ[1] Müzeyyen KÖKSAL[1] Birgül İBİŞOGLU[1] Gürsel BEDİR[1]

[1]Erzurum Provincial Health Directorate, Erzurum, Türkiye
[2]University of Health Sciences Erzurum Faculty of Medicine, Erzurum, Türkiye
* Corresponding author; karasahinfusun@gmail.com

Abstract: *This study aims to evaluate the frequency of domestic violence based on court orders for treatment issued against perpetrators of domestic violence under Law No. 6284 on the Protection of Family and the Prevention of Violence against Women. We retrospectively analyzed violence cases reported by the court to the provincial health directorate under Law No. 6284 and information recorded by health workers about women who stated they were subjected to violence in 2019, 2020, and the first 6 months of 2021. The data were presented using descriptive statistics. Compared to the pre-pandemic period, the number of court orders for medical evaluation and treatment under Law No. 6284 increased by 333.4% in the first year of the pandemic. In the first 6 months of 2021, this number exceeded the total for 2020. More than half of the perpetrators had at least one addiction. Although health workers continue to provide service under the extreme circumstances brought about by the pandemic, they have a social responsibility to act with an awareness of violence in all areas of service provision (even contact tracing) and remain vigilant for signs of violence, especially in women.*

Keywords*: COVID-19, Pandemics, Domestic violence, Women, Türkiye*

Received: December 17, 2023 *Accepted: February 23, 2024*

1. Introduction

Violence is one of the most important public health problems today. The primary environment in which violence occurs is within the family. The perpetrator is often the victim's intimate partner, and most victims are women. An estimated one in four women and one in 10 men have been subject to partner violence [1]. The World Health Organization (WHO) reports that one in every three women experiences physical or sexual violence by an intimate partner [2].

Some known risk factors for domestic violence include low income, unemployment, economic stress, depression, emotional insecurity, and social isolation [3]. Studies show that stress during periods of crisis leads to an increase in domestic violence, and epidemic diseases are among these crises [2, 4]. This phenomenon has been observed in outbreaks of cholera, Zika virus, and Ebola [5].

At the start of the COVID-19 pandemic, stay-at-home orders were implemented worldwide to reduce disease transmission, and this strategy is still being employed to varying degrees as the pandemic continues. Although this approach effectively curbs transmission, it forces women and children to stay at home, which is reported to be the most dangerous place for victims of violence [6].

The pandemic is considered a dangerous risk factor for domestic violence because it has increased social, economic, and psychological stressors while social isolation measures have increased the amount of time victims spend with perpetrators, reduced their access to people/institutions that provide social

support, and limited their opportunities to escape violence [7]. In fact, reports of increased domestic violence in many countries have been published in the literature [6]. It was also reported in the publications that violence against children had increased and that children were kept away from the control of those who were obliged to report due to the interruption of face-to-face education [8 - 10]. Most of these publications are based on calls to support hotlines. However, there is no information regarding cases that were reported to law enforcement authorities and resulted in legal action. It is known that violence during this period may be a first occurrence or may have increased in frequency or severity to the point that it is reported to authorities despite the obstacles involved [11].

This study aimed to evaluate whether there has been an increase in domestic violence against women during the COVID-19 pandemic by comparing protective injunctions against the perpetrator ordered by judicial authorities under Law No. 6284 on the Protection of Family and Prevention of Violence against Women by year.

2. Materials and Methods

This descriptive study included 29 cases resulting in protective injunctions under Law No. 6284 in 2019 through June 2021, retrospectively. The study was approved by the Clinical Research **Ethics Committee** of the Erzurum Regional Training and Research Hospital. (Date: April 19, 2021, Number: Erzurum BEAH KAEK 2021/08-161). Owing to the retrospective nature of the study, the need for informed consent was waived. The study was conducted under the principles of the Declaration of Helsinki. Also, we obtained a work permit from the provincial health directorate.

2.1. Study setting

The study was conducted in the Erzurum province, in eastern Turkey. It consists of a total of 20 districts, three central and 17 peripheral, with the most remote district located 180 km from the center. According to data from the Turkish Statistical Institute, the population was 762062 in 2019 and 758289 in 2020 [12]. Some characteristics of the province are presented in Table 1.

Table 1. Selected demographic data for Erzurum province, 2019-2020

	2019	**2020**
Female population by age	762062	758289
0-9 years	63821	62475
10-19 years	68634	65278
20-29 years	68377	68305
30-39 years	52188	51316
40-49 years	44129	45765
50-59 years	34280	34711
60-69 years	25290	25775
70-79 years	17507	17803
80-89 years	6774	6902
≥90 years	1169	1288
Number of marriages	4760	4343
Number of divorces	632	530
Crude divorce rate (per thousand)	0.83	0.7
Crude marriage rate (per thousand)	6.22	5.71
Crude birth rate (per thousand)	16.9	-
Total fertility rate (number of children)	2.15	-
Crude death rate (per thousand)	5.4	-
Literacy rate (%)	92.53	-
Average household size	3.81	3.75
Middle school enrollment rate among girls (%)	76.53	77.15
Gross domestic product per capita ($)	5324	-

Source: Turkish Statistical Institute [12, 13].

In a study of domestic violence against women in Turkey in 2014 , it was determined that in the Northeast Anatolia region, which includes our province, 48.7% of women had no formal education, 30.9% completed elementary school, 12.5% completed middle school, 5.9% completed high school, 2.0% had an undergraduate/graduate education, and the average length of education was 5.3 years. Among men, 29.2% had no education, 33.8% completed elementary school, 18.3% completed middle school, 13.8% completed high school, 4.9% had an undergraduate/graduate education, and the average length of education was 5.9 years. In the same study, it was reported that in Turkey overall, the distribution of education level among women was 32.2% no education, 34.3% elementary school, 14.7% middle school, 11.9% high school, and 6.9% undergraduate/graduate education and the average length of education was 5.8 years. For Turkish men overall, this distribution was 19.2% no education, 34.0% elementary school, 19.1% middle school, 17.5% high school, and 10.1% undergraduate/graduate education and the average length of education was 7.3 years. In our region, 23.0% of women 15 to 59 years of age were illiterate, 81.5% of women were not employed, and 34.2% married before the age of 18 years [14].

2.2. Law No. 6284 on the Protection of Family and Prevention of Violence against Women

Law No. 6284 on the Protection of Family and Prevention of Violence against Women went into effect in our country on March 8, 2012. This law defines violence, domestic violence, and violence against women and specifies injunctions to protect and prevent violence against women, children, family members, and stalking victims. It expanded the scope of protective injunctions to prevent further violence against victims and established authorities to enable preventive injunctions to be made against perpetrators of violence.

Within the scope of a protective injunction, the judge can order the offender to present to a health care center for evaluation or treatment, including hospitalization and inpatient treatment in case of addiction. In this case, the provincial health directorates are also notified of the injunction and its enforcement must be overseen by health managers. If the offender does not have health insurance, the health care services received by both the victim and perpetrator of violence are covered by the state.

If the offender does not comply with the injunction orders, the judge may order coercive imprisonment for three to ten days, and if the offense is repeated, for 15 to 30 days depending on the nature and severity of the violation.

To combat violence against women, the Domestic Violence Bureau affiliated to the Chief Public Prosecutor’s Office; Anti-Domestic Violence Branch Offices affiliated to the General Directorate of Security in each police station; and the Division of Children and Women affiliated to the Gendarmerie General Command were established. In situations where a delay is deemed problematic by these units, they can make a preliminary order. However, orders not approved by the judge within 24 hours are void.

In this study frequency of domestic violence cases reported by the court to the provincial health directorate in Erzurum, Türkiye, during COVID 19 period resulting in legal action under Law No. 6284 on the protection of family and prevention of violence against women were evaluated retrospectively .

2.3. Data collection

The provincial health directorate records the information of perpetrators of violence who are reported to have court-ordered protective injunctions. The health measures ordered by the judge are fulfilled and feedback is provided to the court. In this study, we retrospectively reviewed all 29 records from 2019, 2020, and the first six months of 2021 held by the provincial health directorate without any selection criteria. From these records, we evaluated the following information pertaining to the victim and perpetrator of violence:

- Marital status,

- Age,
- Relationship to the victim,
- Duration of the injunction,
- Type of violence,
- Results

In addition, in order to provide general information about violence in our province, we also conducted a chart review to collect the information of women who stated to health workers that they were subjected to violence. This information included the woman's age, marital status, education, type of violence she was exposed to, and what actions the health worker took in response to the case.

2.4. Statistical analyses

In this descriptive study a statistics software package was used for all analyses. Continuous data were presented as mean and standard deviation (SD) or median and interquartile range (IQR), and categorical variables as frequency and percentage.

3. Results

3.1. Characteristics of women subjected to violence

The demographic information of women who stated they were subjected to violence is presented in Table 2. Violence was reported by 269 women in 2019, 323 women in 2020, and 141 women in the first six months of 2021. Between 2019 and 2020, the frequency of violence increased by 20.1%, the frequency of physical and sexual violence increased by 28.62% and 85.71%, respectively, and there was a six-fold increase in the number of victims with an associate degree or higher education. The number of cases reported to law enforcement by health workers increased by 256.1%. Although only the first half of 2021 was analyzed, the number of notifications to law enforcement exceeded those made in 2019.

Table 2. Characteristics of women who reported being subjected to violence between 2019 and 2021, Erzurum.

		2019	2020	2021 (first 6 months)
Age (years)	18	11	19	13
	19-30	138	131	50
	31-40	86	112	40
	41-50	24	41	25
	51-60	9	20	13
	≥60	1	0	0
	TOTAL	269	323	141
Education Level	Illiterate	9	22	5
	Elementary school	115	153	45
	Middle school	106	79	30
	High school	34	33	18
	Associate degree or higher	5	32	29
	Unknown	0	4	14
	TOTAL	269	323	141
Marital Status	Single	9	13	13
	Divorced/Widowed/Separated	14	30	11
	Married	240	278	107
	Not Specified	6	2	10
	TOTAL	269	323	141

Table 2 Continued.

		2019	2020	2021 (first 6 months)
Type of Violence	Physical	248	319	127
	Emotional/Verbal/Psychological	176	118	54
	Economic	46	37	14
	Sexual	7	13	4
	TOTAL	477	487	199
Referral and Evaluation Due to Violence Against Women	Informing the victim	212	138	57
	Medical diagnosis and treatment	225	310	115
	Referral for psychological support	40	84	22
	Creating a safety plan	2	2	7
	Filing a forensic report	179	175	48
	Referral to women and children protective services	1	0	1
	Notifying law enforcement	24	85	27
	TOTAL	683	794	277

3.2. Characteristics of domestic violence incidents resulting in legal action under Law No. 6284

A total of 29 cases were reviewed in this study. The provincial health directorate was notified by the judicial authorities of three protective injunction orders in 2019, 13 in 2020, and 13 in the first six months of 2021.

The descriptive characteristics of the perpetrators of violence are presented in Table 3. The number of perpetrators whose injunctions included court-ordered evaluation/treatment increased by 333.4% and surpassed the total for 2020 in the first six months of 2021. Perpetrators of violence who had addictions predominated during the pandemic, with 53.9% of perpetrators in 2020 and 61.5% in 2021 having at least one addiction.

Table 3. Descriptive characteristics of perpetrators of domestic violence, 2019-2021, Erzurum.

	2019	2020	2021 (first 6 months)
Sex (male), n (%)	3 (100)	12 (92.30)	12 (92.30)
Age (years)			
$\bar{X}$ ±SD	37.0±16.64	31.38±10.84	41.77±8.99
Median (interquartile range)	30 (25.0 – 30.0)	28 (23.50 – 37.50)	41 (34.0 – 47.0)
Marital status, n (%)			
Married	1 (33.3)	6 (46.2)	12 (92.3)
Single	2 (66.7)	6 (46.2)	1 (7.7)
Unknown	-	1 (7.7)	-
Employment status, n (%)			
Working	3 (100)	7 (53.8)	12 (92.3)
Not working	-	4 (30.8)	1 (7.7)
Unknown	-	2 (15.4)	-
Addiction, n (%)			
Yes	-	7 (53.9)	8 (61.5)
Alcohol	-	3 (23.1)	2 (15.4)
Illicit drugs	-	4 (30.8)	5 (38.5)
Gambling	-	-	1 (7.7)
None	2 (66.7)	5 (38.5)	5 (38.5)
Unknown	1 (33.3)	1 (7.7)	-

The types of violence committed are presented in Table 4. Most victims were subjected to multiple types of violence. Concurrent physical and psychological violence was remarkably common.

Table 4. Types of violence, 2019-2021, Erzurum.

	2019 n (%)	2020 n (%)	2021 (first 6 months) n (%)
Psychological	2 (66.7)	5 (38.5)	1 (7.7)
Physical	-	1 (7.7)	2 (15.4)
Physical and psychological	-	6 (46.2)	9 (69.2)
Psychological and sexual	-	-	1 (7.7)
Unknown	1 (33.3)	1 (7.7)	-

The victims' relationships to the perpetrators of violence are shown in Table 5. Most victims were female and the spouse of the perpetrator.

Table 5. Victim's relationship to the perpetrator of violence, 2019-2021, Erzurum.

	2019* n (%)	**2020* n (%*)**	**2021 (first 6 months) * n (%)**
Spouse	-	7 (53.9)	10 (76.9)
Child	-	1 (7.7)	3 (23.1)
Mother	-	6 (46.2)	2 (15.4)
Father	-	1 (7.7)	2 (15.4)
Other female relative	3 (100)	2 (15.4)	1 (7.7)

*Some cases involved multiple victims.

Durations of court injunctions against perpetrators of violence and the results of follow-up are presented in Table 6.

Table 6. Duration and results of court injunction orders, 2019-2021, Erzurum.

	2019 n (%)	**2020 n (%)**	**2021 (first 6 months) n (%)**
Validity period of injunction,			
3 months	-	3 (23.1)	2 (15.4)
4 months	-	1 (7.7)	-
6 months	3 (100)	9 (69.2)	11 (84.6)
Result			
Ongoing	1 (33.3)	5 (38.5)	9 (69.2)
Complied with order	1 (33.3)	4 (30.8)	1 (7.7)
Refused treatment	1 (33.3)	4 (30.8)	3 (23.1)

4. Discussion

This study focused on cases officially reported by the court to the provincial directorate of health. The aim of this practice is to ensure that perpetrators of violence receive court-ordered treatment as part of their injunction. According to the injunction communicated by the court to the health directorate, an appointment in the psychiatric outpatient clinic is made for the perpetrator and they are followed up as deemed appropriate by the psychiatrist. If the perpetrator does not comply with the order, they may be subjected to fines or coercive imprisonment.

With the pandemic, domestic violence against both women and children has increased [6 – 10]. In our study, there have been marked increases in cases of violence resulting in protective injunctions. We observed a 20% increase in 2020 compared to 2019, while the total number of injunctions in 2020

was reached in the first six months of 2021. Similarly, the number of cases reported to law enforcement by health workers in 2019 increased nearly four-fold in 2020 and was exceeded in the first half of 2021. As practices vary by country, we were unable to find data comparable to ours in the literature. A United Nations report dated April 9, 2020 stated that cases of domestic violence had increased more than 25% during the pandemic process and even doubled in some countries. A 30% increase in domestic violence incidents after quarantine in France on March 17, 2020, a 25% increase in calls to a domestic violence call center after quarantine in Argentina on March 20, 2020, and a 30% increase in calls to Cyprus and Singapore hotlines were reported. In Canada, Germany, Spain, the United Kingdom, and the United States, there is information that cases and shelter demand have increased [15]. In Australia, domestic abuse increased by 5% and searches for support against domestic violence in internet search engines increased by 75% [16]. A technical note from Argentina noted a 32% increase in call center calls, and although there was a 62% decrease in police reports, calls from victims increased by 127% [17]. According to a report from the Office for National Statistics based on England and Wales police data, domestic abuse cases increased in April to June of 2020 compared to the same period in previous years. In the same study, it was determined that the greatest increase in notifications compared to previous months occurred in May, when the quarantine measures implemented in March were relaxed. This was thought to be attributable to the victims' late reporting of abuse due to safety concerns. In addition, the number of arrests for crimes related to domestic abuse increased during this period by 24% compared to the previous year [18].

It is known that some mental disorders are associated with higher risk of perpetrating domestic violence, including depression, anxiety, alcohol/substance addiction, attention deficit and hyperactivity disorder, and personality disorder [19]. In one study, it was reported that a majority (53.3%) of domestic violence perpetrators had substance addiction or mental disorders [20]. Similarly, we observed that addicts comprised the majority of perpetrators during the pandemic in our study, with substance addiction being most common.

In another study conducted in our country during the pandemic, it was reported that violence against women increased by 27%, physical violence by 81%, and psychological violence by 93%. A study from Argentina showed that psychological violence increased by 76% [4, 17]. In our study, however, the high proportion of victims reporting multiple types of violence at the same time is more striking. Based on the statements of women, it can be understood that cases of physical and sexual violence have increased.

5. Conclusion

This study of one province in Turkey demonstrates once again that violence against women has increased during the pandemic. Considering the sociodemographic characteristics of our province, the scale of the increase in cases reported to judicial authorities is an indication that this violence has become unbearable for women. Moreover, the global economic problems brought about by the pandemic make women think that worse days are ahead. Our study data are limited due to the nature of domestic violence, which is often hidden, and only encompass what is reflected to healthcare providers. Therefore, our recommendations are addressed more broadly in the context of the provision of health services.

Health workers should inform all women about the resources available to them. This can be done through brochures, or through notes placed in restrooms for women who present to health institutions with the perpetrator. Violence against women should also be discussed more in public health education. In this context, there is a need to increase activities to inform the public about programs and institutions where women who are victims of violence can get support in regards to their legal rights (e.g., Women's Asylum Houses, Purple Roof, Women's Support Program, Violence Prevention and Monitoring Centre).

Health workers' awareness of this issue should be raised, and they should remain vigilant for signs of violence during all parts of service provision. Even health personnel working in sample collection or contact tracing should consider the possibility of violence as the pandemic continues. It must be kept in mind that the home is not a safe environment for everyone.

Ethical statement:

The study was approved by the Clinical Research Ethics Committee of the Erzurum Regional Training and Research Hospital. (Date: April 19, 2021, Number: Erzurum BEAH KAEK 2021/08-161). Owing to the retrospective nature of the study, the need for informed consent was waived. The study was conducted under the principles of the Declaration of Helsinki.

Conflict of interest:

The authors have no potential conflicts of interest to disclose.

Authors' Contributions:

E.F.K, Ö.K., B.İ. conceptualized and designed the study (33%).
E.F.K., U.A., C.C.K., M.K collected the data (25%).
E.F.K., Ö.K., U.A., C.C.K., M.K analyzed the data (20%).
E.F.K., U.A., C.C.K., M.K reviewed the literature (25%)
E.F.K., Ö.K., B.İ. drafted the initial manuscript (33%).
E.F.K, Ö.K., B.İ., G.B. reviewed the manuscript, approved the final manuscript, and agree to be accountable for all aspects of the work (25%).

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