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Effects of Lavender Oil Aromatherapy on Pain, Anxiety, and Comfort after Cesarean Section: A Randomized Controlled Trial

Lavanta Yağı Aromaterapisinin Sezaryen Sonrası Ağrı, Anksiyete ve Konfor Üzerine Etkileri: Randomize Kontrollü Bir Çalışma

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ABSTRACT

Objective: This study aims to determine the effects of lavender oil aromatherapy on pain, anxiety, and comfort after cesarean section.

Methods: This study was conducted as a three-group randomized and controlled trial conducted in a city hospital in Adana, Türkiye between August and December 2020.The study included 93 women who had cesarean section, with 30 women in the experimental group, 31 women in the placebo group, and 32 women in the control group. The study was conducted in four phases including before the cesarean and 1st, 4th, and 8th hours post-cesarean section. Data were collected through the "Personal Information Form", the "Visual Analogue Scale (VAS)", the "Trait Anxiety Inventory (TAI)", the "State Anxiety Inventory (SAI)", and the "Postpartum Comfort Scale (PCS)".

Results: The women in the experimental, control and placebo groups were found to demonstrate statistically significant differences in terms of their VAS mean scores according to the processes (P<.001). The women in the experimental and control group demonstrated statistically significant differences in terms of their SAI mean scores (P<.05). Statistically significant differences were found between the experimental group women's physical comfort, socio-cultural comfort, and PCS total mean scores according to the processes (P<.05).

Conclusion: The results of this study suggest that lavender oil aromatherapy can be used to decrease pain and anxiety and increase comfort after a cesarean section.

Keywords: Lavender oil aromatherapy, cesarean section, pain, anxiety, comfort

ÖZ

Amaç: Bu çalışma, lavanta yağı aromaterapisinin sezaryen sonrası ağrı, anksiyete ve konfor üzerindeki etkilerini belirlemeyi amaçlamaktadır.

Yöntemler: Bu çalışma Ağustos-Aralık 2020 tarihleri arasında üç gruplu randomize kontrollü bir çalışma olarak Adana'daki bir şehir hastanesinde yürütülmüştür. Çalışmaya 30'u deney, 31'i plasebo ve 32'si kontrol grubunda olmak üzere sezaryen olan 93 kadın dahil edilmiştir. Çalışma, sezaryen öncesi ve sezaryen sonrası 1., 4. ve 8. saatler olmak üzere dört aşamada yürütülmüştür. Araştırmanın verileri Kişisel Bilgi Formu, Visual Analog Skala (VAS), Sürekli Anksiyete Ölçeği (SAÖ), Durumluk Anksiyete Ölçeği (DAÖ) ve Doğum Sonu Konfor Ölçeği (DSKÖ) kullanılarak toplanmıştır.

Bulgular: Deney, kontrol ve plasebo gruplarında kadınların süreçlere göre VAS puan ortalamaları açısından istatistiksel olarak anlamlı fark tespit edilmiştir (P<,001). Deney ve kontrol grubunda kadınların süreçlere göre DAÖ puan ortalamaları açısından istatistiksel olarak anlamlı fark tespit edilmiştir (P<,05). Deney grubu kadınların süreçlere göre fiziksel konfor, sosyokültürel konfor ve DSKÖ toplam puan ortalamaları, plasebo grubu kadınların ise fiziksel konfor puan ortalamaları açısından istatistiksel olarak anlamlı fark tespit edilmiştir (P<,05).

Sonuç: Bu çalışmanın sonuçları, lavanta yağı aromaterapisinin sezaryen sonrası ağrı ve anksiyeteyi azaltmak ve konforu artırmak için kullanılabileceğini göstermektedir.

Anahtar kelimeler: Lavanta yağı aromaterapisi, sezaryen, ağrı, anksiyete, konfor

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INTRODUCTION

Cesarean section is an alternative method of delivery when vaginal delivery is not possible or when it poses a risk for the fetus.[1,2] The developments in patient care facilities and technologies have led to an increase in cesarean sections rates worldwide.[1,3]

The "ideal cesarean section rate" targeted by the World Health Organization since 1985 is 10-15% [4,5], yet this rate is much higher in Türkiye and worldwide.[2,6] According to new research from the World Health Organization (WHO), caesarean section use continues to rise globally, now accounting for more than 1 in 5 (21%) of all child births. According to Robson Classification, cesarean delivery rate in Türkiye in 2023 was reported to be 57.55%.[7] Research findings indicate that this number is set to continue increasing over the coming decade, with nearly a third (29%) of all births likely to take place by caesarean section by 2030.[8] Cesarean section, one of the most frequently encountered surgical interventions used today[2], could be the beginning of various physical and psychological problems in women. After a cesarean section, women could experience physical problems such as incision pain, sleep disorders, activity restrictions, gastrointestinal disorders, anesthesia complications, and psychological problems such as anxiety, depression, loss of control, and deterioration in the body image.[9]

Pain after a cesarean section is an acute pain type accompanied by an inflammatory process revealing itself with a surgical trauma with a decrease in the effect of anesthesia.[10,11] Pain after the cesarean section causes women to be reluctant about moving and fear to perform activities, which could restrict them from fulfilling many daily activities such as sitting, walking, meeting their hygiene needs, and breastfeeding their babies.[10,12] Activity restrictions could increase the risk of deep venous thrombosis and wound healing process.[10] Pain and these pain-related problems experienced after cesarean section cause a decrease in women's comfort. In this regard, it is important to plan interventions to increase comfort like relieving pain in the postpartum period.[13]

Adaptation to the postpartum period, which includes a series of renewal processes, is highly important for the mother and the baby.[13,14] Women face many physiological and psychological changes during this period. While most of these changes are considered normal and physiological, complaints and problems such as pain and anxiety require immediate interventions. Complaints and problems such as pain and anxiety are common in the first days following birth.[15]Anxiety could cause patients to experience negative physiological (vasoconstriction caused by noradrenaline discharge, increase in heart rate and contractility, increase in blood pressure and body temperature, hot flashes, sweating, etc.) and psychological effects (difficulty in concentrating, difficulty in performing simple tasks, decreased interest in daily activities, etc.).[9,16] In this regard, pain and anxiety should be assessed and managed in a multidimensional way in the early postnatal period, and interventions should be made to increase mothers' comfort by providing care for their problems.[17]

The literature recommends the use of pharmacological and nonpharmacological methods in tandem for decreasing pain after a cesarean section.[15,17] Lavender oil aromatherapy is one of the nonpharmacological methods used for relieving pain. Lavender is a flowering aromatic plant from the Lamiaceae family unique to the Western Mediterranean and is commonly used in lavender oil aromatherapy.[17,18-20] Today, due to its anti-inflammatory, anti-depressant, hypnotic, soothing, relaxant, anti-bacterial, and antispasmodic effects, lavender oil aromatherapy is utilized to relieve pain, anxiety, depression, insomnia, and fatigue.[18-21] The literature reports that the lavender oil aromatherapy utilized using lavender extract has effects on controlling various acute and chronic pain and decreasing pain after cesarean section.[17,19]

Nurses should know the application method in aromatherapy applications defining the density of oils, choosing the appropriate oil, deciding on the frequency and duration of application giving, observing the change in the patient and revealing the results. It is responsible for directing the applications and providing effective consultancy services.[22,23] Establishing the relationship between lavender oil aromatherapy and the reduction of pain, anxiety, and comfort is highly important for health professionals in terms of determining patients' postoperative responses and meeting their needs. The period after cesarean section is important in terms of controlling postoperative pain, maintaining maternal and infant health, establishing adequate contact and attachment between the mother and the baby, and providing the infant with adequate nutrition.[10-12]

AIM

This study aims to determine the effects of lavender oil aromatherapy on pain, anxiety, and comfort.

Hypothesis

H1a: Using lavender aromatherapy in the postpartum period does not reduce women's pain.

H1b: Using lavender aromatherapy in the postpartum period does not increase women's postpartum comfort.

H1c: Using lavender aromatherapy in the postpartum period does not reduce women's anxiety.

METHODS

Study design and sample

This study was conducted as a three-group randomized and controlled study to determine the effects of lavender oil aromatherapy on pain, anxiety, and comfort in women after cesarean section in a City Hospital in the Mediterranean Region. The study followed the Consolidated Standards of Reporting Trials (CONSORT) guidelines.

The target population of the study was women who had a planned cesarean section in the gynecology and obstetrics clinic between 01.08.2020 and 30.12.2020. Primigravida women between the ages of 18 and 35 who gave birth with spinal anesthesia and who could understand and speak Turkish were included in the study. Patients with blood clotting disorders, migraines, chronic headaches, lavender (Lavandula Angustifolia mill) allergy, and anosmia were not included in the study. Patients were excluded from the study if they developed allergies, had postoperative complications (such as nausea, and vomiting), used different types and doses of analgesics in the postoperative period (Rodinac 75 mg 2x1, IM), and wanted to leave the study.

The sample size was calculated using power analysis after a pilot study was conducted with 15 women (5 experimental, 5 placebo, and 5 control). The number of samples for there search was calculated using the G*Power 3.1.9.7 program. In the calculation, the effect size value obtained as a result of the pilot study for one-way analysis of variance was taken as 0.34 (f = 0.34), and there quired number of samples with a 5% margin of error (α = 0.05) and 80% power (1-1-β = 0.80). Women recruited in the pilot study were not included in the study. The number was calculated as 87 in total, 29 in each group. However, considering the risk of data loss, the required number of samples was determined as 96 by taking 10% more than the determined number of samples (n_1:32; n_2:32; n_3:32). The women who met the research criteria and agreed to participate in the study were divided into groups using a random list. Two patients wanted to withdraw from the study (n=2), and one patient developed a complication after the cesarean section (n=1). Hence, three patients were excluded from the monitoring, and the study was conducted with 93 women: 30 experimental group, 31 placebo group, and 32 control group women (Flow Chart).

Instruments and outcome measures

Data were collected by the researchers face to face, using the Personal Information Form, the Visual Analogue Scale (VAS), the Trait Anxiety Inventory (TAI), the State Anxiety Inventory (SAI), and the Postpartum Comfort Scale (PCS).

The Personal Information Form: The literature was reviewed considering the purpose of the study and the possible factors that may affect the study, and the Personal Information Form prepared by the researchers included 6 questions (women's age, weight, height, pregnancy planning, reason for caesarean section, presence of postpartum complications).[10-12]

The Visual Analogue Scale (VAS): VAS is a very easy, effective, and repeatable pain severity measurement scale that requires minimum tools. It measures the severity of pain rapidly in a clinical environment. VAS is composed of a 10-cm line drawn horizontally or vertically. While one side of the line indicates a lack of pain, the other side of the 10-cm line indicates the worst imaginable pain, and the patient marks the pain she experiences. The length between no pain and the point marked by the patient indicates the patient's pain.[24] In a systematic review aiming to investigate the validity and reliability of VAS for the measurement of pain intensity, the results of many studies were analyzed and it was determined that it is a valid and reliable method.[25]

The State-Trait Anxiety Inventory (STAI): The scale is self-rating and consists of 40 descriptive items divided into two subscales. Among them, items 1–20 are the State Anxiety Inventory (SAI) to measure short-term unpleasant emotional experiences such as tension, fear, and worry. Items 21–40 are the Trait Anxiety Inventory (TAI) to describe underlying and long-term anxiety tendencies. The scores obtained from both of these scales range from 20 to 80. High scores and low scores show high and low anxiety levels, respectively. If the total scores are below 42 on both parts, anxiety levels are normal. If the total scores are above 42, the participant shows high anxiety. The scale was adapted to Turkish by Öner and Le Compte[26]; while reliability was enhanced in 1976, validity was enhanced in 1977. Cronbach's alpha coefficient of the scale was found 0.83 on the pre-test and 0.92 on the post-test.26 In the first phase, the Trait Anxiety Inventory (TAI) was used to determine the women's general anxiety during pregnancy before cesarean section, and in the other phase the State Anxiety Inventory (SAI) was applied to determine their current anxiety.

Postpartum Comfort Scale (PCS): The scale was developed by Karakaplan and Yıldız[27] to determine postpartum comfort. The Likert-type scale consists of 34 items and 3 sub-scales. Each item with a positive statement is scored between "strongly agree" (5 points) and "strongly disagree" (1 point), and each item with a negative statement is scored between " strongly agree" (1 point) and "strongly disagree" (5 points). Hence, scores to be obtained from the scale range between 34 and 170, with higher scores obtained from the scale indicating higher comfort. Sub-scales of the scale and item numbers of each sub-scale include 14 items related to physical and bodily perceptions in the physical comfort sub-scale and 9 items related to spiritual and psychological components in the Psycho-spiritual comfort sub-scale. Sociocultural comfort sub-scale includes 11 items related to interpersonal, family and social relationships, finance, and support systems. Cronbach's alpha reliability of the scale was found to be 0.78 for the total PCS, 0.78 for the first sub-scale, 0.70 for the second sub-scale, and 0.62 for the third sub-scale. Cronbach's alpha reliability of the scale was reported 0.78.[27]

Procedure

Aromatherapy Intervention

Essential oils vary in quality and thus may not all be suitable for use in clinical settings. When using aromatherapy clinically, it is necessary to use high-quality, 100% pure essential oils from a reputable supplier. The oil used in the study was reported to be suitable for labour/lactation in the "National Association for Holistic Aromatherapy (NAHA) Evidence-Based Lists of Prenatal-Intrapartum-Postpartum Essential Oils for Aromatherapy Practitioners" [28]. The principal investigator gave Rosense (30 ml, Isparta lavender, 100% essential oil) brand lavender oil to the patients assigned to the experimental group.

1. Phase

Women who met the inclusion criteria for this research and had planned to undergo a cesarean section were recruited at the clinic where the study was conducted. They were provided with comprehensive information regarding the study's objectives. Subsequently, written consent was obtained from those women who willingly agreed to participate in the study. Randomization was then employed to divide these consenting women into distinct groups. Each group was subjected to preoperatively the completion of a The Personal Information Form and TAI.

2. Phase

"The Postnatal Care Management Guideline" has been used in Türkiye since 2014 to standardize patient care in the postnatal period for mothers who gave normal birth and caesarean section.[29] According to the guideline, women who come to the ward after caesarean section are taken to bed, monitored, administered the fluids to be given during the treatment, administered the medication (analgesic that does not affect breast milk/ patient-controlled analgesic and anti anxiolytic-free, routinely given to all mothers), their vital signs are taken, and lochia follow-up and pad follow-up are performed. After the women received routine standard care provided within the first half hour, 3 drops of lavender essential oil was applied topically on gauze for three minutes to the women in the experimental group. The application time, duration and amount of lavender essential oil used in the study were determined in accordance with the literature.[10,11,19] The gauze containing the essential oil was attached to the collar of the woman's clothing. It is important to note that there were no reported adverse reactions associated with the essential oil during this intervention. Conversely, the placebo group received distilled water instead of essential oil. The control group, in contrast, did not undergo any specific interventions, and data integrity was maintained as each woman was placed in a separate room throughout the study. Data collection forms (VAS, SAI, PCS) in 2nd- phase were completed at the 1st hour after cesarean section.

3. Phase

As per the "The Postnatal Care Management Guideline" established by the Turkish Ministry of Health, women's mobilization is typically initiated during the third monitoring session, which corresponds to the time frame of 6 to 24 hours post-cesarean section. It is worth noting that in the hospital where this study was conducted, women were mobilized at the sixth-hour post-operation.[29] Considering that mobilization could potentially affect pain, anxiety and comfort levels, the study protocol was designed to include a two-hour period before and after mobilization for data collection, 3rd-phase occurring at 4 hours postpartum. After the women received routine standard care provided within the 3 drops of lavender essential oil was applied topically on gauze for three minutes at 3.5 hours after cesarean section to the women in the experimental group. The gauze containing the essential oil was attached to the collar of the woman's clothing. It is important to note that there were no reported adverse reactions associated with the essential oil during this intervention. Conversely, the placebo group received distilled water instead of essential oil. The control group, in contrast, did not undergo any specific interventions, and data integrity was maintained as each woman was placed in a separate room throughout the study. Data collection forms (VAS, SAI, PCS) 3rd- phase were completed at the 4th hour after cesarean section.

4. Phase

In addition to the routine standard care provided, the experimental group of patients received a topical application of 3 drops of lavender essential oil on a gauze bandage for three minutes the 7.5th hours following their cesarean section. The gauze containing the essential oil was attached to the collar of the woman's clothing. It is important to note that there were no reported adverse reactions associated with the essential oil during this intervention. Conversely, the placebo group received distilled water instead of essential oil. The control group, in contrast, did not undergo any specific interventions, and data integrity was maintained as each woman was maintained as each woman was placed in a separate room throughout the study. Data collection forms (VAS, SAI, PCS) 4th- phase were completed at the 8th hour after cesarean section.

Randomization

The participants were randomly assigned to the experiment (n=32), placebo (n=32), and control (n=32) groups via block randomization using a web site (https://www.randomizer.org/). Randomization was carried out by applying a correspondence table created and stored by a blind academic nurse other than the researchers. There searcher analyzing the data was also blind to the patients assigned to the groups.

Statistical analysis

Data were analyzed in the SPSS (IBM SPSS Statistics 22) package program. Normality distribution of the data was done using the Shapiro-Wilks test. Data were analyzed using descriptive statistics, chi-square, One-way ANOVA, and Repeated Measures tests. Statistical significance was taken $P< 0.05$.

Ethical consideration

Before the study was conducted, ethics approval was obtained from the Ethics Board of the School of Medicine at Cukurova University (08.03.2019/86-8); written approval was obtained from the Health Directorate of the Province of Adana; and permissions to use the scales in the study were obtained from the authors by e-mail. In addition, verbal and written consent was obtained from the participants after they were given information about the study.

RESULTS

Table 1 demonstrates the baseline characteristics of the women by the groups. No significant relationships were found between the experimental, control, and placebo groups in terms of age, body image index (BMI), and pre-cesarean TAI mean scores (P>.05). The groups were independent and homogenous in terms of these characteristics.

Table 1. Findings of the Descriptive Characteristics of the Women and Homogeneity of the Groups

Variable	Experimental group (n=30) $\bar{X} \pm MD$	Control group (n=32) $\bar{X} \pm MD$	Placebo group(n=31) $\bar{X} \pm MD$	Statistical analysis * Possibility
Age (year)	30.23±6.12	28.53±4.53	27.58±4.87	F=2.028[a] *P*=.138
BMI (kg/m^2)	28.60±3.54	30.07±5.21	29.96±3.86	F=1.119[a] *P*=.331
1.phase pre-cesarean TAI mean scores	34.53±3.43	38.25±8.04	36.97±6.51	F=2.728[a] *P*=.071

$\bar{X}$, mean; MD, Mean Deviation; [a]One-Way ANOVA

Statistically significant differences were detected in terms of VAS mean scores of the women in the experimental, control, and placebo groups according to the processes (P<.001). Bonferroni corrected pairwise comparisons performed to determine which group caused the significant difference showed that the experimental, control and placebo group women's second-phase total mean scores were higher compared to the 3rd and 4th phases, and the difference was found to be statistically significant. Third and 4th-phase VAS mean scores were found to be significantly lower than those of 2nd-phase mean scores. Similarly, significant differences were found between the 3rd-phase mean scores and the 4th-phase mean scores. Fourth-phase VAS mean scores were significantly lower than the 3rd-phase mean scores (Table 2). The groups demonstrated no significant differences in terms of their 2nd-phase VAS mean scores (P>.05). The groups indicated statistically significant differences in terms of their VAS mean scores according to their 3rd and 4th-phase mean scores (P<.05). VAS mean scores of the women in the experimental group were significantly lower in the 3rd and 4th phases in comparison to the control and placebo group (Table 2).

Women in the experimental and control group were found to have statistically significant differences according to the processes in terms of their SAI mean scores (*P*<.05). Bonferroni corrected paired comparisons were performed to see which group caused the differences, which is demonstrated in (Table 3).

The groups were found to have no statistically significant differences in terms of their 2nd-phase SAI mean scores (*P*>.05). Statistically significant differences were found in terms of 3rd and 4th-phase SAI mean scores according to the groups (*P*<.05). SAI mean scores of the women in the experimental group were found to be lower in the 3rd and 4th phases in comparison to the control group (Table 3).

Table 2. Comparison of Women's VAS Mean Scores

VAS	Experimental group (n=30)(1) $\bar{X} \pm MD$	Control group (n=32)(2) $\bar{X} \pm MD$	Placebo group (n=31)(3) $\bar{X} \pm MD$	Statistical analysis * Possibility
2. phase (1)	5.76±2.44	6.25±2.34	7.00±2.08	F=2.246[a] *P*=.112
3. phase (2)	4.00±1.89	4.93±2.21	5.35±1.56	F=4.006[a] ***P*=.022** [1-3]
4. phase (3)	2.23±1.38	3.59±2.31	3.38±2.34	F=3.828[a] ***P*=.025** [1-2]
Statistical analysis * Possibility	F=36.360[b] ***P*< .001** [1-2,3] [2-3]	F=15.589[b] ***P*< .001** [1-2,3] [2-3]	F=17.573[b] ***P*< .001** [1-2,3] [2-3]	

$\bar{X}$, Mean; MD, Mean Deviation; [a]One-Way ANOVA; [b]Repeated Measures
2.phase: post op 1sthours, 3.phase: post op 4thhours, 4.phase: post op 8thhours

Statistically significant differences were found in the physical comfort, socio-cultural comfort, and PCS mean scores of the women in the experimental group according to the processes, and the women in the placebo group were found to demonstrate statistically significant differences in terms of their physical comfort mean scores (*P*<.05). Bonferroni corrected paired comparison was performed to see which group caused significant differences, and the results are demonstrated in (Table 4).

Table 3. Comparison of Women's SAI Mean Scores

SAI	Experimental group (n=30)(1) $\bar{X} \pm MD$	Control group (n=32)(2) $\bar{X} \pm MD$	Placebo group (n=31)(3) $\bar{X} \pm MD$	Statistical analysis * Possibility
2. phase (1)	35.63±3.92	40.09±8.72	37.84±9.36	F=2.552[a] *P*= .084
3. phase (2)	32.73±3.70	39.53±9.034	35.35±7.93	F=6.839[a] ***P*= .002** [1-2]
4. phase (3)	30.77±3.191	35.63±8.83	34.10±9.09	F=3.285[a] ***P*= .042** [1-2]
Statistical analysis * Possibility	F=33.678[b] ***P*< .001** [1-2,3] [2-3]	F=3.988[b] ***P*= .029** [1-3] [2-3]	F=2.296[b] *P*= .119	

$\bar{X}$, mean; MD, Mean Deviation; [a]One-Way ANOVA; [b]Repeated Measures
2.phase: post op 1sthours, 3.phase: post op 4thhours, 4.phase: post op 8thhours

Experimental, control, and placebo groups were found to have no statistically significant differences in terms of their 2nd, 3rd, and 4th-phase socio-cultural comfort, psycho-spiritual comfort, and PCS total mean scores (Table 4).

The groups were found to have no statistically significant differences in terms of their 2nd and 4th-phase physical comfort mean scores (respectively *P*=.055; *P*=.438). Third-phase physical comfort mean scores were found to have statistically significant differences in terms of their physical comfort mean scores according to the groups (*P*=.008). Physical comfort mean scores of the women in the control group were found to be significantly higher in comparison to the experimental and placebo group (Table 4).

Table 4. Comparison of the PCS and Sub-Scale Mean Scores of the Women

		Experimental group (n=30)(1) $\overline{X} \pm MD$	Control group (n=32)(2) $\overline{X} \pm MD$	Placebo group (n=31)(3) $\overline{X} \pm MD$	Statistical analysis * Possibility
Physical Comfort	2. phase (1)	36.90±2.92	40.50±1.39	40.13±6.83	F=3.005[a] *P*= .055
	3. phase (2)	37.73±3.22	41.06±7.70	36.61±5.42	F=5.030[a] ***P*= .008** [1-2][2-3]
	4. phase (3)	37.60±3.36	39.22±7.33	36.68±11.01	F=0.833[a] *P*= .438
	Statistical analysis * Possibility	F=4.515[b] ***P*= .020** [1-2,3]	F=0.756[b] *P*= .478	F=6.752[b] ***P*= .004** [1-2,3]	
Psycho-Spiritual Comfort	2. phase (1)	15.77±2.59	17.13±5.21	17.55±4.43	F=1.458[a] *P*= .238
	3. phase (2)	16.13±2.41	16.50±3.91	16.87±3.74	F=0.351[a] *P*= .705
	4. phase (3)	16.07±2.46	15.91±3.30	16.94±3.58	F=0.955[a] *P*= .389
	Statistical analysis * Possibility	F=1.892[b] *P*= .170	F=0.686[b] *P*= .511	F=0.539[b] *P*= .589	
Sociocultural Comfort	2. phase (1)	24.13±2.56	24.84±5.68	22.77±4.08	F=1.842[a] *P*= .165
	3. phase (2)	25.10±2.85	25.34±5.56	23.39±2.99	F=2.174[a] *P*= .120
	4. phase (3)	25.53±2.72	26.03±4.96	23.94±3.14	F=2.642[a] *P*= .077
	Statistical analysis * Possibility	F=9.074[b] ***P*= .001** [1-2,3]	F=3.086[b] *P*= .060	F=2.789[b] *P*= .078	
PCS Total	2. phase (1)	76.80±5.75	82.47±14.80	80.45±14.19	F=1.658[a] *P*= .196
	3. phase (2)	78.97±5.86	82.91±13.56	76.87±9.77	F=2.789[a] *P*= .067
	4. phase (3)	79.20±6.16	81.16±10.91	77.55±13.59	F=0.895[a] *P*= .412
	Statistical analysis * Possibility	F=13.751[b] ***P*< .001** [1-2,3]	F=0.464[b] *P*=.633	F=2.398[b] *P*=.109	

$\overline{X}$, mean; MD, Mean Deviation; [a]One-Way ANOVA; [b] Repeated Measures
2.phase: post op 1sthours, 3.phase: post op 4thhours, 4.phase: post op 8thhours

DISCUSSION

Medicine used to relieve pain to enhance adaptation to this process causes adverse effects such as respiratory problems, nausea-vomiting, and itching, is transmitted to the mother's milk, and could cause sedation in the baby. Considering the adverse effects of drugs, nonpharmacological methods should be preferred before pharmacological methods in the management of the process. Therefore, the use of lavender oil aromatherapy is recommended in this process. This study aimed to determine the effects of lavender oil aromatherapy on pain, anxiety, and comfort and found that after the use of lavender oil aromatherapy (3rd and 4th phases), the pain severity of women in the experimental group was significantly lower in comparison to the control and placebo group. A systematic review study including 15 studies on the effects of lavender oil aromatherapy in the postpartum period found that the lavender oil aromatherapy used in this period had effects on decreasing pain, preventing anxiety, and increasing sleep quality.[30] Similarly, Hadi and Hanid[19] found that the VAS mean scores of women in the experimental group who were administered lavender were lower in comparison to the women in the control group.[19] Vaziri et al.[20] found that women administered lavender experienced less perianal and physical pain compared to the women in the control group.[20] The literature includes various studies that support the findings of this study.[11,18] The results of this study and the ones in the literature show that lavender oil aromatherapy can be used as an effective method of decreasing pain in the postpartum period. Lavender oil aromatherapy should be used more commonly to help mothers adapt to the process and decrease the adverse effects of pharmacological methods.

This study found that the SAI mean scores of the groups demonstrated no statistically significant differences in the 2nd phase, but significant differences were detected in the 3rd and 4th phases and their anxiety decreased. Kianpour et al.[31] followed up on women in the 2nd week, 1st month, and 3rd month of the postpartum period.[31]Women in the lavender oil aromatherapy group were reported to experience less anxiety, stress, and depression in the postpartum period in comparison to the women in the control group. The findings reported by Effati Daryani et al.[32] also support the findings in this study.[32] In line with the research findings, Burgess, Harris and Wheeling[33] found that pain and anxiety decreased in women in the lavender group.[33] It could also be useful for eliminating women's anxiety during the postpartum period.

In the first hours of the postpartum period, the mother can become more adequate in terms of meeting her baby's needs and her comfort can increase if her pain is decreased, if her hygienic needs are met, if she can stand up, if she starts normal nutrition pattern, if she is supported in terms of the baby's care, etc. Significant differences were found in the experimental group women's physical comfort, socio-cultural comfort, and PCS total mean scores and the placebo group women's physical comfort mean scores according to the processes (P<.05). No significant differences were detected between the experimental, control, and placebo groups in the 2nd, 3rd, and 4th-phase socio-cultural comfort, psycho-spiritual comfort, and PCS total mean scores. The literature was found to include no studies that investigated the effects of lavender oil aromatherapy on postpartum comfort. Çankaya and Ratwisch[34] investigated the effects of reflexology on postpartum comfort and found that socio-cultural comfort, psycho-spiritual comfort, and PCS mean scores were higher and comfort increased in women in the experimental group.[34] Güney and Uçar[35] reported that women who were given deep tissue massage in the postpartum period had better comfort in comparison to the women in the control group.[35] The findings of this study are in line with the literature. In addition the lack of difference between the groups in the study is thought to be due to the fact that women's views on childbirth, pain and care are different. In addition, comfort is a concept that affects women in many ways, and we believe that the short-term effect of the aromatherapy applied may have been affected.

Limitations of the Study

This study clearly has some limitations. One is that the findings are not generalizable to all women because the study was conducted in only one hospital. Despite these limitations, we believe our study can serve as a springboard for further research on pain and anxiety management and comfort levels after cesarean sections. The research objective and inclusion/exclusion criteria were clearly stated and the sample selection process carried out was based on CONSORT criteria. Moreover, the results were evaluated objectively and were not biased.

Lavender oil effects of lavender oil aromatherapy starting in the first hours of the postpartum period resulted in better physical and mood status compared to the nonaromatic group. Effects of lavender oil aromatherapy may be considered for women during the postpartum period. This study found that the use of lavender oil created a significant result compared to other groups. Study results showed that aromatherapy was effective in reducing pain and anxiety and increasing comfort. Thus, there may be insufficient clinical evidence to support the practical application of these aromatherapies on postpartum

women. Further studies using larger samples and better quality in terms of methodology and end points are necessary to build on current findings.

Etik Komite Onayı: Bu çalışma için Çukurova Üniversitesi Etik Kurulu'ndan etik kurul onayı alınmıştır. Tarih: 8 Mart 2019, Karar Numarası: 86/8
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REFERENCES

1. Isguder YE, Bulut G, Yılmaz HY, et al. Cesarean section rate sand ındications in our clinic between 2014-2016. *The Journal of Gynecology Obst and Neonat.* 2017; 14(4):168-171.
2. Demirbaş M, Karabel MP, Inci MB. Changing grates of cesarean section in Turkey and in the world and probable causes. *Sakarya Med Journal*. 2017; 7(4):158-163.
3. Martin JA, Hamilton BE, Osterman MJ, et al. Final Data For 2015. *Natl Vital Stat Rep*. 2015;64:1-65.
4. Department of Reproductive Health and Research, WHO Statement on cesarean birth rates, World Health Organization 2015. http://apps.who.int/iris/bitstream/handle/10665/161442/WHO_RHR_15.02_tur.pdf;jsessionid=02A6AA432831C3FBB5925C4F88F5CE4B?sequence=11(accessed 06.09.2024
5. Yanıkkerem E, Karakuş A. Vaginal birth after caesarean: guidelines according to some countries. *JERN.* 2016;13(2):79-87.
6. Ministry of Health. Health Statistics Yearbook News Bulletin, 2017. Https://Dosyamerkez.Saglik.Gov.Tr/Eklenti/27344,Saglik-İstatistikleri-Yilligi-2017-Haber-Bultenipdf.Pdf?0 (accessed 06.09.2024)
7. Ulgu MM, Birinci S, Ensari TA, Gözükara MG. Cesarean section rates in Turkey 2018-2023: Overview of national data by using Robson ten group classification system. *Turk J Obstet Gynecol.* 2023;*20*(3):191. https://doi.org/10.4274/tjod.galenos.2023.68235
8. WHO. Caesarean section rates continue to rise, amid growing inequalities in Access. https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access (accessed 06.09.2024)
9. Susan M, Knapp H, Borucki L, et al. Major concerns of women after cesarean delivery. *J Obstet Gynecol Neonatal Nurs.* 2013;(1):53-59. https://doi.org/10.1111/j.1552-6909.1994.tb01850.x
10. Astepe BS. The relationship between preoperative anxiety level and postoperative pain in patients with cesarean section. *Kocaeli Med J.* 2018; 7(3):64-69.
11. Pujiati W, Julia DSH, Wahyu A. Lavender lavender oil scent to reduce the intensity of post section caesarian pain. *IJSR*. 2018;7(11):415-418. https://doi.org/10.21275/ART20192492
12. Borges NC, Silva BC, Pedroso CF, et al. Postoperative pain in women undergoing caesarean section. *Enfermería Global.* 2017; 16(4):374-383. https://doi.org/10.1155/2016/5783817
13. Çapık A, Özkan H, Apay SE. Determination of affecting factors and postnatal comfort levels of postpartum women. *DEUHYOED.* 2014; 7(3):186-192.
14. Janssen AB. Persistence of anxiety symptoms after elective caesarean delivery. *BJPSYCH Open.* 2018;4(5):354-360. https://doi.org/10.1192/bjo.2018.48
15. Taşkın, L. Obstetrics and Women's Health Nursing. 1st Edition, Akademisyen Medical Bookstore. 2016;460-498.
16. Özveren H. Non-pharmacological methods at pain management. *Hacettepe University Faculty of Health Sciences Nursing Journal*. 2011;18(1):083-092.
17. Ali E. Women's experiences with postpartum anxiety disorders: a narrative literatu re review. *Int J Womens Health*. 2018; 10:237–249. https://doi.org/10.2147/IJWH.S158621
18. Metawie MAH, Amasha HAR, Abdraboo RA, et al. Effectiveness of lavender oil scent with lavender oil in relieving post caesarean incision pain. *J of Surgery*. 2015; 3(2-1):8-13. https://doi.org/10.11648/j.js.s.2015030201.1
19. Hadi N, Hanid AA. Lavender essence for post-cesarean pain. *Pakistan J of Biological Sci.* 2011; 14(11):664.
20. Vaziri F, Shiravani M, Najib FS, et al. Effect of lavender oil aroma in the early hours of postpartum period on maternal pains, fatigue, and mood: a randomized clinical trial. *Int J Prev Med.* 2017;8:29. https://doi.org/10.4103/ijpvm.IJPVM_137_16
21. Lee MS, Choi J, Posadzki P, et al. Lavender oil scent for health care: an overview of systematic reviews. *Maturitas*. 2012;71:257-60.
22. Using Aromatherapy in Your Clinical Practice 2020 https://www.nursesfornaturalhealth.org/blog/2020/3/9/

using-aromatherapy-in-your-clinical-practice
23. Özkaraman A, Dügüm Ö, Yılmaz HÖ, et al. Aromatherapy. *CJON.* 2018; 22(2):203-210. https://doi.org/10.1188/18.CJON.203-210
24. Eti Aslan F. The assessment methods of pain. *C.Ü. Journal of the School of Nursing.* 2002; 6 (1) : 429 9-16.
25. Karcioglu O, Topacoglu H, Dikme O, et al. A systematicreview of the pain scales in adults: Which to use? *Am J Emerg Med*. 2018;36(4):707-714. https://doi.org/10.1016/j.ajem.2018.01.008
26. Öner N, Compte A. State-trait anxiety inventory, Handbook. 2. Print Boğaziçi University Publications, Istanbul,1995.
27. Karakaplan S, Yıldız H. A study on developing a postpartum comfort questionnaire. *Maltepe University Journal of Nursing Science and Art*. 2010; 3(1):55-65.
28. The National Association for Holistic Aromatherapy (NAHA) https://naha.org/explorearomatherapy (accessed 06.09.2024)
29. Ministry of Health, General Directorate of Public Health. Postpartum car management guide. 2018. https://Kirklareliism.Saglik.Gov.Tr/Eklenti/115526/0/Dogum-Sonu-Bakim-Rehberi-2018pdf.Pdf (accessed 06.09.2024)
30. Thai SS, Wang HH, Chou FH. The effects of lavender oil scent on postpartum women: a systematic review. *J Nurs Res.* 2020;28(3):1-11. https://doi.org/10.1097/jnr.0000000000000331
31. Kianpour M, Mansouri A, Mehrabi T, Asghari G. Effect of lavender scent inhalation on prevention of stress, anxiety and depression in the postpartum period. *Iran J Nurs Midwifery Res.* 2016;21(2):197–201. https://doi.org/10.4103/1735-9066.178248
32. Effati Daryani F, Charandabi S, Zarei A, et al. Effect of lavender cream with or without footbath on anxiety, stress and depression of women in postpartum: A clinical randomized controlled Trial. *Iran J Obstet Gynaecol India.* 2017; 20(10):52–61. https://doi.org/10.5681/jcs.2015.007
33. Burgess A, Harris A, Whelling J. A pilot randomized control trial to assess the impact of lavender on anxiety and comfort after cesarean birth and the barriers encountere. *MCN Am J Matern Child Nurs*. 2022; 47(2): 85-91 https://doi.org/101097/NMC.0000000000000803
34. Çankaya S, Ratwisch G. The effect of reflexology on lactation and postpartum comfort in caesarean-delivery primiparous mothers: A randomized controlled study. *Int J Nurs Pract*. 2020; 26 (3). https://doi.org/10.1111/ijn.12824
35. Güney E, Uçar T. Effects of deep tissue massage on pain and comfort after cesarean: A randomized controlled trial. *Complement Ther Clin Pract*. 2021;43:101320. https://doi.org/10.1016/j.ctcp.2021.101320

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Caring Behaviour Perceived by Nursing Students; Gender Perspective

Hemşirelik Öğrencilerinin Algıladığı Bakım Davranışı; Cinsiyet Perspektifi

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ABSTRACT

Objective: This study aims to determine the care perceptions of nursing students according to the gender perspective.

Methods: This study is a cross-sectional, quantitative, and descriptive comparative study. In this study, the total sample of nursing students (n=495), consisting of Turkish students (n=334) and International students (n=161) from class/year one to four in the Faculty of Nursing were analysed. The data of the study were collected using the Student Assessment Forms and the Care Behavior Inventory and evaluated by IBM SPSS version 22.0. Nurses' and patients' caring behavior perceived by nursing students and other related factors were compared using both inferential and descriptive statistics.

Results: In this study, 69.9% of the participants were female, 30.1% were male. While the total score of the female nursing students was 5.23±0.69, the score of the male nursing students was 5.18±0.81. The difference between the total and subgroups' score of the students according to their gender was not statistically significant. But, there is significant difference in the sub-dimensions of the scale according to the gender of the participants with some characteristics.

Conclusion: In this study, no significant difference was found between gender and perception of care in the scale total mean score of the participants. However, when some subgroups were analyzed according to gender, significant differences were found. In addition, the mean scores of female students were higher than those of male students.

Keywords: Nursing, Nursing Care, Nursing Students, Gender

ÖZ

Amaç: Bu çalışmanın amacı hemşirelik öğrencilerinin cinsiyete göre bakım algılarını belirlemektir.

Yöntemler: Bu çalışma kesitsel, nicel ve tanımlayıcı karşılaştırmalı bir çalışmadır. Bu çalışmada Hemşirelik Fakültesi'nde birinci sınıftan dördüncü sınıfa kadar öğrenim gören Türk öğrenciler (n=334) ve uluslararası öğrencilerden (n=161) oluşan toplam hemşirelik öğrencisi (n=495) örneklemi analiz edildi. Çalışmanın verileri Öğrenci Değerlendirme Formları ve Bakım Davranışı Envanteri kullanılarak toplandı ve IBM SPSS sürüm 22.0 ile değerlendirildi. Hemşirelik öğrencileri tarafından algılanan hemşirelerin ve hastaların bakım davranışları ve diğer ilgili faktörler hem çıkarımsal hem de tanımlayıcı istatistikler kullanılarak karşılaştırıldı.

Bulgular: Çalışmada katılımcıların %69,9'u kadın, %30,1'i erkektir. Kadın hemşirelik öğrencilerinin toplam puanı 5,23±0,69 iken, erkek hemşirelik öğrencilerinin puanı 5,18±0,81'dir. Öğrencilerin cinsiyetlerine göre toplam ve alt grupların puanları arasındaki fark istatistiksel olarak anlamlı değildir. Ancak bazı özellikler açısından katılımcıların cinsiyetlerine göre ölçeğin alt boyutlarında anlamlı fark vardır.

Sonuç: Bu çalışmada katılımcıların ölçek toplam puan ortalamalarında cinsiyet ve bakım algısı arasında anlamlı bir fark bulunmamıştır. Ancak bazı alt gruplar cinsiyete göre incelendiğinde anlamlı farklılıklar bulunmuştur. Ayrıca kadın öğrencilerin puan ortalamaları erkek öğrencilere göre daha yüksektir.

Anahtar Kelimeler: Hemşirelik, Hemşirelik Bakımı, Hemşirelik Öğrencileri, Cinsiyet

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INTRODUCTION

The concept of care is accepted as the basic element of nursing by nurses, who constitute the most crowded members of the health system.[1] It is believed that the care approach that nurses apply to their patients improves the health and well-being of patients and facilitates health promotion. Care is a difficult concept to define as it is a prime example of emotion, thought, and action that combines to provide both physical and emotional comfort.[2] When the concept of care is mentioned, nurses who provide professional care are the leading people who provide care as a profession. Since the emergence of humanity, nursing has changed and developed in parallel with the developing living conditions to improve and maintain health.[3] However, the only thing that does not change in the field of nursing is the concept of care giving. In this context, nursing care is the most basic role unique to nursing.[4]Nursing care is a basic structure founded on protecting and improving the health of individuals and curing existing diseases. Nursing care has a broad scope that includes feelings, moral values, professional knowledge, and skills. Roach has specified and explained the features of care as five "C". According to Roach, these features are Compassion, Competence, Confidence, Conscience, and Commitment.[5]

Although the concept of care does not contain a gender expression, it has historically been identified with the female gender. The nursing profession and nursing care which are one of these jobs is also known as a female profession in most societies.[6] Contrary to this popular belief, nurses have always been men throughout history, starting with helping the sick, injured, and destitute. During the Byzantine and Roman periods, male nurses were responsible for the health of especially knights and soldiers in the Middle Ages before that. They carried out the first organized patient care services in monasteries with men called “deacons” and women called “deaconesses”.[7] During the American Civil War (1861), female nurses took charge alongside male nurses and took care of the wounded. After the end of the war, women began to become more interested in health and medicine. With the establishment of the Nursing Unions consisting of women in the US Army in 1941, the nursing profession has started to be completely dominated by women.[8] Florence Nightingale (1820-1910), who experienced this transformation in Europe during the First World War, became the most important figure of nurses, and nursing began to be perceived as a female profession. Thus, nursing has become an area dominated by women in social perception.[9]

Occupational distinctions and differences related to gender roles have persisted throughout history in every society around the world. However, in the contemporary era, gender discrimination in the nursing profession has disappeared, and men have the opportunity to freely practice this profession.[10]

Although there are many studies in the literature on how care is perceived by nursing students, only a few of these examined care perceptions by gender. [11-14] In some countries, gender is still one of the dominant criteria in the nursing profession. To have an in-depth examination of the dominant "female profession" perception in the nursing profession, this study could give insight into the caring literature.

AIM

This study aims to determine the care perceptions of nursing students according to the gender perspective.

METHODS

Study Design

This study type is cross-sectional, quantitative, and descriptive.

Study Setting

This faculty, which has the title of the first and only nursing faculty in Northern Cyprus, provides theoretical education in different branches such as Nursing Principles and Nursing Management, Child Health and Diseases Nursing, Internal Medicine Nursing, as well as providing education to students with its equipped laboratories and materials. It has 250 international students and 550 Turkish students. On the other hand, the faculty of nursing has an intercultural education opportunity with its faculty members from different countries. In this respect, the faculty offers both students and academic staff the opportunity to experience cultural differences as a unique advantage.

Sample Selection

G*Power 3.1.9.7 statistical program was used to determine the sample size of the study. In this process, when the significance level was calculated as .05, the power of 80% and the effect size as 0.25,[15] the sample number was determined to be 216. In this study, a total of 495 nursing students voluntarily agreed to participate in the study and the research was carried out. This study was conducted with (n=334) Turkish students and (n=161) international students, most of whom came from African countries.

Data Collection

The data of the study were collected using the Student Assessment Forms and the Care Behavior Inventory. Questionnaires were filled face-to-face in the classroom within 15-20 minutes for both Turkish and international students according to their education at the Faculty of Nursing. In the study, "Student Assessment Forms" developed by the researchers in Turkish and English were presented to the participants. On the other hand, since the validity and reliability study of the "Care Behavior Inventory" scale was conducted in both languages, it was used in both languages as appropriate for the participants.

Study Tools

Student Assessment Forms

This form was developed by researchers through analysing the literature in both languages which are Turkish and English to identify the characteristics of the nursing students with five questions. These five questions were gender, age, nationality, marital status, family type, work experience, choice of being a nursing student, if have any option still to choose nursing, the person cared for, cared for someone before, confidence in understanding patients' feelings, have children.

Caring Behaviors Inventory (CBI-24)

This scale prepared by Wu et al.[16] is the short form of "Care Behaviors Inventory-42 (Caring Behaviors Inventory-42)" containing 42 items suitable for bidirectional diagnosis by patients and nurses developed by Wolf et al.[16,17] The scale was adapted to Turkish by Şerife Kurşun and Nevin Kenan in 2012 and its validity and reliability study was carried out.[18]

The CBI- 24 including the four sub-groups consisting of 24 items 6-point Likert-type scale (1 = never, 2 = almost never, 3 = occasionally, 4 = usually, 5 = almost always, 6 = always) (Assurance; 8 items= 16,17,18,20,21,22,23,24, Knowledge and Skills; 5 items = 9,10,11,12,15, Respect; 6 items = 1,3,5,6,13,19) and Connectedness; 5 items = 2,4,7,8,14). As the score increases, the perception of care also increases. In this study, the total Cronbach alpha of the CBI – 24 was calculated as 0.95.

Data Analysis

IBM SPSS version 22.0 (IBM SPSS Corp., Armonk, NY, USA) was used in the analysis of the data. The conformity of the data to the normal distribution was evaluated using the Shapiro-Wilks test and it was determined that the data were not normally distributed. Descriptive statistics: percentage and frequency and mean were used in the evaluation of the data. Mann-Whitney U analysis was used to compare two groups and Kruskal-Wallis analysis was used to compare more than two groups. In this study, the level of significance was accepted as 0.05.

Ethical Aspect

To proceed with this study, necessary institutional permissions were obtained from the Near East University Institute of Health Sciences (project no: NEU/2018/62-650) and the Faculty of Nursing (reference no:765/20158) to carry out this research.

Additionally, necessary permissions were obtained from the authors in order to use both the Turkish version and the original version of the Caring Behaviors Inventory (CBI – 24). In this study, the participants were informed before the research and their consent was obtained after they were informed that their data would be confidential. This research was conducted in accordance with the principles of the Helsinki Declaration.

RESULTS

Table 1 is examined it was stated that; 69.9% of the participants were female, 30.1% were male, the mean age of women was 21.12 ± 2.92 years, 30.50% of them are Turkish women, 15.95% of them are Turkish men, 68.88% were single women and 51.71% were women living in a nuclear family.

Table 2 is examined the total score of the female nursing students was 5.23 **±** 0.69, the score of the male nursing students was 5.18 **±** 0.81. The difference between the total and subgroups' score of the students according to their gender was not statistically significant ($P > .05$).

Table 3 is examined, a statistically significant difference was found between caretaker and confidence in understanding patients' feelings by gender in women, and between the type of family and confidence in understanding patients' feelings by gender in men ($P < .05$).

Table 4 shows the comparison between some characteristics of the participants, the sub-dimensions of the scale, and the total score. According to the table; a statistically significant difference was found in women, between having children and respect and connectedness scores; between caring for someone before and assurance and respect scores; between the choice of being a nursing student and respect and total scores; between all sub-dimensions except assurance and total scores with if have any option still to choose nursing and between confidence in understanding patients feelings and all sub-dimensions and total scores ($P < .05$).

Table 1. Distribution of Participants' Sociodemographic Characteristics (n=495)

Variables		n	%
Gender	Female	346	69.9
	Male	149	30.1
Age	Female	21.12±2.92	
	Male	21.95±3.98	
Nationality			
Turkish	Female	151	30.50
	Male	79	15.95
Turkish Cypriot	Female	73	14.74
	Male	28	5.65
Nigerian	Female	59	11.91
	Male	22	4.44
Zimbabwean	Female	43	8.68
	Male	15	3.03
Others	Female	20	4.04
	Male	5	1.01
Marital Status			
Married	Female	5	1.01
	Male	6	1.21
Single	Female	341	68.88
	Male	143	28.88
Family Type			
Nuclear	Female	256	51.71
	Male	97	19.59
Extended	Female	66	13.33
	Male	35	7.06
Single parent	Female	24	4.84
	Male	17	3.43

According to the table, a statistically significant difference was found in men; between work experience and respect, connectedness and total scores; between the choice of being a nursing student and all sub-dimensions and total scores; between the type of family and all sub-dimensions except respect and total scores; between confidence in understanding patients feelings and respect, connectedness and total scores ($P< .05$).

DISCUSSION

Nurses, who are essential actors for the health system and constitute the largest group, are defined as professionals who play an important role in protecting and improving the health of individuals and giving care to them when they are sick. In this context, the essence of the nursing profession is giving care. Until recently, nursing was perceived as a profession specific to women with a gender perception. This perception partially continues today and is still effective although the change has begun.[19]

Through the analysis of the literature, it was determined that the students' perceptions of care behavior were at a good level in the study conducted by Konuk and Tanyar[20] with the participation of 530 nursing students, and in the descriptive study by Birimoğlu and Ayaz[21] involving 342 nursing students.[20,21] In addition, in the study by Aupia et al.[22] which nurses, patients, and students evaluated the perception of care, it was found that the student nurses perceived the care as quality.[22] In this study, when nursing students' perceptions of care behaviors were examined according to the mean score they received from the scale; considering that the highest score that can be obtained from the scale is "6"; it can be concluded that the mean score of the students is high and their gender affects this score within itself. When the perception of nursing care with student nurses was examined in the literature, it was stated that care behaviors did not change according to gender. [23-25] Similarly, in the study of Labrague et al.,[26] in which 467 student nurses from four countries were sampled, it was stated that gender did not have an effect on the perception of care.[26] In this study, in parallel with the literature, it was found that the gender factor did not affect the perception of care behaviors. This situation can be interpreted as nursing students can eliminate gender roles while giving care.

Table 2. The Comparison of Students' CBI-24 Mean Scores by Genders

Gender	Scale Total X±SD	Assurance X±SD	Knowledge and Skill X±SD	Respect X±SD	Connectedness X±SD
Female	5.23±0.69	5.36±0.73	5.14±0.84	5.30±0.72	5.05±0.85
Male	5.18±0.81	5.27±0.87	5.21±0.82	5.18±0.90	5.03±0.90
U*	25432.00	24879.000	24500.000	24158.000	25647.500
P	.893	.603	.377	.264	.929

U*; Mann Whitney U, X; Mean, SD; Standard deviation

Table 3. Comparison of Participants' Characteristics by Gender

Variables		Female		Male	
		X^2	*P*	X^2	*P*
Type of Family	Nuclear Extended Single Parent Others	4.23	.37	9.32	***.02***
Caretaker (Whom Have Cared For)	Mother Father Grandmother Grandfather Others	51.44	***.01***	18.15	.15
Confidence in Understanding Patients' Feelings	Every time Sometime Never	9.14	***.01***	6.03	***.04***

X^2: Kruskal Wallis

In the study conducted by Kılıç et al.[27] with the participation of 2nd year nursing students and using the same scale, it was determined that student nurses got the highest score in the knowledge and skill sub-dimension.[27] In another study conducted with nursing students, when the sub-dimension mean scores were examined, it was found that the highest mean score was in the knowledge and skill sub-dimension, and the lowest mean score was in the commitment sub-dimension.[28]. Contrary to the literature, in this study, it was determined that the highest sub-score in both genders was in the assurance sub-dimension. The lowest-scored sub-dimension was found to be adherence, similar to the literature. The reason for the difference in the highest sub-dimension score compared to the literature can be interpreted by the fact that the sample of this study consists of students from Turkey and African countries, and the male-dominated structure in social life in these countries.

In the study conducted by Dığın and Kızılcık Özkan[28] in 2021, it was determined that the mean score of the scale did not vary according to family type in undergraduate education.[28] Similarly, Birimoğlu and Ayaz[21] found in their study that perceptions of care behavior were not affected by family type.[21] Contrary to the literature, in this study, a statistically significant difference was found between family type and perception of care provided that it was only in males. On the other hand, in this study, unlike other studies, the variables of caretaker and confidence in understanding patients' feelings were also evaluated, and a significant difference was found for the caretaker variable only in women, and confidence in understanding patients' feelings in both genders. When these results and the literature are examined, it is possible to state that there is a need for further studies to evaluate the effect of family type on the perception of care.

There are many factors affecting the perception of care in nursing.[29] These include topics such as having a child, working experience, and choosing a profession. In this study, a statistically significant difference was found between some factors affecting nursing students' perceptions of care and the total score of the Caring Behaviors Inventory. Of these factors; a statistically significant difference was found between if have any option still choose nursing between women only and total score; between work experience and type of family only between men and total score; between both genders and the total score in the factors of choice of being a nursing student and confidence in understanding patients feelings.

Limitations

The study was limited to students in a single faculty and results may not be generalizable to a larger population. Furthermore, the fact that the research sample could not be evaluated in two separate groups as national and international students can be shown as another limitation of the study.

In this study, although the participants were from Turkey and African countries where the male-dominated cultural structure is dominant, no significant difference was found between gender and perception of care in the total score average of the scale. On the other hand, the fact that female students have higher average scores on the scale than male students reveals that the gender variable has an effect on the perception of care. Another conclusion of this study is that there is a significant difference in the sub-dimensions of the scale according to the gender of the participants with some characteristics. It is recommended to conduct further studies by using qualitative methods in order to determine the relationship between gender and perception of care in this area.

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REFERENCES

1. Wolf ZR, Byrne D, Hanson-Zalot M. Undergraduate nursing students' caring behaviors: A cross-sectional study. *Int J Hum Caring.* 2018;22(4):199-208. https://doi.org/10.20467/1091-5710.22.4.199
2. Persaud S, Thornton M. Developing caring behaviors in undergraduate nursing students through simulation. *Int J Hum Caring*. 2018;22(2):26-33. https://doi.org/10.20467/1091-5710.22.2.26
3. Asmirajanti M, Hamid AY, Hariyati R, Sri T. Nursing care activities based on documentation. *BMC Nurs.* 2019;18(1):1-5. https://doi.org/10.1186/s12912-019-0352-0
4. Egenes KJ. I*ssues And Trends in Nursing: Essential Knowledge for Today and Tomorrow.* 2nd ed. Burlington, MA: Jones&Martlett Learning; 2017.
5. Roach MS. *Caring: The human mode of being. Caring in nursing classics: An essential resource.* 2nd ed. New York, NY: Springer International Publishing; 2013.
6. Galbany-Estragués P, Comas-d'Argemir D. Care, autonomy, and gender in nursing practice: A historical study of nurses' experiences. *J Nurs Res*. 2017;25(5):361-367. https://doi.org/10.1097/JNR.0000000000000184
7. Legath JW. *Sanctified Sisters: A History of Protestant Deaconesses*. 1st ed. New York, NY: New York University Press; 2019.
8. Choperena A, Fairman J. Louisa May Alcott and Hospital Sketches: An innovative approach to gender and nursing professionalization. *J Adv Nurs*. 2018;74(5):1059-1067. https://doi.org/10.1111/jan.13510
9. Pfettscher SA. Nursing Theorists and Their Work.10th ed. St. Louis, MO: Elsevier; 2021.
10. Hodges EA, Rowsey PJ, Gray TF, et al. Bridging the gender divide: Facilitating the educational path for men in nursing. *J Nurs Educ*. 2017;56(5):295-299. https://doi.org/10.3928/01484834-20170421-08
11. Liu NY, Hsu WY, Hung CA, Wu PL, Pai HC. The effect of gender role orientation on student nurses' caring behaviour and critical thinking. *Int J Nurs Stud.* 2019;1(89):18-23. https://doi.org/10.1016/j.ijnurstu.2018.09.005
12. Ghadi IN, Bakar KA, Alwi NH, Talib O. Gender analysis of critical thinking disposition instrument among University Putra Malaysia undergraduate students. *JRTE. 2012;33(1):7-33.*
13. Khademian Z, Vizeshfar F. Nursing students' perceptions of the importance of caring behaviors. *J Adv Nurs*. 2008;61(4):456-462. https://doi.org/10.1111/j.1365-2648.2007.04509.x
14. Laurella VB. Gender Trait Differences And Nursing Caring. Dissertation. University of Utah; 1997.
15. Faul F, Erdfelder E, Buchner A & Lang AG. Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behav Res*. 2009;*41*(4):1149-1160. https://doi.org/10.3758/BRM.41.4.1149
16. Wu Y, Larrabee JH, Putman HP. Caring behaviors inventory: A reduction of the 42-item instrument. *Nurs Res.* 2006;55(1):18-25. https://doi.org/10.1097/00006199-200601000-00003
17. Robinson Wolf, Z, Dillon PM, Townsend AB, Glasofer A. Caring Behaviors Inventory-24 revised: CBI-16 *Validation and Psychometric Properties*. *Int J Hum Caring*. 2017;*21*(4):185-192. https://doi.org/10.20467/1091-5710.21.4.185
18. Kursun S, Kanan N. Validity and reliability study of the Turkish version of caring behaviors inventory-24. *J Anat Nurs Health Sci*. 2012;15(4):229-235. https://dergipark.org.tr/tr/pub/ataunihem/issue/2659/34332
19. Marć M, Bartosiewicz A, Burzyńska J, Chmiel Z, Januszewicz P. A nursing shortage–a prospect of global and local policies. *Int Nurs Rev.* 2019;66(1):9-16. https://doi.org/10.1111/inr.12473
20. Konuk, T, Tanyar, D. Investigation of nursing students' perception of caring behaviors. *J Caring Sci*. 2019;8(4):191-197. https://doi.org/10.15171/jcs.2019.027
21. Birimoğlu C, Ayaz S. Nursing Students' Perceptions of Caring Behaviors. *J Hacet Univ Fac Nurs*. 2015;2(3):40-48. https://dergipark.org.tr/en/download/article-file/330801
22. Aupia A, Lee TT, Liu CY, Wu SF, Mills ME. Caring behavior perceived by nurses, patients and nursing students in Indonesia. *J Prof Nurs*. 2018;34(4):314-319. https://doi.org/10.1016/j.profnurs.2017.11.013
23. Fenizia E, Navarini L, Scollo S, Gambera A, Ciccozzi M. A longitudinal study on caring behaviors of Italian nursing students. *Nurse Educ Today.* 2020;88(1):104377. https://doi.org/10.1016/j.nedt.2020.104377
24. Lambert-Davis JD. Caring Behaviors of Nursing Students and their Attitudes Toward Older Adults. Dissertation, Case Western Reserve University;2017.
25. Trinidad MF, Pascual JL, García MR. Perception of caring among nursing students: Results from a cross-sectional survey. *Nurse Educ Today*. 2019;83(1):104196. https://doi.org/10.1016/j.nedt.2019.08.014

26. Labrague LJ, McEnroe-Petitte DM, Papathanasiou IV, Edet OB, Arulappan J, Tsaras K. Nursing students' perceptions of their own caring behaviors: a multicountry study. *Int J Nurs Knowl.* 2017;28(4):225-232. https://doi.org/10.1111/2047-3095.12108
27. Kilic M. Students' perceptions of nursing care: the case of a city of south Turkey. *Int J Caring Sci*. 2018;11(1):402. https://internationaljournalofcaringsciences.org/docs/46_kilik_original_11_1.pdf
28. Dığın F, Kızılcık Özkan Z. Determination of nursing students' perceptions of care behavior. *Gevher Nesibe Journal of Medical & Health Sciences.* 2021;6(10):16-21. https://doi.org/10.46648/gnj.155
29. Rasmussen P, Henderson A, Andrew N, Conroy T. Factors influencing registered nurses' perceptions of their professional identity: An integrative literature review. *J Contin Educ Nurs.* 2018;49(5):225-232. https://doi.org/10.3928/00220124-20180417-08

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Metaphorical Perceptions of Operating Room Staff Towards the Concept of Pressure Ulcer: A Qualitative Study

Ameliyathane Çalışanlarının Basınç Yarası Kavramına Yönelik Metaforik Algıları: Nitel Bir Çalışma

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ABSTRACT

Objective: To explain the perceptions of the operating room staff about pressure ulcers through metaphors.

Methods: A descriptive qualitative research design was used. In the study, it was aimed to reach the entire universe, not choosing a sample. A total of 83 operating room staff participated in the study which 45 of them were operating room nurses, 38 of them were anesthesia technicians. The data were collected face to face with the descriptive features form and semi-structured interview form created by the researchers. In the semi-structured interview form, the operating room workers were asked to complete the sentence “Pressure ulcer is like ... because ...”. The data were analyzed with the "content analysis" method, which is one of the qualitative analysis methods.

Results: Operating room staff generated a total of 25 types of metaphors for the concept of pressure ulcers and expressed 83 opinions for them. The first five most mentioned metaphors by the operating room staff were icebergs, matryoshka, storm after a sunny day, swamp, garden care and cracked vase, respectively. 19 of these metaphors were repeated nine to two times, and six of them were repeated once.

Conclusion: Metaphors can be used as a powerful research tool in understanding and revealing the cognitive images of operating room staff regarding the concept of pressure ulcers. This study gives clues about how operating room staff imagine the concept of pressure ulcer.

Keywords: Operating Room, Metaphor, Pressure Ulcer, Operating Room Staff, Qualitative Research

ÖZ

Amaç: Ameliyathane çalışanlarının basınç yarasına ilişkin algılarını metaforlar aracılığıyla açıklamak.

Yöntemler: Araştırmada nitel araştırma deseni kullanıldı. Çalışmada örneklem seçimine gidilmeyerek evrenin tamamına ulaşılması hedeflendi. Çalışmaya 45'i ameliyathane hemşiresi, 38'i anestezi teknisyeni olmak üzere toplam 83 ameliyathane çalışanı katıldı. Veriler araştırmacılar tarafından oluşturulan tanımlayıcı özellikler formu ve yarı yapılandırılmış görüşme formu ile yüz yüze toplandı. Yarı yapılandırılmış görüşme formunda ameliyathane çalışanlarından “Basınç yarası ... gibidir, çünkü ...” cümlesini tamamlamaları istendi. Veriler nitel analiz yöntemlerinden biri olan “içerik analizi” yöntemi ile analiz edildi.

Bulgular: Ameliyathane çalışanları basınç yarası kavramı için toplam 25 farklı metafor üretti ve bunlar için 83 görüş bildirdi. Ameliyathane çalışanları tarafından en çok dile getirilen ilk beş metafor sırasıyla buzdağı, matruşka, güneşli bir günün ardından gelen fırtına, bataklık, bahçe bakımı ve kırık vazo oldu. Bu metaforlardan 19'u dokuz ila iki kez, altısı ise bir kez tekrarlandı.

Sonuç: Metaforlar, ameliyathane çalışanlarının basınç yarası kavramına ilişkin bilişsel imgelerini anlamada ve ortaya çıkarmada güçlü bir araştırma aracı olarak kullanılabilir. Bu çalışma, ameliyathane çalışanlarının basınç yarası kavramını nasıl algıladığına yönelik ipuçları vermektedir.

Anahtar Kelimeler: Ameliyathane, Metafor, Basınç Yarası, Ameliyathane Çalışanı, Nitel Araştırma

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INTRODUCTION

Pressure ulcer is a universal problem that should be prevented because it increases care costs, prolongs hospital stay and requires an extended treatment process. It is also an indicator of poor quality care and its prevention continues to be a problem despite technological developments and advances in care and treatment.[1-4] Pressure ulcers are generally defined as localized damage to the skin or deep tissues over a bony prominence or in association with a medical device or other device. Having surgery is a significant risk for developing pressure ulcer.[4] Pressure ulcers originating from the operating room are defined by the Association of periOperative Registered Nurses (AORN) as a pressure ulcer that develops within the first 48-72 hours after surgery.[5] It is recommended by AORN that every patient undergoing surgery should be evaluated in terms of risk factors that may lead to pressure ulcer development.[6] In literature many factors play a role in the development of pressure ulcers and that pressure ulcers originating from the operating room had an incidence of 1.3% and 54.8%.[7] In the study by Özdemir et al. it was determined that 8.4% of the patients developed pressure ulcers during surgery, while 11.8% of the pressure ulcers observed in 11.8% of the patients were related to the use of medical devices/tools and 23.5% were related to positioning materials.[8]

According to the literature, the surgical team should cooperate to prevent pressure ulcers that may develop in the operating room and the awareness of the surgical team should be increased by planning annual trainings.[6,9] Since patients under general anesthesia can't communicate when they experience pain or discomfort, and patients under regional anesthesia will not feel pain, it is among the duties of the surgical team to protect them from injuries caused by inappropriate positions.[10] Multidisciplinary teamwork, assessment of risk factors and planning process are important in the prevention of operating room pressure ulcer.[6,9] All healthcare professionals working in the operating room should be aware of the factors that pose a risk for operating room pressure ulcer and should implement all necessary interventions to prevent them.[6,9] Therefore how the concept of pressure ulcers looks from the perspective of operating room staff affects the care of patients during the surgery process. Although there are studies conducted on the occurrence of pressure ulcers in the operating room and associated risk factors in the literature, no study has been found that evaluates the perceptions of operating room staff towards the concept of pressure ulcers. Increasing the awareness of the operating room staff on the subject and revealing their perspectives are important for determining the content of the trainings to be given and drawing a road map for what to do.

AIM

The aim of this study is to explaine the perceptions of the operating room staff about pressure ulcers through metaphors.

Research questions:

- What are the metaphors and thoughts of the operating room staff regarding the concept of pressure ulcers?
- Under which conceptual categories can these metaphors be grouped?

METHODS

Design

This study was conducted using a descriptive qualitative research design. Throughout this study, the authors followed the Consolidated Criteria for Reporting Qualitative Research.[11]

Participants

The universe of the study consisted of operating room staff working in the operating room of a training and research hospital in Istanbul. The purposive sampling method was used in the study. The relevant hospital has nine operating rooms, including an emergency operating room. Small, medium and large operations are performed in the operating room where the study was performed. The inclusion criteria of the study were being an operating room staff at least one year, agreed to participate in the study and could be reached. The study aimed to reach the entire population without sample selection. A total of 83 operating room staff participated in the study which 45 of them were operating room nurses, 38 of them were anesthesia technicians.

Data Collection

The data were collected face-to-face in the operating room rest room at a time convenient for the participants between September-October 2022 with two forms created by the researchers. Descriptive Features Form, which consisted of a total of four questions related to age, gender, total work experience and job. Semi-structured Interview Form, consisting of the following one sentences. In the semi-structured interview form, the operating room staff were asked to complete the sentence "Pressure ulcers are like ... because ...". In this way, it was aimed to have them write the notion that they compared the concept of "pressure wound" to, together with the reason of analogy. According to Yıldırım and Şimşek[12] the metaphor itself cannot sufficiently reveal the descriptive and visual power of the metaphor, and that it should be followed by the question "why" or "why".

Data Analysis

Descriptive statistics such as mean and percentage were used for descriptive characteristics of operating room staff. The research was analyzed by a statistician experienced in qualitative and metaphor research. To start the analysis of the data, the answer sheets given to the operating room staff was first checked for completeness and those who filled both the subject of the metaphor and the source of the metaphor spaces were evaluated. Answer sheets were numbered from one to 83. Content analysis, a data evaluation method used in qualitative research, was used in this study.[13] At this stage, the analysis was completed after the steps of classification, elimination, reorganization and compilation, category development, validity and reliability, and transferring the data to the computer environment. The metaphors the participants mentioned grouped under four categories, were logical in nature, and contributed to the understanding of the concept of pressure ulcers, and no forms were considered for exclusion during the elimination and purification phase.

Establishing Validity and Reliability

To ensure the validity of the research the coding of the data and the data analysis process were explained in detail.[12-14] In order to ensure the reliability of the research, the codes of the researchers and their categories related to the codes were compared to confirm whether the codes included in the categories identified in the research represent the conceptual categories in question. After the research data were coded separately by the researchers, the resulting code and category list was finalized. The formula [(Agreement)/ (Agreement + Disagreement)] x 100 was used to calculate the reliability of the study. According to the formula, the level of reliability between researchers should be above 70%.[15] The reliability coefficient calculated in this study was 96%, and it was concluded that the categories determined according to the opinions of the experts were highly consistent.

Ethical Considerations and Informed Consent

Ethics committee approval dated 07.09.2022 and numbered 103 was obtained from University of Health Sciences Sancaktepe, Şehit Prof. Dr. İlhan Varank Training and Research Hospital Non-Interventional Research Ethics Committee. Before the study, each participant was informed about the study and their consent was obtained. The ethical principles of protecting the rights, Declaration of Helsinki and privacy of the operating room staff and informed consent were respected throughout the study.

RESULTS

Operating Room Staff Characteristics

No sampling was used since it was aimed to reach the entire population during the research process. However, 10 operating room staff were not included in the study because they were unwilling to participate (n=6) or could not be reached (n=4). The research was completed with 83 individuals, reaching 89.2% of the population (83/93). 59% of the participants were women, the mean age of the operating room staff was 38.94±8.04 (minimum: 20; maximum: 54) years, 54.2% were nurses, 45.8% were anesthesia technicians and the mean of the total working year was 5±1.95 (minimum 2-maximum 12).

Data on the Metaphors

As shown in Table 1, operating room staff generated a total of 25 types of metaphors for the concept of pressure ulcers and expressed 83 opinions for them. The first five most mentioned metaphors by the operating room staff were icebergs, matryoshka, storm after a sunny day, swamp, garden care and cracked vase, respectively. 19 of these metaphors were repeated nine to two times, and six of them were repeated once.

The mentioned metaphors were grouped under four categories (Table 2).

Table 1. Metaphors Generated by Operating Room Staff for the Concept of Pressure Ulcers

Metaphor order	Metaphor	
1	Iceberg	9
2	Matryoshka	7
3	Storm after a sunny day	6
4	Swamp	6
5	Garden care	5
6	Cracked vase	5
7	Mirror	4
8	A horror movie with an unpredictable ending	4
9	Pitcher with a hole	4
10	Debt not paid on time	4
11	Travelling in the ocean	3
12	Diving into deep water	3
13	Jelly	3
14	Lipstick always applied from the same side and out of shape	3
15	Rotten apple	3
16	Shoe that is constantly stepped on one side	2
17	Zippered bag	2
18	Iron used less than necessary in a construction	2
19	Spoiled food	2
20	Double-edged blade	1
21	Oven-baked cookies	1
22	Ever-growing errand	1
23	Soaked dish sponge left aside	1
24	Whirlpool	1
25	Cooking the milk without overflowing	1
25 kinds of metaphors and the number of opinions stated		83

Table 2. Distribution of the Metaphors Generated by the Operating Room Staff for the Concept of Pressure Ulcers by Category

Unseen Danger

- Zippered bag (You don't know what's inside.)
- Traveling in the ocean (There is no end.)
- Diving into deep waters (You don't know what's going to come out in the deep.)
- Iceberg (There is more tissue damage deep below the visible.)
- A horror movie with an unpredictable ending (can cause many different infections after it develops.)
- Storm after a sunny day (Pressure wound that develops during surgery, even if the surgery was successful, overshadows the positive process and negatively affects the healing process of the patient.)
- Ever-growing errand (It is like a pressure ulcer when wounds deepen because of not taking proper precautions in a timely manner.)
- Debt not paid on time (If you do not pay your debt on time and do not take appropriate measures on time, pressure ulcers become progressive and deeper wounds.)
- Matryoshka (As you go inside and get deeper, new and deep wounds appear.)

Structural Deformation

- Spoiled food (Tissues kept under pressure decay like spoiled food)
- Soaked dish sponge left aside (Just as a soaked sponge cannot be used due to scent and bacteria, the tissues exposed to pressure cannot be used as before.)
- Jelly (The consistency and structure of the tissues also deform, it is very difficult to restore them.)
- Shoe that is constantly stepped on one side (There is always pressure on the same point in the pressure wound, because of this pressure, deformation occurs in the tissues.)
- Lipstick always applied from the same side and out of shape (Changing the side while applying lipstick is similar to rotations that must be done or not done to prevent pressure ulcers.)
- Rotten apple (also has structural deformation, just like pressure ulcers.)

Being Attentive

- Over-baked cookies (in both cases, the main problem is not managing the time and not intervening on time.)
- Iron used less than necessary in a construction (Supporting the pressure points incompletely precipitates pressure ulcers.)
- Cracked vase (Just as a cracked vase cannot be used, a pressure ulcer cannot be restored once developed, so care must be taken to avoid it.)
- Cooking the milk without overflowing (The pressure ulcer is like that thin spot where the milk starts to overflow. After it develops, you deal with dirt and wounds.)
- Double-edged blade (If you do not provide careful care, pressure ulcers will develop.)
- Garden care (Just as the garden requires attention and needs to be watered every day, pressure ulcers also require proper care.)
- Mirror (It is the reflection of the care we give.)

Whistle in the Wind

- Whirlpool (The effort to get out of the whirlpool is similar to the effort to treat a pressure ulcer after it has occurred.)
- Swamp (Once you fall, the wound gets deeper each time you struggle to get out.)
- Pitcher with a hole (It's like trying to fill a pitcher with a hole with water.)

The word cloud obtained according to the frequency of the metaphors explained by the operating room staff regarding the concept of pressure ulcer is given in Figure 1 metaphors with higher frequency are those with larger font size.

Figure 1. The Word Cloud of Metaphors

DISCUSSION

Qualitative research involving metaphors has been used frequently in nursing sciences in recent years.[16-18] The findings of this study, which we conducted with the operating room staff, provide information on the pressure ulcer perceptions and perspectives of the operating room staff. Although there are studies with quantitative data on pressure ulcers in the literature, there are no studies with

metaphors, so the findings of the study will be discussed in itself.

In our study, in which we aimed to explain the perceptions of the operating room staff about pressure ulcers through metaphors, a total of 25 metaphors were generated and a total of 83 opinions were expressed. When these metaphors were analysed, it was determined that the operating room staff expressed the concept of pressure ulcers with different metaphors and differing explanations of these metaphors. Among the 25 metaphors for pressure ulcers in total, the ones most frequently mentioned by the operating room staff were iceberg, matryoshka, storm after a sunny day, swamp, garden care and cracked vase. These metaphors and their explanations emphasize the ambiguity of pressure ulcers and refer to the mechanism by which operating room staff can control pressure ulcers. These metaphors emphasized in the research were collected under four different categories at the end of the analysis: unseen danger, structural deformation, being attentive and whistle in the wind.

The unseen danger category contained the most metaphors. Iceberg was a very common metaphor. The operating room staff explained that they would not know how deep the pressure wound went and therefore the size of the wound, so they interpreted the pressure ulcer with the metaphor of an iceberg as it represents the unknown. Similarly, with the metaphor of the matryoshka, the operating room staff suggested that wounds of different depths can always emerge from the pressure wound. As stated in the literature[4], pressure ulcers are classified in different stages and their depth varies according to the stages. In this context, in line with the metaphors made in our study, we can say that the awareness of the operating room staff on the pressure ulcers is high.

In the category of structural deterioration, the operating room staff mentioned jelly and other metaphors such as lipstick always applied from the same side and out of shape and rotten apple to refer to pressure ulcers in the context of structural deformation. On the other hand, in the being attentive category, the operating room staff stated that pressure ulcers can be prevented by paying attention to the care given with the metaphors of garden care, cracked vase, and mirrors expressed in the category of being attentive. As stated in the participant comments, pressure ulcers can be prevented by 90% with the identification of risk factors, early diagnosis and good care.[9] Our study data are in parallel with the literature. In addition, with the swamp metaphor they used in the category of whistle in the wind, they meant that no matter what was done after the pressure ulcer developed, it could not be reversed as it happens when a person sinks even deeper when attempting to get out of the swamp.

Aydoğmuş and Işık Andsoy[19] reported that nurses working in intensive care units had significantly higher scores on pressure ulcer prevention, risk and wound definition than nurses working in surgical clinics. They determined a statistically significant relationship between nurses' correct response scores and how frequent they encountered with pressure ulcers, whether they used scales, received in-service training, read articles about pressure ulcers and did research on the internet.[19] The metaphors and related expressions that emerged in our study actually show that the operating room staff think that pressure ulcers can be prevented with care and intervention, and that a pressure ulcer will not heal no matter what is done once it occurs. In addition, the operating room staff stated that they encountered pressure ulcers not during the formation phase, but during the treatment phase after they developed and told that they would like more information on the subject in in-service trainings or operating room orientation programs.

Limitations of the Study

The limitation of this study is that it took longer than expected to reach the sample because operating rooms are dynamic and shift work areas.

In conclusion, metaphors can be used as a powerful research tool in understanding and revealing the cognitive images of operating room staff regarding the concept of pressure ulcers. This study gives clues about how operating room staff imagine the concept of pressure ulcer. Understanding how the concept of pressure ulcer is perceived by the operating room staff through metaphors will provide an important foresight to better analyse the concept of pressure ulcers that may occur during surgery, to understand the concept of pressure ulcers in operating room staff, and to develop strategies in patient management. We recommend that the results of this and similar studies be shared with the operating room staff to raise awareness and the issue of pressure ulcers be addressed in the operating room in-service trainings.

Etik Komite Onayı: Araştırmanın yapılabilmesi için Sağlık Bilimleri Üniversitesi Sancaktepe Şehit Prof. Dr. İlhan Varank Eğitim Araştırma Hastanesi Girişimsel Olmayan Araştırmalar Etik Kurulu tarafından 07.9.2022 tarihli, Karar No: 103 sayılı etik kurul onayı alınmıştır.

Hasta Onamı: Çalışmaya katılan ameliyathane çalışanlarının sözlü onamı alınmıştır.

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REFERENCES

1. Serrano ML, González Méndez MI, Carrasco Cebollero FM, Lima Rodríguez JS. Risk factors for pressure ulcer development in intensive care units: a systematic review. *Med Intensiva*. 2017; 41(6):339-346. https://doi.org/10.1016/j.medin.2016.09.003
2. Yılmaz E, Başlı AA. Assessment of pressure injuries following surgery: a descriptive study. *Wound Manag Prev*. 2021;67(6):27–40. https://doi.org/10.25270/wmp.2021.6.2740
3. Xiong C, Gao X, Ma Q, et al. Risk factors for intraoperative pressure injuries in patients undergoing digestive surgery: A retrospective study. *J of Clin Nurs.* 2019;28(7-8):1148–1155. https://doi.org/10.1111/jocn.14712
4. National Pressure Ulcer Advisory Panel (NPIAP), European Pressure Ulcer Advisory Panel (EPUAP), Pan Pacific Pressure Injury Alliance (PPPIA). Prevention and treatment of pressure ulcers: Quick reference guide [Internet]. 2014. [cited 2023 March 13]. Available from: https://www.epuap.org/wp-content/uploads/2016/10/quick-reference-guide-digital-npuap-epuap-pppia-jan2016.pdf.
5. Association of periOperative Registered Nurses. Position statement on perioperative pressure ulcer prevention in the care of the surgical patient. *AORN Journal.* 2016;104(5):437-438. https://www.aorn.org/docs/default-source/aorn/toolkits/pressure-ulcer/update-2017/position-statement.pdf?sfvrsn=31f8fe9f_0
6. Fawcett D, Scott SM, Guren D, Munro CA. Prevention of peri operative pressure ınjury tool kit [Internet]. 2017. [cited 2023 March 20]. Available from: https://www.serwocn.org/conference/2017/posterfiles/2017%20Poster%2008%20Scott%20AORNposter6.pdf.
7. Eberhardt TD, Lima SBS, Soares RSA, et al. Prevention of pressure injury in the operating room: heels operating room pressure injury trial. *International Wound Journal.* 2020;17(7):1–8. https://doi.org/10.1111/iwj.13538
8. Özdemir ED, Uslu Y, Karabacak Ü, Eren D, İsabetli S. Pressure injuries in the operating room:who are at risk? *Wound Care. 2023;32(Sup7a).*https://doi.org/10.12968/jowc.2023.32.Sup7a.cxxviii
9. Aydın E, Savcı A, Karacabay K. Ameliyathane kaynaklı basınç yaraları önlenebilir mi? *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi*. 2021;14(4):442-52. https://doi.org/10.46483/deuhfed.909285
10. Goodman T, Spry C. Positioning the patient for surgery. In: Goodman T, Spry C, editors. Essentials of Perioperative Nursing. 6th ed. Burlington: Jones & Bartlett Publishers; 2016:141–174.
11. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349-357. https://doi.org/10.1093/intqhc/mzm042
12. Yıldırım A, Şimşek H. Sosyal bilimlerde nitel araştırma yöntemleri. 10th ed. Ankara: Seçkin Yayıncılık; 2016;279-298.
13. Erdoğan S. Hemşirelikte araştırma süreç uygulama ve kritik. 4th ed. İstanbul: Nobel Kitabevi; 2020. Nitel araştırmalar; p. 131-64.
14. Tutar H. Nitel araştırmalarda geçerlik ve güvenirlik: bir model önerisi. *AÜSBD.* 2022;22(Özel Sayı 2):117-140. https://doi.org/10.18037/ausbd.1227323
15. Miles MB, Huberman AM. Qualitative data analysis. Thousand Oaks, CA: Sage; 1994.
16. Saldamlı A, Işık Andsoy I. Surgical unit nurses' metaphors for surgical nursing. *JAREN.* 2021;7(2):86-93. https://doi.org/10.55646/jaren.2021.15428
17. Işık B, Kaya H, Özel H. Nurses' metaphorical perceptions of "care". *IJCS.* 2020;13(3):1678-1688. Available from: http://www.internationaljournalofcaringsciences.org/docs/17_haser_original_13_3-2.pdf
18. Durgun H, Köktürk Dalcalı B, Bayraktar F. Mental images of nurses regarding COVID-19: A metaphor study. *J Nurs Manag.* 2022;30(1):53–61. https://doi.org/10.1111/jonm.13482
19. Aydoğmuş Ünlü A, Işık Andsoy I. Examination of surgical nurses' pressure ulcer, risk factors and knowledge related to prevention. *Genel Tıp Dergisi.* 2021;31(2):168-174. https://dergipark.org.tr/en/pub/geneltip/issue/63109/959228

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Determination of Health Information-Seeking Behaviors of Surgical Patients via Internet/Social Media After Discharge

Cerrahi Hastalarının Taburcu Olduktan Sonra İnternet/ Sosyal Medya Yolu ile Sağlık Bilgisi Arama Davranışlarının Belirlenmesi

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ABSTRACT

Objective: To determine the learning needs of surgical patients via the internet/social media after discharge.

Methods: This descriptive study's population comprised all patients discharged from the surgical clinics of a university hospital after surgery between 12 December 2021 and 04 April 2022. A total of 180 patients participated in the study. Data were collected using a form created by the researchers and the Patient Learning Needs Scale.

Results: The mean age of the patients who participated in the study was 52.48±16.78 years; 67.22% were female, and 50.55% were primary school graduates. It was determined that patients obtained most of their information from the YouTube application (39.34%), and after surgery, they used social media since it offered more accessible access to healthcare professionals. 42.22% of the patients answered "undecided" to the question "Are internet/social media applications a reliable source for obtaining information about surgery?" The participants' mean total score on the Patient Learning Needs Scale was 174.00±33.00, and the subscale with the highest importance level was considered skincare at 4.27 ±0.52.

Conclusion: Most discharged patients use the internet to seek information about their surgery. Their Patient Learning Needs Scale score was above average, and the highest subscale score was skincare. It is recommended that nurses working in surgical clinics consider the needs of patients when planning discharge education and provide them with reliable sources that can be accessed when needed.

Keywords: Discharge planning, learning needs, Internet, Surgery.

ÖZ

Amaç: Cerrahi hastalarının taburcu olduktan sonra internet/sosyal medya yolu ile öğrenme gereksinimlerinin belirlenmesi amaçlandı.

Yöntemler: Tanımlayıcı türde planlanan bu araştırmanın evrenini, 12 Aralık 2021 ve 04 Nisan 2022 tarihleri arasında bir Üniversitesi Hastanesinin cerrahi kliniklerinde ameliyat olup taburcu olan tüm hastalar oluşturdu. Toplamda 180 hasta örnekleme dahil edildi. Veri toplamada araştırmacılar tarafından literatür doğrultusunda geliştirilen Veri Toplama Formu ve Hasta Öğrenim Gereksinimleri Ölçeği kullanıldı.

Bulgular: Araştırmaya katılan hastaların yaş ortalamasının 52,48±16,78, %67,22'sinin kadın, %50,55'inin ilkokul mezunu olduğu belirlendi. Hastaların ameliyat öncesinde olacağı ameliyat ile ilgili en fazla YouTube (%39,34) uygulamasından bilgi edindikleri, ameliyat sonrası ise "sosyal medya aracılığıyla sağlık profesyonellerine ulaşmak daha kolay olduğu için" sosyal medyayı kullandıkları bulundu. Hastaların %42,22'si "internet/sosyal medya uygulamaları ameliyat ile ilgili bilgi edinmek için güvenilir kaynak mıdır?" sorusuna "kararsızım" cevabını verdi. Hasta öğrenme gereksinimi ölçeği sonuçlarına bakıldığında ölçek toplam puanı 174,00±33,00'dır ve en yüksek önemlilik düzeyi 4,27±0,52 ile cilt bakımı alt boyutudur.

Sonuç: Taburcu olan hastaların çoğunluğunun internetten bilgi arama davranışının olduğu, hasta öğrenme gereksinimleri ölçeği puanının ortalamanın üstünde ve en fazla puan alan alt boyutun cilt bakımı olduğu sonucuna ulaşıldı. Cerrahi kliniklerinde çalışan hemşirelerin taburculuk eğitimlerini planlarken hastaların ihtiyaçlarını göz önünde bulundurmaları ve onlara ihtiyaç duyulduğunda ulaşabilecekleri güvenilir kaynaklar sunmaları önerilmektedir.

Anahtar Kelimeler: Taburculuk planlaması, Öğrenme gereksinimi, İnternet, Cerrahi.

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INTRODUCTION

The surgical process starts with the admission of the patients to the surgical clinic and continues until the end of their medical care. During the process, the patient is trained and prepared to take responsibility for individual care in the postoperative period. Discharge education in surgical patients should start from the preoperative period and continue until discharge from the hospital in a planned manner. The patient is informed and prepared to take responsibility for individual care in this process. Education to be provided for patients and their families before discharge should include wound care, nutrition, drugs to be used and their side effects, signs of infection, and hygiene.[1,2] In studies conducted with surgical patients, it has been recommended that these be done according to these needs.[3,4] High-quality discharge education prepares patients for home care and successful management of their recovery.[5]

With the increase in accelerated care protocols, patients' length of hospital stay has been shortened, and discharge education is now given in a shorter time[6], which leads patients to seek further information from different sources. Various educational resources are available for patients who have undergone surgery, but not all are reliable. The internet has become one of the most widely used sources to obtain information rapidly. Patients' failure to use reliable information sources can lead to medication errors, increased anxiety, incorrect treatment practices, and nutritional or lifestyle mistakes, which may adversely affect their recovery.[1] However, individuals can sometimes trust websites without considering the validity of the information published.[7]

In Turkey, the rate of households with internet access increased from 43% in 2011 to 94.1% in 2022.[8] Seeking health-related information ranks second among the internet use purposes of households.[9] In addition, the use of social media to obtain health information has rapidly increased in recent years.[10] In particular, a growing majority of patients with chronic conditions refer to social media and other online resources to acquire health-related information, connect with other people affected by similar conditions, and take on a more active role in their health-related decisions.[11] Also, in a study, Daraz et al.[12] stated that online health-related information may not be reliable.

In a previous study interviewing 1000 patients in the preoperative period, it was determined that 66% of these patients used the internet, and 56% stated that they used it to obtain the necessary information about health issues of interest.[14] In the literature, it is stated that patients widely use the Internet. During discharge training, information on where and how to access reliable information sources should be provided. It is essential for surgical nurses to be aware of this situation and to direct their patients to reliable information sources after discharge. While there is a limited number of studies in the literature investigating the post-discharge information resources of surgical patients[3,4,13], there have been no studies identified that explore learning needs via internet or social media. Therefore, in this study, we aimed to determine the post-discharge learning needs of surgical patients and their use of the internet/social media to meet these needs. This study makes an essential contribution to identifying the learning needs of surgical patients by examining their information-seeking behaviors via the internet and social media after discharge.

METHODS

Design

This descriptive study was conducted at a university hospital from December 2021 to April 2022 to assess post-surgical patients' internet and social media use for their learning needs.

Sample

The population of the study consisted of all patients that were discharged from the surgical clinics (general surgery, orthopedics, urology, ear, nose, throat and head and neck surgery, gynecology and obstetrics, plastic and reconstructive surgery, cardiovascular surgery) of the hospital after surgery. The study included volunteers who were 18 years of age or older, who were willing and eager to participate in the study, who did not have a condition that would affect decision-making (dementia, etc.), and who had undergone surgery with any surgical technique in the last 3 months. The sample consisted of 180 patients that met the inclusion criteria. In the power analysis, using an alpha margin of error of 5%, effect size of 0.2, and sample size of 180, the power was found to be 85%.

Data Collection and Instruments

Data were collected using a data collection form and the Patient Learning Needs Scale, for which necessary permission was obtained.[3,4,11,13,14]

Data Collection Form: The researchers created this form in light of the literature[3,4,11,13,14] and included 21 questions. Among the questions included in the data collection form are the age and gender of the patients, the type and time of the surgery they underwent, their status of receiving training and information from healthcare professionals in the pre-and postoperative period, which internet and

social media applications they prefer to obtain information about their surgery and why they prefer them, which topics they would like to be informed about, and their thoughts on the use of internet/social media applications for obtaining information for situations such as health/surgery.

Patient Learning Needs Scale (PLNS): This scale was first developed in 1990 by Bubela et al.[15] to determine the information needs of patients at discharge. The validity and reliability analyses of the Turkish version of the scale were undertaken by Çatal and Dicle[3] in 2008. The scale consists of 50 items and seven subscales. The total score varies between 50 and 250. As the total score obtained from the scale increases, the learning needs of individuals also increase. High scores indicate a higher importance of learning needs. The scores for the overall scale and its subscales are calculated by dividing the total score by the number of items in the scale. These results are then interpreted on a scale of 1 to 5, representing the following levels of importance: 1 - not necessary; 2 - slightly important; 3 - somewhat important; 4 - very important; 5 - extremely important. The Cronbach Alpha value of the scale was reported to be 0.93. The Cronbach alpha value for the current study was found to be 0.95.

The researcher visited the surgical unit outpatient clinics in the hospital and interviewed patients who met the inclusion criteria. More than one outpatient clinic was visited on the same day. Patient questionnaires were completed through one-on-one, face-to-face interviews lasting approximately 20 to 25 minutes. Data on the patient's post-discharge internet/social media use during surgery were collected using the Patient Learning Needs Scale.

Statistical Analysis

Statistical analysis was performed with SPSS 25.0 (SPSS for Windows, v. 25.0, Armonk, NY, 2017). Numeric data were reported as means with standard deviations, while categorical data were presented as frequencies and percentages. Descriptive statistics (mean, standard deviation, median, frequency, and rate) were used to evaluate the study data. Student's t-test was performed to assess two groups for normally distributed variables. The results were evaluated at the 95% confidence interval and *P*<.05 significance level.

Ethics Committee Approval

For this descriptive study, ethics committee approval was obtained from the Ethics Committee of Non-Interventional Research at Balıkesir University (Date: 23.11.2021, ID: 2021/34) and was conducted by the Declaration of Helsinki. Patients were informed that all information on the forms would be kept confidential and used solely for scientific purposes. Before data collection, the purpose and nature of the study were explained to the patients in detail, and verbal and written consent was obtained from the patients who volunteered.

RESULTS

The descriptive data of the patients: the mean age of the participants was 52.48±16.78 years, 67.22% were female, and 50.55% were primary school graduates (Table 1).

Table 1. Comparison of the total scores on Patient Learning Needs Scale according to patients demographic characteristics

Variables	n	%	Mean	SD	Test and *P*
Age			52.48	16.78	
Gender					
Female	121	67.22	176.13	34.38	t=0.572
Male	59	32.78	173.14	32.29	.577
Educational status					
Literacy	11	6.11	187.54	37.80	
Primary school	91	50.56	174.60	31.84	F=1.189
Middle school	13	7.23	184.30	21.69	.318
High school	48	26.66	168.27	33.41	
University	17	9.44	170.52	40.92	
Income status					
Income less than expenditure	24	13.33	168.37	33.28	F=0.527 .591
Income matches expenditure	80	44.45	176.20	32.19	
Income more than expenditure	76	42.22	173.75	33.77	
Surgical clinics					
Cardiac surgery	19	10.55	188.36	20.48	F=4.792
Urology	7	3.88	183.85	32.53	**<.001***
General Surgery	31	17.22	182.61	31.33	
Orthopedics	49	27.22	181.73	36.03	
Gynecology and Obstetrics	30	16.66	172.70	26.31	
Plastic and Reconstructive Surgery	10	5.55	154.70	41.53	
Neurosurgery	23	12.77	153.86	22.26	
Ear, nose, throat	9	5.00	142.44	34.27	
Time for surgery					F=2.585
0-14 days	109	60.56	33.23	3.18	.055
15-29 days	39	21.66	32.80	5.25	
30-59 days	13	7.22	24.26	6.73	
60-89 days	19	10.56	32.15	7.37	
Total	180	100			

*p<0.05, SD; Standart Deviation, t; T Test F;Analysis of variance

It was determined that 96.06% of the participants obtained information from healthcare professionals in the preoperative period and 99.44% in the postoperative period. Physicians provided information to the participants in both preoperative (83.74%) and postoperative (70.51%) periods. Of the participants, 42.22% were undecided

whether the internet/social media applications provided a reliable source to obtain information about surgery (Table 2). The participants obtained most information about surgery from the YouTube application (39.34%), and they used social media in the post-surgical period because it offered more accessible access to healthcare professionals. The participants reported that in the preoperative period, they sought information about what to expect in the postoperative period (e.g., fasting, nutrition, and hospital stay) (Table 2).

Table 2. Social Media/Internet Use of Patients

Surgical information	n	%
What subjects did you want to learn about before surgery?*		
What to expect after surgery (hospital environment. fasting period. etc.)	120	29.19
What to do after surgery	98	23.84
Possible postoperative complications	87	21.16
Preparation for surgery	42	10.21
Exercise	27	6.56
Nutrition	22	5.35
Other	15	3.64
What/who do you think is the most useful source of information in the postoperative period?*		
Physician	112	40.57
Each member of a multidisciplinary team (physician-nurse-physiotherapist-anesthetists-dietician)	83	30.07
Posts on social media accounts used by healthcare professionals	53	19.2
Nurse	17	6.15
Posts by social media users	9	3.26
Posts by closed groups on social media (Facebook. Instagram. etc.)	2	0.72
Do you think the internet/social media applications are reliable sources to obtain information about surgery?		
Yes	68	37.77
No	36	20
Undecided	76	42.22
Should internet/social media applications be used to obtain information on health/illness/surgery?		
Yes	134	74.44
No	46	25.55
Which social media platforms have you used to seek information about your surgery? *		
YouTube	**96**	**39.34**
Google	57	23.35
Instagram	40	16.39
Facebook	40	16.39
Other	11	4.49
Why do you prefer social media accounts to obtain postoperative information? *		
Because it is easier to access healthcare professionals on social media	105	48.83
To access surgical videos	31	17.22
Because I am reluctant to ask healthcare professionals questions	23	10.69
To obtain detailed information	14	7.78
To read the posts of individuals that have undergone surgery and interact with them	12	5.58
Because I trust the social media posts of individuals that have undergone surgery	12	5.58
Because I was not sufficiently informed by healthcare professionals before and after surgery	9	3.72
Other	9	3.72
If yes. why? *		
To contact individuals that have undergone the same surgery	11	27.5
To learn about the experiences of individuals that have undergone the same surgery	6	15
To obtain information about the postoperative period	5	12.5
To receive psychosocial support from other people in groups	5	12.5
To do preliminary research for surgery	4	10
To choose a physician/hospital	2	5
To decide whether to have surgery	2	5
To obtain information about the preoperative period	2	5
Other	3	7.5

*Participants were allowed to choose more than one option.

When the results of the Patient Learning Needs Scale were examined, it was determined that the total scale score was 174±33, which was above the average (Table 3). Among all the subscales, the highest level of importance was observed in skin care (4.27) and the lowest level of significance in feelings related to the condition (2.58). Table 3 presents the importance levels of all the subscales.

Table 3. Total and Subscale Scores in the Patient Learning Needs Scale

Scale and Subscales	Number of items	Scale score range	Patient score	Importance level
Skin Care	5	5-25	21.37 ± 2.61	4.27
Activities of Living	9	9-45	35.33 ± 6.34	3.97
Enhancing Quality of Life	8	8-40	29.35 ± 7.01	3.67
Treatment and Complications	9	9-45	32.85 ± 5.99	3.45
Medications	8	8-40	26.70 ± 7.56	3.34
Community and Follow-up	6	6-30	15.57 ± 5.20	2.59
Feelings Related to Condition	5	5-25	12.91 ± 5.97	2.58
Total	**50**	**50-250**	**174.00 ± 33.00**	**3.48**

The top 4 learning needs that were most important by patients: "What should I do to maintain my stamina (4.91)", "How to manage my pain? (4.89)" and "How to recognize a complication? (4.83)" (Table 4).

Table 4. Ten Learning Needs Identifying to Be Most Important for Patients

	Importance	
Learning needs	**Importance level**	**Standard deviation**
What should I do to maintain my stamina?	4.91	.362
How to manage my pain?	4.89	.388
How to recognize a complication?	4.83	.434
What services does home health care provide?	4.81	.596
How to care of cut/incision?	4.76	.620
When can I take a shower or bath?	4.72	.749
How to prevent my skin from getting red?	4.72	.717
How to prevent my skin from getting sore?	4.69	.813
How much rest I should be getting?	4.69	.711
What physical exercise I cannot do such as lifting?	4.59	1.002

No statistically significant difference was found in the total score on the Patient Learning Needs Scale and the subscale scores according to the gender and educational status of the patients (*P*>.05) (Table 1). There was no statistically significant difference in scores based on whether participants considered the internet or social media reliable sources for information about surgery (*P*>.05) (Table 5).

Table 5. Comparison of the Total Scores on Patient Learning Needs Scale According to Social Media/Internet Use of Patients

Variables	n	Mean	SD	Test	*P*
Do you think the internet/social media applications are reliable sources for obtaining information about surgery?				F=1.096	.337
Yes	68	172.95	31.90		
No	36	181.30	36.82		
Undecided	76	171.76	31.84		
Should internet/social media applications be used to obtain health/illness/surgery information?				t=-1.605	.113
Yes	134	171.75	32.23		
No	46	181.02	34.30		
Total	180				

DISCUSSION

Insufficient discharge education leads patients to seek further health information. They may use unreliable sources on the internet or the past experiences of others to obtain information about patients' care.[12] In the current study, we investigated the patients' post-discharge learning needs and their use of the internet/social media to meet them.

The mean age of the individuals participating in the study was 52.48±16.78; more than half of them were female and graduated from primary school, and no significant difference was found between the mean PNLS scores. Among the surgical clinics, it was determined that the patient group with the highest PNLS score was cardiac surgery, and the patient group with the lowest score was ear, nose, and throat. There was a significant difference between the groups (Table 1). In the Soyer et al.[13] study, the mean age of the patients was 46.8 ± 13.0, and 57% were female, while high school graduates were in the majority in terms of education. In another study, it was found that the mean age of the patients was 58.45 ± 10.07, most were male and primary school graduates.[23] When the scale scores were analyzed, the groups had no significant difference.[23]

A considerable percentage of patients included in this study stated that they used YouTube to obtain information about their surgery, and the majority preferred the internet/social media because it offered more accessible access to healthcare professionals. Almost half of the patients considered the internet/social media as a reliable source that could be used to seek health-related information. 40% of the patients stated that the doctor was the most helpful source of information in the postoperative period, and 30% said that it was each of the multidisciplinary team members (Table 2). In a study conducted in Turkey to investigate the general internet use of patients, it was determined that health information obtained from the internet strengthened decision-making processes.[9] In another study, it was reported that 40.9% of participants 'sometimes' used the internet to research health-related issues.[16] Eler Çelik et al.[14] interviewed 1000 patients in the preoperative period to determine their internet use. The authors found that 55.9% of the patients sought information about their disease on the Internet before surgery, and 43.7% considered the Internet helpful in accessing health-related information.[12] Patients' behavior in seeking health-related information from unreliable sources can be reduced by providing adequate education planned according to their learning needs during the surgical process. This education should also include information on reliable sources of information to which patients can refer.

In this study, we determined that the post-discharge learning needs of the patients were above the average. When studies conducted in the country were examined, the learning needs scores of patients admitted to general surgery clinics, undergoing open heart surgery, undergoing surgery, and being admitted to internal medicine and surgery clinics were also found to be above the average.[13,17,18] Similar results were reported in studies conducted with patients hospitalized or discharged from surgical clinics in other countries.[19–21] These findings reveal a consistent trend worldwide that points to the importance of meeting patient education and information needs in the post-discharge period.

When the Patient Learning Needs Scale subscales were ordered according to their scores, it was determined that the skin care subscale received the highest score (Table 3). A previous study on the learning need perceptions of patients undergoing primary coronary intervention, and the nurses who provided care for them found that the patients had the most learning needs related to skin care.[19] In contrast, in another study examining the learning needs of internal and surgical patients, the skin care subscale was reported to have the lowest level of importance.[22] These contrasting findings suggest that learning needs may vary significantly depending on the type of surgery and patient population, highlighting the necessity for tailored educational interventions.

In studies in the literature, the highest scores mainly were obtained from the subscales of treatment and complications[13,21,23,24] and medications[13,22]. In the current study, data were collected during the follow-up visit of the patients after discharge, while in most previous studies, data collection was undertaken before patients were discharged.[13,17,19,25] Patients' needs may differ during their hospital stay and after discharge, explaining the differences in study findings. These observations underscore the importance of assessing learning needs at multiple time points to understand and fully address the evolving educational requirements of patients.

In a study by Mosleh et al.[19], patients' perceived learning needs and the nurses' perception of the learning needs of their patients were investigated. In both groups, the skin care subscale had the highest score. However, the subscales with the second and third highest scores differed between the patients and nurses. In that study, it was determined that there were differences in the

perceptions of patients and nurses concerning patient needs.[19] This again shows that nurses should be aware of the importance of the needs of patients.

In this study, the lowest level of importance of the subscale was determined to be feelings related to the condition (Table 3). Consistently, in another study examining the post-discharge learning needs of patients who had undergone open heart surgery, the feelings related to the condition subscale were reported to have the lowest score.[23] Similarly, different studies reported that this subscale had the lowest score.[11,19,21,23,26] In a study evaluating patients who had undergone thoracic surgery, the two minor subscales were determined to be feelings related to the condition (3.80) and community and follow-up (3.81).[24] In the current study, feelings related to the condition (2.58) and society and follow-up (2.59) were the two subscales with the lowest levels of importance. The results of this study agree with the literature. These consistent findings indicate that patients may prioritize emotional and social aspects less, suggesting current patient education approaches that may need to be addressed.

The most crucial learning need of the patients included in this study was "What should I do to maintain my stamina?" with an importance level of 4.91. This was followed by "How to manage my pain?" (4.89) and "How to recognize a complication?" (4.83) (Tablo 4). In the literature, the most critical learning needs concern when to shower or bath[19] or what to do when the symptoms of the disease appear.[11] The results of our study indicate the need to focus more on issues that will be tackled and paid attention to at home when planning discharge education to be provided by nurses.

In the study, the higher post-discharge information needs of patients who thought that the internet or social media were not reliable sources of information and that these platforms should not be used for obtaining information about health and surgery indicate that these individuals need to access accurate and reliable information, especially about the surgical process, and that they feel this need more (Table 5). However, the fact that there was no statistically significant difference between the groups reveals that information is an essential need for all patients in general and may be at similar levels regardless of internet use preference.

Limitations

The study's limitations include not assessing patients' internet and social media behaviors, technology access, and digital literacy levels. It was conducted in a single center and included patients from various surgical clinics.

This study investigated surgical patients' internet/social media use to meet their post-discharge learning needs. According to the research results, the patients had more learning needs after discharge, the most learning needs in skin care, and the least in feelings related to the condition. They also mostly considered that the internet and social media could be used to obtain health-related information.

It is recommended that nurses working in surgical clinics consider the needs of patients when planning discharge education and provide them with reliable sources that can be accessed when needed. To enhance the effectiveness of patient education, nurses should first assess and identify the specific learning needs of each surgical patient. This can be achieved through individualized assessments and validated tools to gauge patients' knowledge gaps and concerns. Based on these assessments, nurses should develop a tailored education plan that addresses the identified needs, ensuring that critical areas such as wound care, medication management, potential complications, and lifestyle modifications are thoroughly covered. Additionally, providing patients with easy-to-understand, evidence-based educational materials and directing them to trustworthy online resources can help reinforce the information provided during discharge education. Continuous follow-up and support, including scheduled check-ins and access to a dedicated helpline or online platform for questions, can ensure that patients feel supported and informed throughout their recovery. Due to the reduced hospital stay of surgical patients, discharge education should be planned and undertaken in the shortest time possible, and nurses should aim to provide comprehensive discharge information.

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REFERENCES

1. Akyolcu N. Postoperative Nursing Care. In: Aksoy G, Kanan N, Akyolcu N, ed. *Surgical Nursing* I. 2nd Edition. Istanbul: Nobel Medical Bookstores; 2017:335-365.
2. Fındık ÜY. The Surgical Process: Postoperative Care and Prevention of Complications. In: Aslan Eti F, ed. *Surgical Care.* 1st Edition. Ankara: Akademisyen Bookstore; 2016:425-453.
3. Çatal E, Dicle A. A Validity and Reliability Study of The Patient Learning Needs Scale in Türkiye. *DEUHEFED.* 2008;1(1):19-32. https://acikerisim.deu.edu.tr/xmlui/bitstream/handle/20.500.12397/13969/19-32.pdf?sequence=1&isAllowed=y
4. Güçlü A, Kurşun Ş. Learning Needs at Discharge of Patients Hospitalized in the General Surgery Clinic. *Journal of Anatolia Nursing and Health Sciences*. 2017;20(2):107-113. https://dergipark.org.tr/tr/download/article-file/348661
5. Weiss ME, Piacentine LB, Lokken L, et al. Perceived readiness for hospital discharge in adult medical-surgical patients. *Clin Nurse Spec*. 2007;21(1):31-42. https://doi.org/10.1097/00002800-200701000-00008
6. Ljungqvist O, Young-Fadok T, Demartines N. The History of Enhanced Recovery after Surgery and the ERAS Society. *J Laparoendosc Adv Surg Tech A.* 2017;27(9):860-862. https://doi.org/10.1089/lap.2017.0350
7. Goldstein N, Hadidi N. Impact of bariatric pre-operative education on patient knowledge and satisfaction with overall hospital experience. *Bariat Nurs Surg Pat.* 2010;5(2):137-144. https://doi.org/10.1089/bar.2010.992
8. Turkish Statistical Institute. Household Information Technology (IT) Usage Survey. Accessed December 24, 2022. https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2024-53492
9. Çetin İ, Özhanlı Y, Üniversitesi İ, Nightingale F. The characteristics of internet usage of surgical patients accessing health information. *KOU Sag Bil Derg*. 2018:44-49. https://doi.org/10.30934/kusbed.409937
10. Rammohan R, Dhanabalsamy, Nisha Cheeyandira, Abhiman Menzo Emanuele Lo Szomstein, Samuel Rosenthal R. Impact of Social Media on Bariatric surgery. *Surg Obes Relat Dis.* 2016;12(7):129-130. https://doi.org/10.1016/j.soard.2016.08.237
11. George DR, S RL, Kraschnewski JL. Dangers and opportunities for social media in medicine. *Clin Obstet Gynecol*. 2013;56(3):1-10. https://doi.org/10.1097/GRF.0b013e318297dc38
12. Daraz L, Morrow AS, Ponce OJ, et al. Can Patients Trust Online Health Information? A Meta-narrative Systematic Review Addressing the Quality of Health Information on the Internet. *J Gen Intern Med*. 2019;34(9):1884-1891. https://doi.org/10.1007/s11606-019-05109-0
13. Soyer Ö, Candan Y, Yavuz M. Determination of Patient Learning Needs of Surgical Patients. *DEUHEFED.* 2018;11(3):200-208. https://dergipark.org.tr/tr/download/article-file/752762
14. Eler Çevik B, Yüce Y, Erkal KH. Preoperative Evaluation of Internet Usage Characteristics of Patients in an Anesthesiology Clinic: A Survey of 1000 Patients. *South Clin Istanb Eurasia*. 2018;28(4):266-271. https://doi.org/10.14744/scie.2018.13007
15. Bubela N, Galloway S, McCay E, et al. The Patient Learning Needs Scale: reliability and validity. *J Adv Nurs.* 1990;15(1081-1087). https://doi.org/10.1111/j.1365-2648.1990.tb01711.x
16. Hassankhani H, Haririan H, Jafari A, Porter JE, O'Brien F, Feizollahzadeh H. Learning Needs of Iranian Patients with Coronary Heart Disease: A Cross-sectional, Comparative Study. *Clin Nurs Res*. 2021;30(2):193-199. https://doi.org/10.1177/1054773819898808
17. Zülfikar H. The internet usage behaviour and access patterns of the patients to the health information on the internet. *Florence Nightingale J Nurs*. 2014;22(1):46. https://dergipark.org.tr/tr/pub/fnjn/issue/30811/333287
18. Özyurt T, Aydemir Y, Aydın A, et al. Health information seeking behaviour from internet and television and related factors. *Sakarya Tıp Dergisi*. 2020;10(1):1-10. https://dergipark.org.tr/tr/download/article-file/1174981
19. Mosleh SM, Eshah NF, Almalik MMA. Perceived learning needs according to patients who have undergone major coronary interventions and their nurses. *J Clin Nurs*. 2017;26(3-4):418-426. https://doi.org/10.1111/jocn.13417
20. Eshah NF. Jordanian acute coronary syndrome patients' learning needs: Implications for cardiac rehabilitation and secondary prevention programs. *Nurs Health Sci*. 2011;13(3):238-245. https://doi.org/10.1111/j.1442-2018.2011.00608.x
21. Kurt G, Loerzel VW, Hines RB, et al. Learning Needs of Women Who Undergo Robotic Versus Open Gynecologic Surgery. *J Obstet Gynecol Neonatal Nurs.* 2018;47(4):490-497. https://doi.org/10.1016/j.jogn.2018.04.133
22. Çetinkaya F, Aşiret GD. Identification of learning needs of patients in medical and surgical units. *DEUHEFED.* 2017;10(2):93-99. https://dergipark.org.tr/tr/download/article-file/752970
23. Gökçen M. Determination of information needs of patients with open heart operation and anxiety levels after discharge. PhD Thesis. Hasan Kalyoncu University; 2018.
24. Guven B, Ibrahimoglu O, Elbuken B. Learning Needs of Patients and Their Caregivers After Ambulatory Surgery. *J Perianesth Nurs.* 2020;35(3):283-287. https://doi.org/10.1016/j.jopan.2019.10.012
25. Savcı C, Karaaslan Y, Yüksel S. Learning Needs, Expectations and Views of General Surgery Patients. *JAREN.* 2021;7(2):76-85. https://doi.org/10.55646/jaren.2021.71602

26. Üstündağ H, Gül A, Özkaya B. The Determination of Patient Learning Needs After Day Surgery: A Cross-. *J Perianesth Nurs.* 2023;38(2):258-263. https://doi.org/10.1016/j.jopan.2022.06.002

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Mobil Uyumlu PREDIABE-T^R Web Sayfasının Oluşturulması, Kapsamı, Kalitesi ve Kullanılabilirliğinin Değerlendirilmesi

Creation of a Mobile Compatible PREDIABE-T^R Webpage, Evaluation of Scope, Quality and Usability

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ÖZ

Amaç: Çalışmanın amacı prediyabetli bireylerin bilgilenmeleri amacıyla bir web sayfası oluşturulması, kapsamı, kalitesi ve kullanılabilirliğinin değerlendirilmesidir.
Yöntemler: Metodolojik tipte yürütülen bu çalışmada, Prediabe-T^R web sayfası (prediabe-tr.net) araştırmacılar tarafından WordPress içerik yönetim sistemi kullanılarak hazırlanmıştır. Prediabe-T^R web sayfası 10 uzman ve 53 prediyabetli birey tarafından değerlendirilmiştir. Predibe-T^R web sayfasının içeriği uzmanlar tarafından Davis tekniğiyle, kalitesi ise Tüketici Sağlığı Bilgileri için Kalite Kriterleri ölçüm aracı (Quality Criteria for Consumer Health Information-DISCERN) ile değerlendirilmiştir. Web sayfasının kullanılabilirliği prediyabet tanısı olan katılımcılar tarafından Web Sayfasının Kullanılabilirliğini Değerlendirme Formu (System Usability Scale-SUS) ve Prediabe-T^R web sitesinde olmasını istediği özellikleri sorgulayan açık uçlu sorular ile değerlendirmiştir.
Bulgular: Prediabe-T^R web sitesine ilişkin kapsam geçerlik indeksi 0,94**,** kalitesine ilişkin DISCERN güvenirlik puan ortalaması 33,4±2,8, bilgi kalitesi puan ortalaması 39,3±1,6, genel kalite puan ortalaması 5 puan üzerinden 4,8±0,4 ve DISCERN toplam puan ortalaması 75 puan üzerinden 72,7±4,3 bulunmuştur. Prediyabeti olan katılımcılar Prediabe-T^R web sitesinin kullanılabilirlik düzeyini 100 puan üzerinden 67,6 olarak hesaplanmıştır. Katılımcılar her bir maddeye 4 puan üzerinden ortalama 2,7 puan vermişlerdir.
Sonuç: Prediabe-T^R web sitesi, prediyabetli bireyler için bilgi edinme sürecini pratik ve ekonomik bir seçenek olarak sunmaktadır. Web sitesinin kapsamı, kalitesi ve kullanılabilirliği hem uzmanlar hem de kullanıcılar tarafından olumlu değerlendirilmiştir. Gelecek çalışmalarda, Prediabe-TR web sitesinin farklı yaş ve eğitim düzeylerindeki bireyler için kullanılabilirliğinin artırılması ve etkisinin değerlendirilmesi önerilmektedir.
Anahtar Kelimeler: Diyabet Öncesi Dönemi, Klinik Çalışma, Hemşirelik

ABSTRACT

Objective: The aim of the study is the creation of a webpage for the purpose of informing individuals with prediabetes, and to evaluate its scope, quality, and usability.
Methods: In this methodological study, the Prediabe-T^R webpage (prediabe-tr.net) was prepared using the WordPress content management system by researchers. The Prediabe-T^R webpage was evaluated by 10 experts and 53 individuals with prediabetes. The content of the Prediabe-T^R webpage was evaluated by experts using the Davis technique, and its quality was assessed using the Quality Criteria for Consumer Health Information tool (DISCERN). The usability of the webpage was evaluated by participants diagnosed with prediabetes through the Web Page Usability Assessment Form (SUS) and open-ended questions inquiring about features they wished to have on the Prediabe-T^R website.
Results: The scope validity index related to the Prediabe-T^R website was found to be 0.94, the average DISCERN reliability score for quality was 33.4±2.8, the information quality score average was 39.3±1.6, the average overall quality score was 4.8±0.4 out of 5, and the average total DISCERN score was 72.7±4.3 out of 75. The usability level of the Prediabe-T^R website, as calculated by participants with prediabetes, was 67.6 out of 100. Participants gave an average of 2.7 points out of 4 to each item.
Conclusion: Acquiring information about prediabetes through the website is a practical and economical educational choice. Future studies could test the usability and effectiveness of the Prediabe-T^R website in populations of different ages and educational levels.
Keywords: Prediabetes, Clinical Study, Nursing

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GİRİŞ

Diyabet riski, özellikle 45 yaş üstü bireylerde önemli bir sağlık problemidir. Amerikan Diyabet Birliği'nin 2022 raporlarına[1] göre, bu yaş grubu diyabet açısından yüksek risk altındadır. Uluslararası Diyabet Federasyonu ise 2019 verilerine[2] dayanarak, 20 ile 79 yaş aralığındaki yetişkinlerin yaklaşık 374 milyonunun bozulmuş glukoz toleransı (BGT) veya prediyabeti olduğunu bildirmiştir. Prediyabet tanısı konduktan sonra, beş yıl içinde tip 2 diyabet gelişme riskinin yarı yarıya olduğu bilinmektedir.[3] Eğitim programları bu sorunla mücadelede kritik bir rol oynamaktadır. Ancak, grup ve bireysel eğitimlerin zaman, kişi ve yer bakımından sınırlı olması, bu tür eğitimlerin sürdürülebilirliğini ve yaygınlaştırılmasını zorlaştırmaktadır. Bu bağlamda, sürdürülebilir, geniş çapta uygulanabilir, ekonomik ve yenilikçi eğitim yöntemlerine ihtiyaç duyulmaktadır. Teknolojinin kullanımı, öğrenme ve öğretme süreçlerinde sağlık profesyonelleri ile bireyler arasındaki etkileşimi artırarak bu ihtiyaca cevap vermektedir.[4] Web destekli sağlık eğitimi, zaman ve mekan sınırlamalarını ortadan kaldırarak bireylere istedikleri zaman bilgiye erişim imkanı sunar. Aynı zamanda, sağlık profesyonellerine de sürekli olarak ulaşılabilmelerini sağlar. Bu, etkili, yaygın, sürdürülebilir ve kullanışlı bir eğitim yöntemidir.[5] Gelişen bilgi ve iletişim teknolojileri, toplumların ve bireylerin internet ve web ortamını sağlık bilgisi elde etmek için daha fazla kullanmalarına neden olmaktadır. Ayrıca, yetişkin bireylerin yüz yüze sağlık eğitimlerine zaman ayıramamaları, sanal ortamda bilgiye istedikleri zaman ulaşabilme imkanı ve sanal eğitimlerin geleneksel eğitim yöntemlerine kıyasla daha düşük maliyetli olması, web destekli sağlık eğitiminin önemini daha da artırmaktadır.[6]

AMAÇ

Bu çalışmada prediyabete ilişkin mobil uyumlu bir PREDIABE-T^{R} web sayfası oluşturulması, kapsamı, kalitesi ve kullanılabilirliğinin değerlendirilmesi amaçlanmıştır.

Araştırma soruları

- Uzmanlara göre PREDIABE-T^{R} web sayfasının kapsamı ve kalitesi uygun mudur?
- Prediyabeti olan bireylere göre PREDIABE-T^{R} web sayfasının kullanılabilirliği nasıldır?

YÖNTEMLER

Araştırmanın Türü ve Yeri

Bu araştırma, metodolojik tipte yürütülmüş olup, bir eğitim ve araştırma hastanesinin endokrinoloji polikliniğinde gerçekleştirilmiştir.

Araştırmanın Zamanı

Araştırmacılar tarafından web sayfası oluşturulduktan sonra prediyabeti olan bireyler web sayfasını 1 Aralık 2023-1 Mart 2024 tarihleri arasında ziyaret ederek veri sağlamıştır. Bu çalışmada hazırlanan Prediabe-T^{R} web sayfası önce ilgili alanda uzmanlar (n:10) tarafından, daha sonra prediyabet tanısı olan katılımcılar tarafından değerlendirilmiştir (n:53).

Araştırmanın Örneklemi

Araştırma kapsamında geliştirilen web sayfasını kullanması beklenen hedef grup, 40 yaş ve üstü prediyabeti olan bireylerdir. Bu araştırmada örneklem büyüklüğü, G*Power yazılımı kullanılarak tespit edilmiştir. Hyzy ve diğerlerinin[7] 2022 yılındaki çalışmasında yer alan Web Sayfasının Kullanılabilirliğini Değerlendirme Formu (SUS) ölçeğinin ortalama ve standart sapma değerleri esas alınarak, SUS ölçeğinin ortalama puanının 70 veya daha yüksek olacağı varsayımıyla, 0,4 etki büyüklüğü hesaplanmıştır. Bu hesaplama sonucunda, %80 istatistiksel güç ve %95 güven aralığında, 53 kişilik bir örneklem büyüklüğüne ulaşılmıştır.

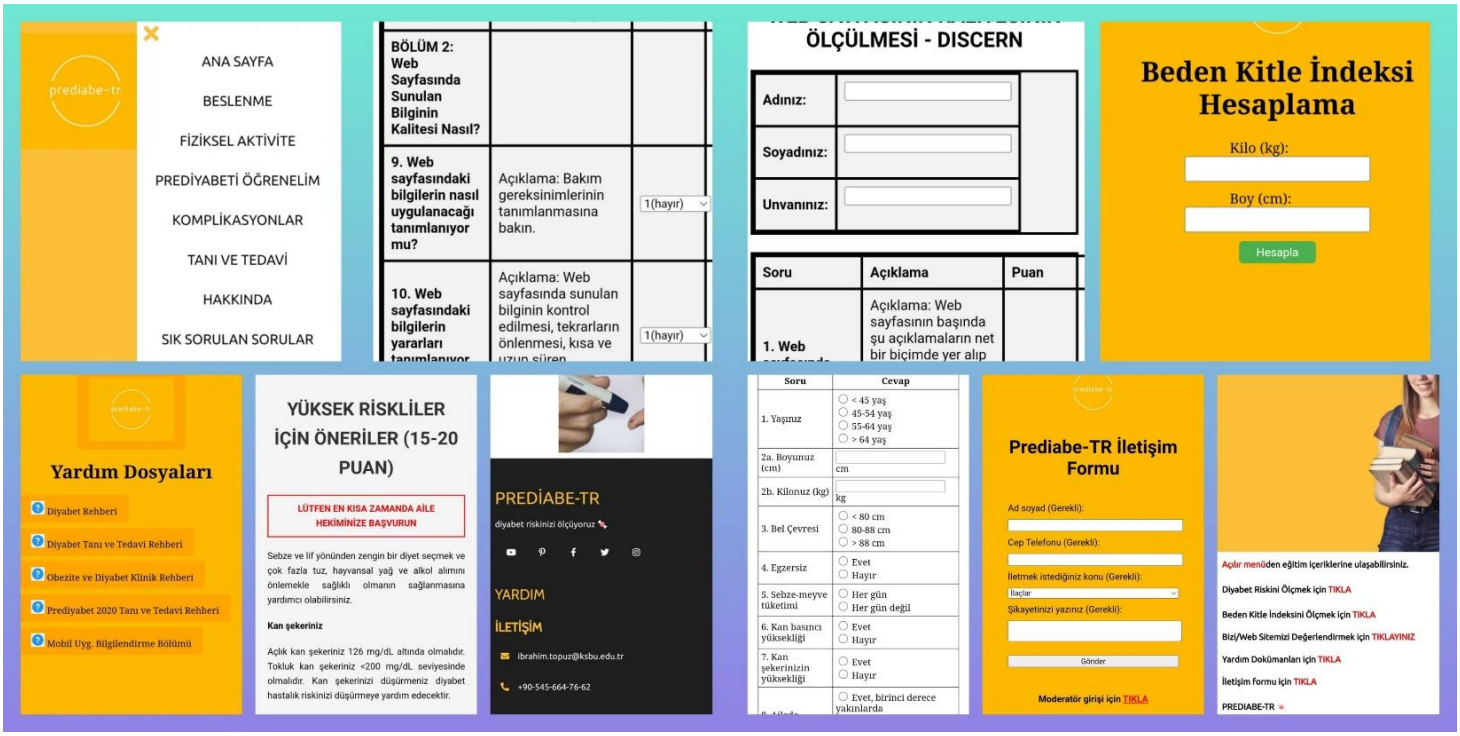
Web Sayfasının Tasarımı

Web Sayfası (prediabe-tr.net) araştırmacı tarafından "WordPress içerik yönetim sistemi" (WordPress Foundation, San Francisco, CA, ABD) kullanılarak hazırlanmıştır. Alt linklerde yer alan ölçek formları, beden kitle indeksi hesaplayıcısı, Finlandiya Diyabet Risk Anketi (FINDRISK) tabanlı diyabet risk hesaplayıcısı ve iletişim formları araştırmacı tarafından "PHP 7.4" (The PHP Group, ABD), "HTML5" (WHATWG, ABD) ve "CSS3" (World Wide Web Consortium, Cambridge, MA, ABD) programlama dilleri kullanılarak oluşturulmuştur. Tüketici Sağlığı Bilgileri için Kalite Kriterleri ölçüm aracı (DISCERN) ile toplanan veriler "MySQL 8.0 veri tabanı" (Oracle Corporation, Austin, TX, ABD) üzerinde depolanmıştır. Web sayfasında kullanılan görseller ve videolar içerik sahiplerinden izin alınması sonrası web sayfasına entegre edilmiştir. Web sayfasından görseller Şekil 1'de gösterilmiştir.

Veri Toplama Araçları

Veri toplama işlemi, araştırmacı tarafından üç farklı araç kullanılarak yapılmıştır. Bunlar, Tanımlayıcı Özellikler Veri Toplama Formu, SUS ve DISCERN formudur.

DISCERN Ölçeği: Prediabe-T^{R} web sitesinin kalitesi, DISCERN aracılığıyla değerlendirilmiştir. Sağlık sorunları için tedavi seçenekleri hakkında yazılı bilgi veren elektronik materyallerin kalitesini değerlendiren bu araç, 1999 yılında Charnock ve arkadaşları[8] tarafından geliştirilmiştir. 16 maddeden oluşan genel puanlama 15 ile 75 arasında değişmektedir. Her madde 1 ile 5 arasında değerlendirilir.



Şekil 1. PREDIABE-T^{R} web sayfası görüntüleri

Genel değerlendirmeyi sağlayan 16. madde ayrıca değerlendirilir. Düşük puanlar kalitenin zayıf olduğunu gösterirken, yüksek puanlar iyi kaliteyi işaret eder. DISCERN, 2003 yılında Gökdoğan[9] tarafından Türkçeye uyarlanmıştır. Prediabe-T^{R} web sitesinin kapsamı ve kalitesi, diyabet ve prediyabet konularında uzman sağlık uzmanları tarafından bağımsız olarak değerlendirilmiştir. Uzmanlar kapsamı 1'den 5'e kadar olan aralıkta puanlamıştır. 1 "hayır" 2 "evet" şeklinde temsil etmektedir.

Sistem Kullanılabilirlik Ölçeği (SUS): Prediabe-T^{R} web sitesinin uzman olmayan hastalar için kullanım kolaylığı, prediyabet hastaları tarafından web sitesi kullanıcılarının memnuniyetini değerlendirmek için oluşturulan bir araç olan Sistem Kullanılabilirlik Ölçeği (SUS) aracılığıyla değerlendirilmiştir. Bu ölçek, "Kesinlikle katılmıyorum"'dan "Kesinlikle katılıyorum"'a kadar uzanan 5 puanlık likert tipi bir ölçekten oluşan 10 sorudan oluşmaktadır. Ölçekte 2, 4, 6, 8 ve 10 numaralı maddeler ters puanlanmaktadır. Elde edilen puan 2,5 ile çarpılır ve ölçekten 0 ile 100 arasında bir puan alınır. 100'e yakın bir puan, kullanıcı memnuniyetinin yüksek seviyede olduğunu gösterir. Orijinal versiyonu John Brooke[10] tarafından geliştirilen SUS ölçeğinin Türkçe geçerlik güvenirlik çalışması Demirkol ve Şeneler[11] tarafından gerçekleştirilmiştir. SUS Türkçe versiyonunun (SUS-TR) geliştirilmesi ve psikometrik özelliklerinin incelenmesi üzerine yapılan çalışma, kullanıcı deneyimi ve sistemlerin kullanılabilirliğini ölçme ihtiyacını karşılamak amacıyla yapılmıştır. İngilizce olarak geliştirilen ve interaktif sistemlerin algılanan kullanılabilirliğini değerlendirmek için literatürde yaygın olarak kullanılan SUS, Demirkol ve Şeneler'in[11] çalışması ile Türkçeye uyarlanmış ve Türk kullanıcılar için geçerli ve güvenilir bir ölçüm aracı haline getirilmiştir. SUS ölçeğinin Türkçe versiyonunun geliştirilmesi sürecinde, çeviri doğrulama amacıyla iki profesyonel çeviri tekniği kullanılmış ve dört çevirmen görevlendirilmiştir. Bu süreç sonunda SUS-TR, 324 üniversite öğrencisine uygulanmış ve yüksek düzeyde güvenilirliği olduğu tespit edilmiştir. Ayrıca, doğrulayıcı faktör analizi ile SUS-TR'nin iki faktörlü yapısı başarılı bir şekilde ortaya konmuştur. Çalışmanın sonuçları, SUS-TR'nin kullanılabilirliği ölçmek için güvenilir ve geçerli bir araç olduğunu ve orijinal İngilizce versiyonuyla tutarlı psikometrik özelliklere sahip olduğunu göstermiştir. İlgili çalışma, Türkiye'deki kullanıcıların sistem kullanılabilirliğini ölçmede kullanabilecekleri geçerli ve güvenilir bir araç sağlamakta ve böylece Türk araştırmacıların, Türk katılımcılarla ilgili SUS kullanarak araştırma yapmalarına olanak tanımaktadır. SUS-TR'nin geliştirilmesi ve değerlendirilmesi süreci, ilgili literatürde belirtilen metodolojik adımları takip ederek, çeviri ve psikometrik değerlendirme aşamalarını kapsamlı bir şekilde içermektedir.[11]

İstatistiksel Analiz

DISCERN ile görüş bildiren uzmanların uyumlulukları Kendal uyum katsayısı ile hesaplanmış ve ifade edilmiştir. Uzmanlar tarafından sunulan değerlendirme kalite ve içerik olarak yorumlanmıştır. Web sitesinin kullanılabilirliği katılımcılar tarafından SUS anketinin doldurulması ile uzmanlar tarafından ise DISCERN anketinin doldurulması ile ortaya konmuştur. SUS'tan 0-100 arası puan alınabilmektedir. Web sitesinin kullanımı içerik ve yüzde değerleri ile ölçülmüştür.

Araştırmanın Etik Yönü

Araştırma, Helsinki Deklarasyonu prensiplerine uygun yapılmıştır. Araştırma için gerekli etik kurul izni Kütahya Sağlık Bilimleri Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurul'undan (16.11.2022 tarih ve E-41997688-050.99-73146 sayılı) ve Kütahya Evliya Çelebi Eğitim ve Araştırma Hastanesinin başhekimliği tarafından kurum izni (30.11.2023 tarih ve E-87416368-604.01.99-229834405 sayılı) araştırmaya başlamadan önce alınmıştır. Araştırma verileri toplanırken katılımcılardan gönüllü olur formu dijital alınmıştır.

Uzman Görüşü ve Değerlendirilmesi

Geliştirilen web sayfası sağlık profesyonellerinin yanı sıra, sağlık iletişimi, bilişim ve sosyal medya uzmanlığı alanında çalışmaları olan 10 uzman tarafından Davis tekniği[12] ile içeriğinin uygunluğu ve kapsam geçerliliği (KGI) açısından değerlendirilmiştir (Tablo 1). Başlangıçta 16 madde ile DISCERN ölçeği alınmıştır. KGI uzman görüşlerinin Microsoft excel programına aktarılmasıyla hesaplanmıştır. Hesaplanan KGİ 0,93'tür. Uzman görüşleri arasında uyumsuzluk bulunmamıştır (W=0,001, *P*>,05).

Tablo 1. Web Sayfasının İçeriğine İlişkin Uzmanların Ortalama Standart Sapma ve Median Puanları

Uzman Listesi (N=10)	Ort±SS	Median
1. Uzman (İç hastalıkları uzmanı)	5±0	5
2. Uzman (Aile Hekimi)	4,5±0,8	5
3. Uzman (Diyabet Hemşiresi)	5±0	5
4. Uzman (Aile Sağlığı Hemşiresi)	5±0	5
5. Uzman (Aile Sağlığı Hemşiresi)	5±0	5
6. Uzman (Halk Sağlığı Hemşiresi bilim uzmanı)	5±0	5
7. Uzman (Diyetisyen)	4,1±0,7	4
8. Uzman (Sağlık iletişimi)	5±0	5
9. Uzman (İç hastalıkları uzmanı)	4,7±1	5
10. Uzman (Sosyal medya- Bilişim)	5±0	5

SS; Standart sapma, Ort: ortalama

BULGULAR

Web sayfasının kullanılabilirliği % 45,3'ü (n=24) kadın, % 54,7'si (n=29) erkek, %60,4'ü ilköğretim (n= 32) mezunu, %35'i (n=19) ev hanımı, %24,5'i (n=13) emekli ve yaş ortalaması 55±8,4 (40-65 yaş arası) olan katılımcılar tarafından değerlendirilmiştir.

Tablo 2'de uzmanların PREDIABE-T^{R} web sayfasına ilişkin DISCERN Ölçeği puan ortalamaları yer almaktadır. Web sayfasının güvenirlik ve kalitesine ilişkin DISCERN ölçeği toplam puan ortalaması 72,7±4,3 olarak bulunmuştur.

Tablo 2. Uzmanların Prediabe-T^{R} Web Sayfasının Güvenirlik ve Kalitesine İlişkin DISCERN Ölçeği Puanları

DISCERN ölçeği boyutları	Sorular	Ort. ± SS	Min-Maks.
Güvenirlik	1-8 sorular	33,4±2,8	27-35
Bilgi Kalitesi	9-15 sorular	39,3±1,6	35-40
Genel kalite	16.madde	4,8±0,4	4-5
Toplam	1-15 sorular	72,7±4,3	62-75

Ort.; Ortalama, SS; Standart sapma, Min; Minimum, Maks; Maksimum

Tablo 3'te prediyabetli 53 katılımcının Prediabe-T^{R} web sayfasının kullanılabilirliğine ilişkin (SUS ölçeği ile) ortalama ve ortanca değerleri bulunmaktadır. Prediyabetli katılımcıların SUS total skoru 100 puan üzerinden 67,6 olarak hesaplanmıştır. Katılımcılar her bir maddeye 4 puan üzerinden ortalama 2,7 puan vermişlerdir. Prediyabeti olup web sayfasını değerlendiren katılımcıların açık uçlu sorulara verdikleri yanıtlar Tablo 4'te verilmiştir.

Tablo 3. Prediabe-T^{R} Web Sayfasının Kullanılabilirliğinin Değerlendirilmesi

Sistem Kullanılabilirlik Ölçeği (SUS ölçeği) soruları (N=53)	Ort±SS	Median
1. Bu web sayfasını sıklıkla kullanacağımı düşünüyorum.	2,0±0,9	2,0
2. Web sayfasını çok karışık buldum.	2,8±1,0	3,0
3. Web sayfasının kullanımını kolay buldum.	2,9±0,8	3,0
4. Web sayfasının kullanımı için teknik desteğe ihtiyaç duyabileceğimi düşünüyorum.	2,4±1,2	3,0
5. Web sayfasının çeşitli özelliklerini birbiri ile iyi entegre edilmiş olarak buldum.	2,6±0,6	3,0
6. Web sayfasının tutarsız olduğunu düşünüyorum.	3,2±0,6	3,0
7. Web sayfasının kullanımını çoğu kişinin hızlı bir şekilde öğreneceğini düşünüyorum.	3,0±0,9	3,0
8. Web sayfasını çok kullanışsız buldum.	3,3±0,6	3,0
9. Web sayfasını kullanırken kendimi rahat hissediyorum.	2,3±0,8	2,0
10. Web sayfasını çok karışık buldum.	2,0±1,2	2,0
Total skor: 67,6		

SS; Standart sapma, Ort: ortalama

Tablo 4. Prediabe-T^{R} Web Sayfasına İlişkin Katılımcıların Görüşleri

Prediabe-T^{R} web sayfasının en beğenilen özellikleri	Prediabe-T^{R} web sayfasının en beğenilmeyen özellikleri	Prediabe-T^{R} web sayfasında olması istenen özellikler
Anlaması kolay, okunaklı.	Akıllı telefon kullanmakta iyi olmadığım için siteye girmekte zorlanabilirim.	Açıklayıcı olmalı. Her yaş grubuna hitap etmiyor bence.
Anlaşılır.	Bazı kelimelerin anlamını bilmiyorum.	Anlaşılır olması
Anlaşılır.	Bazı terimler yabancı geliyor	Daha açıklayıcı olabilirdi.
Bizim kesimimize hitap eden kullanışlı bir site.	Ben yaşlı bir bireyim. Bazı kelimelerin anlamını bilmiyorum.	Daha açıklayıcı olması
Çok güzel düşünülmüş. Faydalı olacağına inanıyorum.	Daha açıklayıcı olabilirdi.	Farklı parametrelerin ölçümü de gerçekleştirilebilirdi.
Faydalı	Daha detaylı olabilirdi.	İleri yaş grubuna daha çok hitap edecek şeyler eklenebilir.
Faydalı, sağlıklı bilgiler var.	Göz yoruyor.	Kolay erişilmesi, Google'a yazınca hemen çıkması
Gayet başarılı, insanların kullanması için uygun	Göze hitap etmiyor.	Kullanacağımı düşünmüyorum.
Görünüşü güzel, faydalı.	Her yaş grubu anlayabilir mi emin değilim?	Kullanım sonrasında ortaya çıkar onlar.
Güzel	Nasıl ulaşacağımı bilmemek, arama motoru kullanmakta güçlük çektim	Yaşlı bireylerin de anlayabilmesi için daha açıklayıcı olabilirdi.
Güzel beğendim.	Öğrenmesi zor.	Yaşlılar için daha basit olmalı.
Güzel düşünülmüş, beğendim.	Renkler.	Yaşlılar için okumakta zorluk çekiyorum. Biraz sesli okuma sunulabilirdi.
Güzel görünüyor, faydalı.	Şuan bir şey diyemeyeceğim.	Yazı boyutunu değiştirme.
Güzel, kullanışlı ama ben kullanmam büyük ihtimalle.	Yazılar küçük, büyütülebilir olmalı.	
Her şeyin açıklayıcı olması.	Yazıların gözümü alması	
İnsanlara bilgi vermek için güzel düşünülmüş.	Zor öğrenirim.	
İnsanların bilinçlenmesi ve kendini kontrol edebilmesi çok güzel birşey.		
İnsanların günlük hayatta kullanabileceği, kolay bir site.		
İyi bir amaçla yapılmış.		
Kendi başıma test yapmayı sevdim.		
Kolay öğrenilebilir.		
Kullanımı kolay, anlaşılır, yaşıma uygun.		
Kullanımı kolay, anlaşılır.		
Kullanımı kolay, ulaşılabilir.		
Kullanımı kolay.		
Kullanımı ve takibi kolay, farkındalık oluşturur.		
Kullanışlı		
Kullanışlı ve anlatımı kolay		
Kullanışlı, güzel bir amaca hizmet ediyor.		
Kullanışlı, kolay		
Kullanması kolay.		
Öğrenmesi basit, faydalı		
Öğrenmesi ve erişimi kolay		
Öğretici bilgilerin yer alması.		
Tasarımı güzel.		
Ulaşılabilir ve sağlığa yararı var.		
Ücretsiz ve güzel olması		
Yararlı bilgiler içeriyor.		
Yararlı bilgiler içermesi		
Yararlı içerikleri var		
Yararlı, kullanımı kolay, sade ve anlaşılır.		

TARTIŞMA

Bizim bilgilerimize göre bu çalışma prediyabetli bireyler için Türkçe geliştirilen mobil uyumlu ilk web sayfasıdır. Geliştirilen Prediabe-T^{R} web sayfası hem ilgili alanda çalışan uzmanlar tarafından içerik ve kalite açısından hem de prediyabet tanısı alan katılımcılar tarafından kullanılabilirlik açısından değerlendirilmiştir. Profesyonel alanları farklı olan uzmanlar oluşturulan web sayfasının içeriğini uygun bulup kalitesini mükemmel derecede değerlendirirken, prediyabeti olan kullanıcılar Prediabe-T^{R} web sayfasını kabul edilebilir düzeyde kullanılabilir bulmuşlardır.

Prediabe-T^{R} web sayfasının oluşturulmasındaki amaç

prediyabetli bireylere hastalığın kontrolü, belirtileri, yaşam biçiminin iyileştirilmesi için bilgiler sunmaktır. Web sayfasında prediyabetli bireylere yönelik olarak beslenme, fiziksel aktivite, prediyabeti öğrenelim, komplikasyonlar, tanı ve tedavi ile sıkça sorulan sorulara yer verilmiştir. Bilgilendirmelerin amacı prediyabetli bireylerin öz farkındalıklarını, özyönetimlerini öğrenmelerini sağlamaktır. Uzmanların değerlendirmeleri sonucu hesaplanan kapsam geçerlik indeksi puanı oluşturulan içeriğin oldukça uygun olduğunu göstermektedir. Kapsam geçerliliği esasen ölçek geliştirme süreçlerinde ölçek maddelerinin uygunluğunu değerlendirmek amacıyla uzmanlardan alınan görüşleri analiz ederek kapsamın ne kadar uygun olduğunu değerlendirmektedir.[13] Bu yaklaşım içerik uygunluğunu değerlendirdiği için bu çalışmada prediyabet hakkında yazılan içeriğe ilişkin görüş verebilecek farklı profesyonellerin Prediabe-T^{R} web sayfasının kapsamını değerlendirmesi amacıyla kullanılmıştır.

Oluşturulan web sayfasının genel kalitesi, güvenirliği ve bilgi kalitesi uzmanlar tarafından DISCERN ölçeği ile değerlendirilmiştir. DISCERN total skorunun 40 puan ve üzerinde bir değer alması, sağlık bakım materyalinin yüksek düzeyde uygun olduğunu göstermektedir.[14] Bu çalışmada, 15 soruya verilen ortalama puan 75 üzerinden neredeyse tam puan (72,7) almıştır (Tablo 2). Bir diğer çalışmada, 22 hastaneden cerrahi kliniklerindeki bireyler için hazırlanan 59 eğitim materyalinin kalitesi DISCERN ile değerlendirilmiştir ve 75 üzerinden 42,5 puan alındığı.[15] Farklı 18 web sayfasının okunabilirlik, doğruluk ve güvenirliğinin incelendiği bir çalışmada, DISCERN skoru 80 üzerinden 60 olarak belirlenmiştir.[16] Hasta aileleri için hazırlanan bir web sayfası uzmanlar tarafından değerlendirildiğinde DISCERN skoru 75 puan üzerinden 65,3 bildirilmiş ve web sayfası güvenli olarak nitelendirilmiştir.[17] Literatürde DISCERN skoru 16 sorunun tamamı birlikte değerlendirildiğinde 80 puan üzerinden yorumlanmaktadır. Bir diğer çalışmada web sayfasındaki bilgilerin güvenirliği ve kalitesi 10 bağımsız uzman tarafından DISCERN ile incelenmiş, alınan bu skor kalite ve geçerlilik için onaylanmıştır. Aynı çalışmada uzman görüşleri uyumlu bulunmuş ve web sayfası aile bakım vericileri tarafından güvenli olarak nitelenmiştir.[17] Bu çalışma kapsamında oluşturulan web sayfası DISCERN puanı ile değerlendirildiğinde kalitesinin oldukça iyi olduğu belirlenmiştir. Prediabe-T^{R} web sayfasının DISCERN ile değerlendirmesini yapan 10 uzmanın görüşleri arasında bir uyuşmazlık saptanmamıştır.

Bu çalışmada Prediabe-T^{R} web sitesinin kullanılabilirlik puanı (SUS) 100 üzerinden 67,6 bulunmuştur (Tablo 3). SUS'ta yüksek puan kullanılabilirlik düzeyinin arttığının 65-70 arası web sitesinin kullanılabilir olduğunu gösterirken 70 puan üstü iyi, 85 puan kullanılabilirliğin mükemmel düzeyde seyrettiğine işaret etmektedir.[18,19] Bu çalışmadaki puan ortalamasına göre göre oluşturulan Prediabe-T^{R} web sitesinin geliştirilmesi gereken yönleri bulunmaktadır. Katılımcıların web sayfasında zorlandıkları geliştirilmesi gereken alanlara ilişkin görüşleri incelendiğinde (Tablo 4), bazı eleştiri ve önerileri (örneğin; web sayfasının yaşlıların kullanımı için daha kolay olması, kullanılan bazı kelimelerin anlamlarının bilinmemesi, yazıların okunabilmesi için büyütülmesinin istenmesi, web sayfasına arama motorlarından ulaşılabilmesi) SUS'tan kabul edilebilir değerin altında alınan puanı açıklamaktadır. Çalışma grubunun yaklaşık yarısının eğitiminin ilköğretim düzeyinde, çalışmayan, emekli, mavi yakalı işlerde çalışıyor olması Prediabe-T^{R} web sayfasının kullanılabilirliğini olumsuz etkilemiş olabilir. Literatürde günlük yaşamda kullanılan 14 farklı yazılım programı ve teknolojisi (Excel, GPS, Digital video recorder, PowerPoint, Nintendo Wii, iPhone, Amazon, ATM, G-Mail, Microwaver, Landline, Browser, Google Search) SUS skorundan 80,2 puan almıştır. Bir diğer çalışmada[20] beslenme eğitimi ve kişisel beslenme programına dayalı web sayfasının SUS skoru 88,7 iken bir diğerinde hemşire-birey eğitim programına dayalı web sayfasının SUS skoru 91 olarak bildirilmiştir.[21] Prediabe-T^{R} web sayfası araştırmacılar tarafından amatörce geliştirilmiş ve eğitim düzeyi düşük bir grup tarafından değerlendirilmiştir. Katılımcıların verdiği öneriler dikkate alınarak kullanılabilirliğinin iyileştirilebileceği düşünülmektedir.

Araştırmanın Sınırlılıkları

Araştırmanın en önemli sınırlaması, sadece bir şehirde yalnızca bir merkeze başvuran, 40 yaş ve üzeri prediyabetli bireylerin çalışmaya dahil edilmesidir. Bu durum, araştırmanın genel geçerliği açısından bir kısıtlama teşkil etmektedir.

Bu çalışmanın sonucunda prediyabetli bireyler için geliştirilen ilk Türkçe web sayfasının kapsamı ve kalitesi mükemmel derecede bulunmuştur. Prediyabet tanısı olan 40-65 yaş arası katılımcılar Prediabe-T^{R} web sayfasının kullanılabilir olduğunu değerlendirmişlerdir. Gelecek çalışmalarda her eğitim ve yaş düzeyindeki bireylerin kullanımını için okunabilirliğini kolaylaştırmak amacıyla yazı büyüklüğü düzenlenebilir, Prediabe-T^{R} web sayfasına genel arama motorlarından ulaşımı için kısa yollar geliştirilebilir. Web sayfasındaki içeriklerin eğitim düzeyi düşük bireyler için okunabilirliğini artıracak değerlendirmeler ve düzenlemeler yapılabilir. Gelecek araştırmalarda oluşturulan web sayfasının prediyabetli bireylerin bilgilenmesine ve öz yönetimine/düzenlemesine ilişkin etkileri değerlendirilebilir.

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KAYNAKLAR

1. American Diabetes Association. Standards of Medical Care in Diabetes. *Clin Diabetes*. 2022;40(1):10-38. https://doi.org/10.2337/cd22-as01
2. International Diabetes Association. Diabetes atlas 9th edition. Accessed July 20, 2024. https://diabetesatlas.org/atlas/ninth-edition/?dlmodal=active&dlsrc=https%3A%2F%2Fdiabetesatlas.org%2Fidfawp%2Fresource-files%2F2019%2F07%2FIDF_diabetes_atlas_ninth_edition_en.pdf&dlmodal=active&dlsrc=
3. Muscogiuri G, Barrea L, Di Somma C, et al. Patient empowerment and the Mediterranean diet as a possible tool to tackle prediabetes associated with overweight or obesity: A pilot study. *Hormones (Athens)*. 2019;18(1):75-84. https://doi.org/10.1007/s42000-018-0090-9
4. Kuwabara A, Su S, Krauss J. Utilizing digital health technologies for patient education in lifestyle medicine. *Am J Lifestyle Med.* 2019;14(2):137-142. https://doi.org/10.1177/1559827619892547
5. van Buschbach S, van der Meer CA, Dijkman L, Olff M, Bakker A. Web-based peer support education program for health care professionals. *Jt Comm J Qual Patient Saf*. 2020;46(4):227-231. https://doi.org/10.1016/j.jcjq.2019.12.005
6. Gause G, Mokgaola IO, Rakhudu MA. Technology usage for teaching and learning in nursing education: An integrative review. *Curationis*. 2022;45(1):1-9. https://doi.org/10.4102/curationis.v45i1.2261
7. Hyzy M, Bond R, Mulvenna M, et al. System Usability Scale Benchmarking for digital health apps: Meta-analysis. *JMIR Mhealth Uhealth*. 2022;10(8):e37290. https://doi.org/10.2196/37290
8. Charnock D, Shepperd S, Needham G, Gann R. DISCERN: An instrument for judging the quality of written consumer health information on treatment choices. *J Epidemiol Community Health*. 1999;53:105-111. https://doi.org/10.1136/jech.53.2.105
9. Gökdoğan F. Yazılı materyallerin kalitesinin gözden geçirilmesi. *Onkoloji Hemşireliği Derneği Bülteni*. 2003;8-16.
10. Brooke J. SUS: A "quick and dirty" usability scale. In: Jordan PW, Thomas B, Weerdmeester BA, McClelland AL, eds. Usability Evalution in Industry. London: Taylor and Francis;1996:1-7.
11. Demirkol D, Şeneler Ç. A Turkish translation of the system usability scale: The SUS-TR. *UÜ Sosyal Bilimler Dergisi*. 2018;11(3):237-253. http://dx.doi.org/10.29217/uujss.495
12. Davis LL. Instrument review: Getting the most from a panel of experts. *Appl Nurs Res*. 1992;5:194-197. https://doi.org/10.1016/S0897-1897(05)80008-4
13. Yeşilyurt S, Çapraz C. Ölçek geliştirme çalışmalarında kullanılan kapsam geçerliği için bir yol haritası. *EUJEF*. 2018;20(1):251-264. https://doi.org/10.17556/erziefd.297741
14. Khazaal Y, Chatton A, Zullino D, Khan R. HON label and DISCERN as content quality indicators of health-related websites. *Psychiatr Q*. 2012;83(1):15-27. https://doi.org/10.1007/s11126-011-9179-x
15. Demir F, Ozsaker E, Ozcan Ilçe A. The quality and suitability of written educational materials for patients. *J Clin Nurs*. 2008;17(2):259-265.https://doi.org/10.1111/j.1365-2702.2007.02044.x
16. Tirlapur SA, Leiu C, Khan KS. Quality of information on the internet related to bladder pain syndrome: A systematic review of the evidence. *Int Urogynecol J*. 2013;24(8):1257-1262. https://doi.org/10.1007/s00192-013-2091-1
17. Demir Avcı Y, Gözüm S. Evaluation of quality, content, and use of the web site prepared for family members giving care to stroke patients. *CIN*. 2015;33(9):396-403. https://doi.org/10.1097/cin.0000000000000165
18. Bangor A, Kortum P, Miller J. Determining what individual SUS scores mean: Adding an adjective rating scale. *J Usability Stud*. 2009;4(3):114-123. https://uxpajournal.org/determining-what-individual-sus-scores-mean-adding-an-adjective-rating-scale/
19. Brooke J. SUS: A retrospective. *J Usability Stud*. 2013;8(2):29-40. https://www.researchgate.net/publication/285811057_SUS_a_retrospective
20. Bozkurt S, Zayim N, Gülkesen KH, Samur MK, Karaağaoglu N, Saka O. Usability of a web-based personal nutrition management tool. *Inform Health Soc Care*. 2011;36(49):190-205. https://doi.org/10.3109/17538157.2011.553296
21. Uslu E, Buldukoglu K, Zayim N. The usability and effectiveness of a web based nurse patient communication training program. *IJNH*. 2015;1(2):139-145. https://www.researchgate.net/publication/321685699

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Development of the Attitude Scale for Wasteful Behaviors Towards Nurses and Examination of Its Psychometric Properties

Hemşirelere Yönelik Savurgan Davranışlar Tutum Ölçeğinin Geliştirilmesi ve Psikometrik Özelliklerinin İncelenmesi

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ABSTRACT

Objective: This study aims to develop the "Nurses' Wasteful Behaviors Attitude Scale" as a new measurement tool to evaluate the attitudes of nurses' wasteful behaviors.
Methods: In the final phase of this three-phase study, a comprehensive literature review was conducted to create a new item pool of 52 items to minimize potential biases in the scale items and to communicate effectively with nursing professionals. Following the content validity results, a 50-item scale draft was obtained. Data were obtained online from 500 nurses between February and September 2023.
Results: The content validity index of the scale stands at 0.96. Following the exploratory factor analysis, it was determined that the scale comprises 30 items distributed across five sub-dimensions, which collectively account for 58.17% of the total variance. Moreover, the Cronbach's alpha coefficient yielded a value of .93.
Conclusion: The scale has high internal consistency, time invariance, and high fit indices. This scale can help take initiatives to prevent wasteful behaviors in the hospitals and ensure sustainability.

Keywords: Attitude Scale, Wasteful Behaviors, Nurses, Psychometric Properties, Scale Development

ÖZ

Amaç: Bu çalışma, hemşirelerin savurgan davranışlarına yönelik tutumlarını değerlendirmek amacıyla yeni bir ölçüm aracı olarak Hemşirelere Yönelik Savurgan Davranışlar Tutum Ölçeğinin geliştirilmesini amaçlamaktadır.
Yöntemler: Üç fazdan oluşan bu çalışmanın, son aşamasında, kapsamlı bir literatür taraması yapılarak, ölçek maddelerindeki olası yanlılıkları en aza indirmek ve hemşirelik profesyonelleriyle etkili bir şekilde iletişim kurmak için 52 maddeden oluşan yeni bir madde havuzu oluşturuldu. Kapsam geçerliliği sonuçlarının ardından 50 maddelik ölçek taslağı elde edildi. Şubat-Eylül 2023 tarihleri arasında 500 hemşireden online olarak veri elde edildi.
Bulgular: Ölçeğin kapsam geçerlik indeksi 0,96'dır. Açımlayıcı faktör analizi sonucunda ölçeğin beş alt boyuta dağılmış 30 maddeden oluştuğu ve bunların toplam varyansın %58,17'sini açıkladığı belirlenmiştir. Ayrıca Cronbach alfa katsayısı .93 değerini vermiştir.
Sonuç: Ölçek yüksek iç tutarlılığa, zamanla değişmezliğe ve yüksek uyum indekslerine sahiptir. Bu ölçek, hastanelerde savurgan davranışlarının önlenmesine ve sürdürülebilirliğin sağlanmasına yönelik girişimlerde bulunulmasına yardımcı olabilir.

Anahtar Kelimeler: Tutum Ölçeği, Savurgan Davranışlar, Hemşireler, Psikometrik Özellikler, Ölçek Geliştirme

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INTRODUCTION

Today, it is observed that health expenditures are increasing in all countries. According to the Organization for Economic Cooperation and Development (OECD) data, this increase is higher than the countries' economic growth rates.[1] Therefore, the increase in health expenditures becomes a pressure factor in countries' budgets.[2] The study published by the OECD revealed that 20 percent of health expenditures do not contribute to health and are spent due to wasteful behaviors.[1]

Wasteful behaviors represent a significant challenge within the healthcare expenditures, posing formidable obstacles to their eradication. The *Turkey Waste Report* published in 2021 states that eliminating wasteful behaviors will open the door to new investments. The report refers to preventing wasteful behaviors by raising living standards in the country and reducing foreign dependency.[3] Similarly, the tenth development plan includes regulations on wasteful behavior, revealing the issue's importance.[4]

The literature indicates that wasteful behaviors, often learned and persistent, increase health resource consumption and hinder efficient, high-quality service delivery.[5] Such unconscious resource use is a global issue, prevalent in health and other sectors.[6] Notably, wealthy countries, home to one-fifth of the population, consume a large share of resources, with wasteful behaviors becoming more widespread.[7] Efficient resource use in hospitals is viewed as a key step in minimizing their environmental impact.[8]

When recent studies on healthcare systems are examined, it is noted that wasteful behaviors are challenging to identify clearly but are deeply entrenched. Similarly, when the health expenditures of the European Union countries are examined, it is revealed that wastefulness is $760 and $935 billion.[9] By nature, hospitals strive to be cost-effective and efficient while providing high-quality services. However, the cost of providing healthcare services on a global scale is increasing.[10]

In a report published in September 2021 by *Health Care Without Harm*, the healthcare sector was likened to the fifth largest country on the planet in terms of carbon emissions when disposable materials and medical waste are considered. In the same report, it is estimated that the negative impacts of healthcare services will nearly triple by 2050. The report, which reveals the global impacts of health expenditures, states that it is imperative to explore different ways of delivering health care services.[11] Similarly, it is stated that hospitals constitute the highest proportion, with a share of 49.5% among the health institutions used to purchase health products and services.[12]

Health expenditures contribute to negative local and global impacts. Raising health professionals' awareness of wasteful behaviors is essential in addressing this issue.[13] Recently, lean management practices have been introduced to reduce unnecessary and repetitive procedures.[14] However, understanding attitudes toward waste is necessary before implementing these techniques.[15] Nurses are crucial for resource efficiency, waste reduction, and hospital effectiveness, making their awareness and leadership vital for healthcare sustainability.

When the literature on the subject is examined, although evidence of wasteful behaviors has been documented, no measurement tool will reveal what wasteful attitudes and behaviors are, how to eliminate them, and the attitudes of nurses toward wasteful behaviors in hospitals.[16]

AIM

This study was developed for nurses working in hospitals to determine their attitudes toward wasteful behaviors.

Research Question

The study aimed to address the question,

- Is the NWBAS a valid and reliable measurement tool for assessing wasteful behaviors among nurses?

METHODS

Design

This methodological study aimed to develop a new instrument tool, the Nurses Wasteful Behaviors Attitude Scale (NWBAS), to assess nurses' attitudes toward wasteful behaviors. The stages of the study are detailed in Figure 1.

Place and Time of the Study: It was conducted between December 2021 and September 2023 with nurses working in hospitals in Istanbul.

Population and Sample of the Study: The study population consisted of nurses employed in the specified hospitals during the period of 2021-2023. The individual-item ratio was considered when calculating the sample size.[17,18] Based on this ratio, a sample size equivalent to 5-20 times the number of items was established. Without any sampling method, 500 nurses who volunteered to participate in the study and completed the research form completely participated in the study.

Different sample groups were studied at each stage of the study to increase the evidential value of the results. The 50-item scale draft was applied to 20 nurses during the pilot study. In the validity and reliability phase of the scale, the

EFA, CFA, and internal consistency phases were completed with 250 and 250 nurses, and the test-retest phase was completed with 30 nurses.

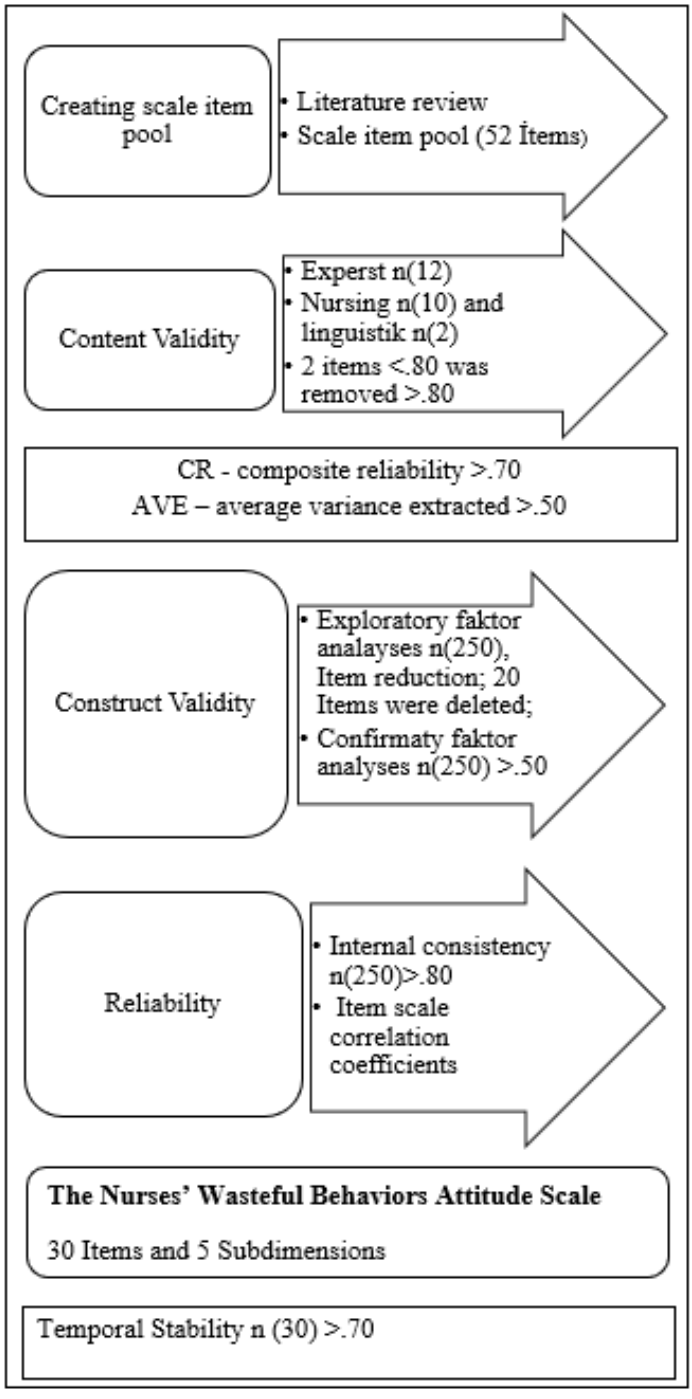


Figure 1: Stages of developing "The Nurses' Wasteful Behaviors Attitude Scale"

Working group

The personal and professional characteristics of the nurses in the quantitative phase of the study are as follows: The majority of participants were female (74.8%), with approximately half of them being married (55.0%) and holding a licence degree (70.2%). Analysis of the participants' mean age revealed that 19.4% were aged 30 or below, 45.8% were between 31 and 40 years old, and 34.8% were over 40 years old. A significant proportion of participants (42.7%) were employed at the university hospital, with 80.2% working as service nurses. Additionally, participants' socio-economic levels were predominantly categorized as medium (43.7%) and low (38.0%).

Data Collection Tools: In data collection, "*Personal Information Form*" and "*NWBAS*" draft were used.

Personal Information Form: In this form, answers were sought to 7 questions questioning the age, gender, marital status, socio-economic level, education level, institution, and position of the participants.

Nurses Wasteful Behaviors Attitude Scale* (*NWBAS) Draft: In the scale study, which was developed by Mat in 2020 and created in his doctoral dissertation, the scale item pool was created in line with the data of individual in-depth interviews conducted with 60 healthcare professionals for at least 40 minutes. The new draft created after expert opinion consists of 52 items.

Creation of item and item pool

The NWBAS was developed through a comprehensive three-phase mixed-methods approach.

Phase 1. *A Qualitative Investigation of the Opinions of Healthcare Workers on Waste in Hospitals*

Initially, a qualitative inquiry was conducted across three distinct hospital settings to capture diverse viewpoints. This involved conducting in-depth interviews with 60 healthcare professionals employed in a university hospital, a state hospital, and a private hospital between May and September 2019, allowing for a thorough exploration of their attitudes towards wasteful behaviors. The data was used to develop a draft scale measuring wasteful attitudes.

Phase 2. *Healthcare Workers on Waste in Hospitals and Development of the Attitude Scale*

In the next stage, the draft scale obtained in January-March 2020 was applied to 408 health professionals in the same sample.[19] As a result of exploratory factor analysis, a scale consisting of 5 factors and 24 items was obtained. The results were published as a doctoral thesis study of "A Qualitative Investigation of the Opinions of Healthcare Workers on Waste in Hospitals and Development of the Attitude Scale on Waste" conducted by Mat as a doctoral thesis study in 2020[20]. In the final stage of the study, the first version of the 24-item scale was created by supporting current literature information.

Phase 3. *Development of the Attitude Scale for Wasteful Behaviors Towards Nurses*

In the final stage, the new version of the scale, developed with healthcare professionals and focused on the nurse sample, was developed by conducting a comprehensive literature review. The aim was to create an item pool independent of the dominant perspectives of researchers in qualitative research and working with nurses. At the end of the study, the draft, consisting of 52 items, was evaluated by 12 expert opinions. After content validity, a draft scale consisting of 50 items was created. The draft obtained in February-September 2023 was applied to a different sample of 500 people, consisting only of nurses. New ethics committee approval was obtained for the new version of the scale.

Data Collection

After obtaining the necessary permissions, the data collection process was conducted using an online platform, specifically Google Forms. Participants were provided with a survey or interview form that did not contain personal information and measures were taken to ensure their privacy. The link to the form was distributed through email, social media, and other communication channels. Prior to completing the form, participants were informed about the purpose and significance of the research, emphasizing that their participation was voluntary. The form consisted of clear and understandable questions, with instructions provided for accurate responses. Support channels were provided for participants in case of any issues. Throughout the data collection process, the confidentiality and data security of participants were ensured, and measures were taken to comply with relevant legal regulations regarding the protection and processing of personal data. Aside from the participants involved in the test-retest phase, 30 nurses were tasked with physically distributing and collecting questionnaire forms twice, separated by a 2-week interval. Uniqueness was ensured by assigning numbers to the questionnaire forms of the 30 nurses providing the data.

The research was previously presented at a conference under the title "Development and Validation Study of the Attitude Scale Towards Waste in Healthcare Workers." However, based on suggestions indicating that the sample predominantly consisted of nurses, the scale was revised to specifically measure the attitudes of nurses. Consequently, 3 non-nurse healthcare personnel were removed from the sample. This change required the renewal of ethical committee approval.

Statistical Analysis of Data

The data acquired from the study underwent analysis utilizing SPSS (Statistical Package for Social Sciences) for Windows 22.0 and AMOS 25 software. Descriptive statistics, encompassing numbers, percentages, means, and standard deviations, were employed to scrutinize the demographic characteristics of the participants. Correlations, specifically the Pearson moment correlation, and psychometric tests, including content validity ratio and item-total correlation, were conducted.

To evaluate the content validity of the scale items, the Item-Content Validity Ratio (I-CVR) and Scale-Content Validity Index (S-CVI) were computed, following the categorization proposed by Davis (1992)[20]. Before delving into reliability and validity assessments, Kurtosis and Skewness values were examined to confirm the normal distribution of scale items.[21]

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were executed to illuminate the construct validity of the scale. Convergent and discriminant validity were assessed through the calculation of Average Variance Extracted (AVE), Composite Reliability (CR), the square root of AVE, and sub-dimension correlations. Additionally, item analysis and retest analysis, specifically the Intraclass Correlation Coefficient (ICC), were performed.

Construct validity

The scales each target distinct conceptual frameworks, including knowledge, attitude, and behavior. In this research, the construct validity of the scale was assessed through EFA with one sample group (n: 250) and CFA with another sample group (n: 250).[22] The suitability of the scale items was determined using the Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's test. During the EFA phase, items with factor loadings below 0.50 and those loading on multiple dimensions were eliminated from the scale.[23]

The Cronbach's alpha coefficient was computed to assess both the item-total correlation coefficient and the internal consistency coefficient of the items across the various dimensions of the scale. During the calculation of the Cronbach's alpha value, 20 items that did not align well with their respective dimensions were excluded.[24, 25] Additionally, the Comparative Fit Index (CFI) in CFA was utilized to scrutinize the relationships between the dimensions and constructs of the scale draft. Moreover, the convergent and discriminant validity of the scale were assessed.

Ethical considerations

Ethical approval for the final phase was obtained from Istanbul Beykent University Scientific Research for Social and Human Sciences and Publication Ethics Board (Approval Number: 152, Date: 02/12/2021), and additional approval was obtained after the title revision (Approval Number: 520, Date: 06/03/2024). The ethical clearance encompasses all stages of the study. Participants were

provided detailed information about the study's content and provided consent by signing informed consent forms.

RESULTS

Content validity and the pilot scheme

The new draft scale underwent evaluation by 12 experts in the field of nursing management, comprising one professor, two associate professors, seven nurse specialists with doctoral degrees, and two linguists. These experts assessed the scale items' appropriateness, simplicity, clarity, and uniqueness concerning the intended measurement. The content validity index (CVI) was utilized for this assessment, where items were rated on a scale of 1 to 4: 1 = inappropriate, 2 = appropriate but in need of revision, 3 = appropriate but subject to change, and 4 = appropriate. The goal was to achieve a content validity index of at least 0.80, successfully attained in this study with a CVI > 0.80.[25] Two items with CVI < 0.80 were removed from the draft scale during the evaluation process, resulting in a final scale comprising 50 items.

Subsequently, the finalized draft scale was distributed to 20 nurses possessing similar socio-demographic characteristics for pilot testing in a virtual environment. These individuals evaluated the scale items in simplicity, clarity, comprehensibility, and originality. Since all participants provided positive feedback during this phase, no changes were necessary for the items.[25]

Before reliability and validity, the Kurtosis and Skewness values were examined to determine whether the scale items were usually distributed. In the relevant literature, the results of the kurtosis and skewness values of the variables are considered normal distribution when they are between +1.5 and -1.5[18] and +2.0 and -2.0.[26] This classification shows a normal distribution.

It was ascertained that the scale items exhibited a normal distribution. To elucidate the construct validity of the scale, exploratory factor analysis was employed. The Barlett test (*P*<.001) revealed a significant relationship among the variables subjected to factor analysis. Following the test (KMO=0.892>0.60), it was established that the sample size was adequate for factor analysis.[26]

Utilizing the varimax method in factor analysis ensured the preservation of the inter-factor relationship structure. Following the factor analysis rotation process, items with low factor loadings and co-loadings were removed, and the rotation process was reiterated. Subsequently, the variables were categorized into five factors, elucidating a total explained variance of 58.178%. The factor structure of the scale is delineated in Table 1.

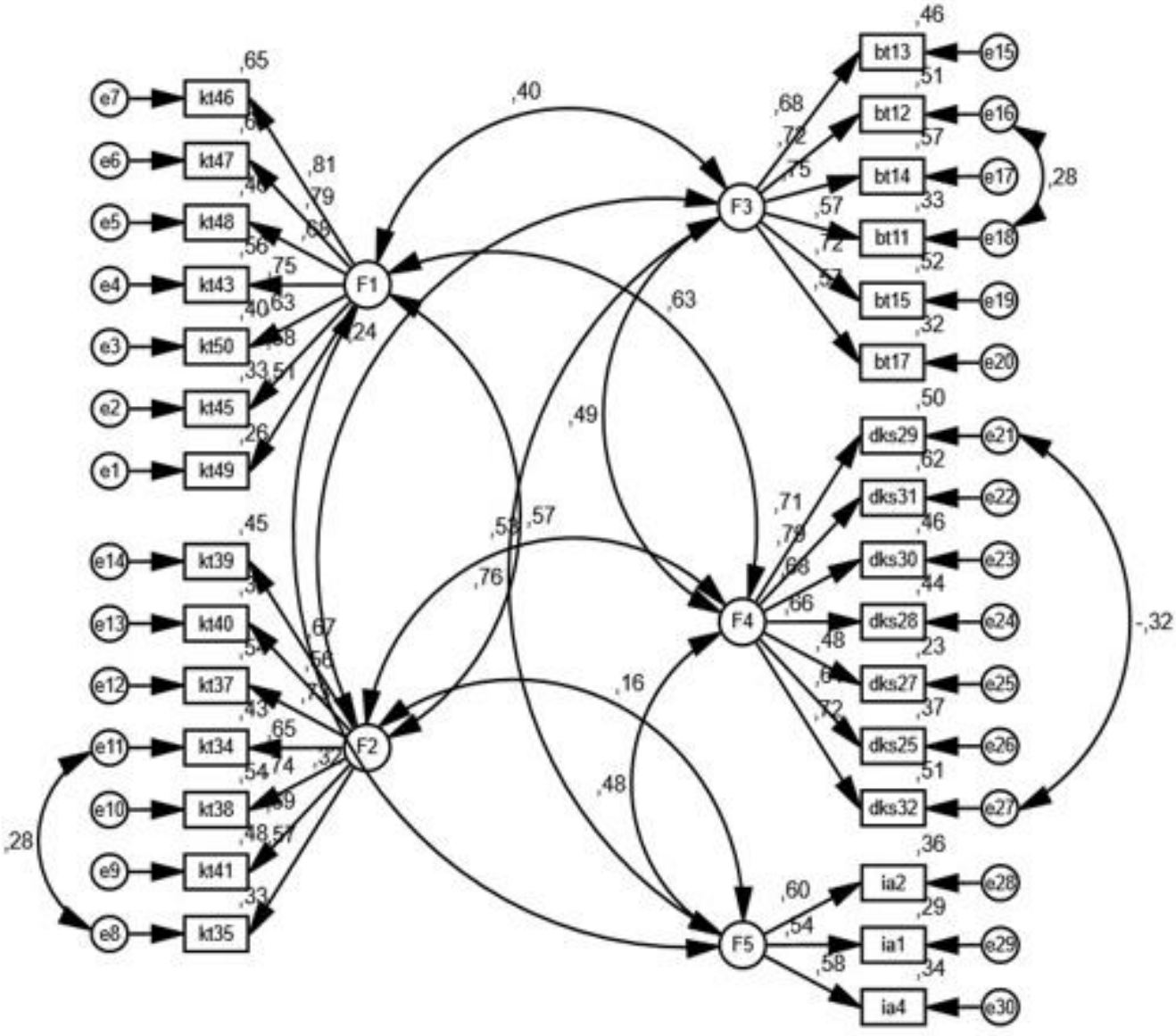
Table 1. Factor Structure

Dimension	Factor Load	Item scale correlation	Item-subscale correlation
Perception of Wastefulness (Eigenvalue=1.272; Explained Variance=7.530; Alpha=0.767)			
Pw2	0.763	0.550	0.579
Pw1	0.717	0.550	0.649
Pw4	0.643	0.606	0.591
Individual attitude (Eigenvalue=2.495; Explained Variance=12.702; Alpha=0.852)			
Ia40	0.740	0.565	0.542
Ia34	0.686	0.561	0.697
Ia37	0.654	0.556	0.655
Ia41	0.653	0.375	0.648
Ia39	0.649	0.491	0.587
Ia38	0.576	0.568	0.617
Ia35	0.560	0.606	0.565
Use of resources (Eigenvalue=10.552; Explained Variance=13.208; Alpha=0.859)			
Ur47	0.711	0.536	0.727
Ur50	0.689	0.469	0.664
Ur46	0.687	0.487	0.636
Ur48	0.674	0.522	0.613
Ur43	0.673	0.455	0.654
Ur49	0.583	0.596	0.588
Ur45	0.518	0.477	0.554
Non-Value Adding Processes (Eigenvalue=1.660; Explained Variance=12.647; Alpha=0.853)			
Nap13	0.789	0.592	0.725
Nap14	0.762	0.609	0.678
Nap17	0.668	0.672	0.626
Nap12	0.643	0.577	0.575
Nap11	0.635	0.593	0.608
Nap15	0.634	0.583	0.634
Organizational Culture of Wastefulness (Eigenvalue= 1.474; Explained Variance=12.091; Alpha=0.832)			
Ocw29	0.716	0.472	0.675
Ocw31	0.680	0.414	0.669
Ocw30	0.671	0.581	0.657
Ocw27	0.666	0.619	0.472
Ocw28	0.587	0.533	0.560
Ocw25	0.487	0.571	0.520
Ocw32	0.450	0.695	0.556
Total Variance = 58.178%; Overall Confidence (Alpha)=0.933			

Pw; Perception of Wastefulness, Ia; Individual Attitude, Ur; Use of Resources, Nap; Non-Value Adding Processes, Ocw; Organizational Culture of Wastefulness

The explained factors of the scale were named as the perception of wastefulness, individual attitude, use of resources, non-value-adding processes, and organizational culture towards wastefulness. The factor analysis of the scale was tested with confirmatory factor analysis. The diagram of the confirmatory factor analysis is given in Figure 2.

The study utilized the predominant goodness-of-fit indices found in the literature. Table 2 displays the criteria and values acquired during the confirmatory factor analysis.



ia; Perception of Wastefulness, kt (F2); Individual Attitude, kt (F1); Use of Resources, bt; Non-Value Adding Processes, dks; Organizational Culture of Wastefulness

Figure 2. Diagram of Confirmatory Factor Analysis

The results showed that the fit statistics calculated by confirmatory factor analysis were compatible with the scale's previously determined factor structure at an acceptable level, which was determined before standardized factor loads. The t values are given in Table 3.

When the standardized coefficients were examined, it was determined that factor loadings were high, standard error values were low, and t-values were significant. These results confirm the construct validity of the previously determined factor structure.

Convergent Validity and Divergent Validity

Table 5 shows that the Composite Reliability (CR) values exceed the Average Variance Extracted (AVE) values, with the AVE values surpassing the threshold of 0.5. This observation affirms the convergent validity of the scale. Examining CR and AVE values tests the construct validity of the variables in the measurement model. The AVE is computed by dividing the sum of the squares of the standardized factor loadings by the number of items.27 For convergent validity, CR values about the scale are expected to be greater than AVE values, and the AVE value is expected to be greater than 0.5.[27]

Table 2. Confirmatory Factor Analysis Index Values

Index	Normal value	Acceptable value	Value
χ^2 / sd	<2	<5	2.07
GFI	>0.95	>0.90	0.90
AGFI	>0.95	>0.90	0.90
CFI	>0.95	>0.90	0.90
RMSEA	<0.05	<0.08	0.08
RMR	<0.05	<0.08	0.06

χ^2;Chi-Square test, sd; Standard deviation, GFI; Goodness of Fit Index, AGFI; Adjusted Goodness of Fit Index, CFI; Comparative Fit Index, RMSEA; Root Mean Square Error of Approximation, RMR; Root Mean Square Residual

Table 3. Confirmatory Factor Analysis Factor Loads

Substances	and	Factors	β	Std. β	S.Error	t	*P*
Ur49	<---	F1	1,000	.512			
Ur45	<---	F1	1.026	.577	.152	6,759	<.001
Ur50	<---	F1	1.108	.634	.155	7.151	<.001
Ur43	<---	F1	1,234	.748	.158	7,796	<.001
Ur48	<---	F1	1.165	.678	.157	7,416	<.001
Ur47	<---	F1	1,210	.794	.151	8.009	<.001
Ur46	<---	F1	1.219	.809	.151	8,074	<.001
Ia35	<---	F2	1,000	.572			
Ia41	<---	F2	1,234	.694	.153	8,087	<.001
Ia38	<---	F2	1,294	.738	.154	8,387	<.001
Ia34	<---	F2	1.222	.654	.132	9,252	<.001
Ia37	<---	F2	1,470	.733	.176	8,351	<.001
Ia40	<---	F2	1,180	.561	.168	7.013	<.001
Ia39	<---	F2	1,311	.672	.165	7,929	<.001
Nap13	<---	F3	1,000	.676			
Nap12	<---	F3	1,045	.717	.109	9,626	<.001
Nap14	<---	F3	1.027	.753	.102	10,033	<.001
Nap11	<---	F3	.954	.572	.122	7,851	<.001
Nap15	<---	F3	1,024	.718	.106	9,663	<.001
Nap17	<---	F3	.771	.570	.097	7,915	<.001
Ocw29	<---	F4	1,000	.710			
Ocw31	<---	F4	.976	.790	.086	11,285	<.001
Ocw30	<---	F4	.745	.676	.076	9,816	<.001
Ocw28	<---	F4	.838	.663	.087	9,634	<.001
Ocw27	<---	F4	.751	.481	.106	7.089	<.001
Ocw25	<---	F4	.865	.612	.097	8,938	<.001
Ocw32	<---	F4	.925	.716	.102	9,078	<.001
Pw2	<---	F5	1,000	.601			
Pw1	<---	F5	.871	.538	.144	6.065	<.001
Pw4	<---	F5	1.106	.582	.174	6.368	<.001

Pw; Perception of Wastefulness, Ia; Individual Attitude, Ur; Use of Resources, Nap; Non-Value Adding Processes, Ocw; Organizational Culture of Wastefulness, β; Beta, Std. β; Standardized Beta, S.Error; Standard Error, t; t-test

Reliability

The reliability level of the scale was evaluated with "item analysis" and "internal consistency" approaches. In the analysis phase, the contribution score of each item to the scale is expected to be >.40. In this study, the score obtained in the range of .80-.1 indicates that the scale has high reliability.[28] Cronbach's alpha internal consistency coefficient showed internal consistency of the scale. The overall reliability of the scale was found to be high, as Cronbach's Alpha=0.923. The invariance of the measurement over time was evaluated by the test-retest method. During the evaluation, the scale was administered to 30 health workers with similar characteristics to the sample at 15-day intervals.

Table 4. CR and AVE Values

	CR	AVE
Attitude to Wastefulness General	0.822	0.624
Perception of Wastefulness	0.821	0.541
Individual Attitude	0.845	0.588
Use of Resources	0.819	0.622
Non-Value Adding Processes	0.843	0.579
Corporate Culture of Wastefulness	0.823	0.617

CR; Composite Reliability, AVE; Average Variance Extracted

Test-retest

The high Intraclass Correlation Coefficient and test-retest correlation indicate the scale's reliability over short periods, with no significant difference in correlation values as seen Table 5 (P<.05). Additionally, significant differences (P<.05) in scale scores between the bottom 27% and top 27% groups confirm its strong discriminative capability.

Scoring of the Scale

The scale is used by calculating the overall and sub-dimension scores, and the arithmetic mean is taken when calculating the overall and sub-dimensional scores. It is ensured that the score intervals obtained from the scale sub-dimensions and the overall scale are equivalent. Scores obtainable from the scale range between 1 and 5. Higher scale scores and sub-dimensions indicate a stronger inclination towards wasteful behaviors.

Table 5. Test-retest measurements

Measurements	Test		Again		n	t	P [a]	ICC [b]	r [c]
	Mean	Sd	Mean	Sd					
Attitude to Wastefulness General	4.267	0.404	4.236	0.401	33	1,328	.194	0.954	.947
Perception of Wastefulness	4.404	0.505	4,384	0.487	33	0.627	.535	0.947	.931
Individual Attitude	4,434	0.469	4.414	0.464	33	0.780	.441	0.958	.949
Use of Resources	4.429	0.509	4.442	0.491	33	-1.000	.325	0.946	.989
Non-Value Adding Processes	4.403	0.539	4.368	0.535	33	1.136	.264	0.955	.947
Corporate Culture of Wastefulness	3.766	0.817	3.762	0.816	33	1,000	.325	0.977	1,000

[a]Dependent Group T-Test, [b]Intraclass correlation coefficient, [c] Pearson Correlation, Sd: Standard deviation, n; Sample size, r; Pearson Correlation Coefficient, ICC; Intraclass Correlation Coefficient

DISCUSSION

It is important to report and address all dimensions of increased resource use as a result of wasteful behaviors of nurses. Although there are many studies on unnecessary resource use and lean management in healthcare services, there is no scale used to reveal the wasteful behavior of nurses. "Content validity," "item analysis," and "construct validity" were used in the validity analyses of the NWBAS developed in this study.

When evaluating content validity, I-CVI and S-CVI levels of 0.80 were accepted as criteria for content validity.[29] In line with the results obtained from the study, it can be said that the statements in the item pool are above the acceptable lower limit (>0.80) and reflect the construct to be measured.

Prior to assessing reliability and validity, Kurtosis and Skewness values were scrutinized to ascertain the normal distribution of the scale items. According to the relevant literature, Kurtosis and Skewness values within the range of +1.5 to -1.5 and +2.0 to -2.0, respectively, are considered indicative of normal distributions.[18]

In this study, item correlation analysis was conducted to identify the items with the highest ability to measure the phenomenon under investigation. This analysis evaluates the relationship between items on the scale and the construct to be measured, allowing for the selection of items with high correlations and the elimination of those with low correlations. This process is crucial for enhancing the validity and reliability of the scale. The general correlations among the 50 items examined ranged from 0.37 to 0.67, consistent with those found in other scales in nursing and healthcare. [30] The level of item correlations indicates how well the scale measures the relevant construct and reflects the validity of the items. However, the literature suggests that effective scale development typically requires item correlations to be at least 0.40.[17] In this context, the correlation values obtained in our study demonstrate that the scale has an excellent capacity to measure the construct and that the selected items provide sufficient accuracy.

The suitability of the dataset generated from the study for factor analysis was assessed. In this stage, the Kaiser-Meyer-Olkin (KMO) coefficient was utilized to determine the adequacy of the sample size, with a threshold of >0.60 considered acceptable. With a KMO value of 0.892 (>0.60),

indicating a significant relationship among the variables included in the factor analysis, and a Barlett test result of *P*<.001, signifying the dataset's suitability, it was concluded that it was well-suited for factor analysis. [18]

Exploratory factor analysis examines the internal structures of the statements remaining in the item pool and the consistency of their relationships. A low factor loading indicates that the item does not have a strong enough relationship with the factor in question. In this sense, although it is argued that the factor loading value should not be less than 0.30, some theorists argue that this size should be 0.40. [18]

The factor rotation method is employed to determine the most suitable scale structure. This study chose the varimax method for factor analysis to ensure consistency in the relationship structure between factors. [18]

Following the factor analysis rotation process, items with low factor loadings and co-loading were eliminated, and the rotation process was reiterated[31].

Consequently, the variables were categorized into five factors, accounting for a total explained variance of 58.178%.

This finding confirms the validity of the scale's factor structure. Upon conducting convergent and discriminant validity analyses, it was observed that the scale's results were consistent with those reported in existing literature.[32]

Confirmatory factor analysis is used to test the factor structure of a scale in scale development studies. As a result of this analysis, evaluating the relationship between scale items, error rates, factor loadings, and the alignment of the scale sub-dimensions with the theoretical framework is crucial. Based on these findings, recommendations for enhancing the scale can be proposed. [33]

In this study, the goodness-of-fit values resulting from confirmatory factor analysis were determined as $\chi^2/Sd=2.07$, GFI=0.90, CFI=0.90, RMSEA=0.08, and SRMR=0.06.

The fit statistics computed via confirmatory factor analysis were deemed acceptable in accordance with the previously established factor structure of the scale. Upon examination of the standardized coefficients, it was observed that factor loadings were high, standard error values were low, and t-values were significant, thereby confirming the construct validity of the factor structure.[34]

In line with the results obtained, it was proved that the five-factor structure of the NWBAS was valid.

Reliability

Various reliability coefficients have been proposed to evaluate the reliability of scales. Increasing the reliability of a measurement tool indicates the possibility of accurate measurement. The reliability values of this scale were examined with Cronbach's alpha internal consistency coefficient and test-retest coefficients.[35]

When Cronbach's alpha coefficient of a scale or its sub-dimensions is closer to 1, the scale is strong and stable regarding the concept it wants to measure. Studies show that Cronbach's alpha coefficient should be greater than .70. The coefficients obtained for the sub-dimensions in this study are as follows: perception of wastefulness (Alpha=0.767), individual attitude (Alpha=0.852), use of resources (Alpha=0.859), processes that do not add value (Alpha=0.853), and organizational culture towards wastefulness (Alpha=0.832). The Cronbach's alpha coefficient for the entire scale is also reported as 0.933.

NWBAS consists of five dimensions: Perception of wastefulness, individual attitude, resource utilization, non-value-adding processes, and organizational culture of wastefulness. This scale reveals the attitudes and behaviors of nurses working in hospitals toward wasteful behaviors. When the sub-dimensions of the scale are examined one by one, it is seen that the first factor, the perception of wastefulness, consists of three items. This factor is related to the predisposition of health workers towards wasteful behaviors and reflects what wastefulness means to them. The second factor, individual attitude, consists of six items. The items examine the individual attitudes and behaviors of nurses related to their wasteful behavior in the hospital.

The third factor, resource utilization, consists of seven items, reflecting the wasteful behavior encountered in using materials and equipment provided by hospitals. The fourth factor, named non-value-adding processes, consists of seven items. This factor reflects in-hospital processes. The fifth and last factor has been named organizational culture of wastefulness since it reflects the attitude of the relevant organization towards wasteful behaviors.

In this research, the scale's reliability over time was evaluated using the test-retest method. The final version of the scale was administered to 30 nurses with characteristics similar to the initial sample, with a 2-week interval between administrations. The findings revealed no statistically significant difference between the mean scores obtained from the first and second administrations, indicating a positive, strong, and significant relationship. Moreover, the test-retest reliability coefficients for both the overall scale and its sub-dimensions were found to be above 0.90, indicating a perfect level of reliability.[28]

Consequently, the NWBAS emerges as a time-stable and reliable instrument, aligning with these outcomes.

Study Limitations

This study carefully followed the steps to develop a valid and reliable scale, but there are some limitations. Since it has been confirmed by Turkish nurses, it can be studied in different cultures to make generalizations.

The NWBAS is a reliable, valid scale designed to assess nurses' attitudes toward wasteful behaviors in hospitals. Comprising 30 items across five subscales; wasteful perception, individual attitude, resource utilization, value added processes, and organizational culture. It aims to enhance awareness of resource efficiency and sustainability and identify behaviors that contribute to waste, aiding in developing more effective processes.

Etik Komite Onayı: Etik kurul onayı Beykent Üniversitesi Yerel Etik Kurulu'ndan (Tarih: 02.12.2021, Sayı: 152) alınmıştır.
Hasta Onamı: Katılımcılardan yazılı bilgilendirilmiş onam formu alınmıştır.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Fikir- STBM; Tasarım- STBM; Denetleme- UB; Kaynaklar- STBM; Materyaller- STBM, UB; Veri Toplanması ve/veya İşlemesi- STBM; Analiz ve/ veya Yorum- STBM; Literatür Taraması- STBM; Yazıyı Yazan- STBM; Eleştirel İnceleme- UB.
Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.
Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.

Ethics Committee Approval: Ethics committee approval was obtained from the Scientific Research for Social and Human Sciences and Publication at Beykent University, Istanbul (Date: 02.12.2021, Number: 152).
Informed Consent: Written informed consent forms were obtained from the participants.
Peer-review: External independent.
Author Contributions: Concept- STBM; Design - STBM; Supervision - UB; Resources - STBM; Materials - STBM, UB; Data Collection and/or Processing - STBM; Analysis and/or Interpretation - STBM; Literature Review - STBM; Writing - STBM; Critical Review - UB.
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REFERENCES

1. Organisation for Economic Co-Operation and Development (OECD). Health Statistics 2022—Frequently Requested Data. Available from: https://www.oecd.org/en/topics/policy-issues/the-future-of-health-systems.html
2. Giray F, Cimen G. Factors determining the change in health expenditures: an analysis of Turkey and OECD countries. *Sayıştay Journal*. 2018;111:143-171. https://doi.org/10.1234/sayistay.2018.111
3. Ministry of Commerce. Türkiye Waste Report. General Directorate of Consumer Protection and Market Surveillance. Available from: https://ticaret.gov.tr/data/5c51a78e13b8762dc06a72c9/T%C3%BCrkiye%20%C4%B0sraf%20Raporu.pdf
4. Ministry of Science, I. and T. G. D. of I. National Recycling Strategy Document and Action Plan; 2017. Available from: https://leap.unep.org/en/countries/tr/national-legislation/national-recycling-strategy-and-action-plan-2014-2017
5. Behar Villegas E. Wasteful spending cultures: State inefficiency and policy narratives. *Rev. Adm. Pública*. 2021;55:662–678. https://doi.org/10.1590/0034-761220200647
6. Karaca PO, Atılgan E, Zekioglu A. An Innovative Application in the Context of Sustainability in Health Services: Green Hospitals. *Ejovoc*. 2018;8(2):77–87. https://dergipark.org.tr/en/pub/ejovoc/issue/41199/497922
7. Kaypak Ş. Extravagance and its reflection on nature. *Atlas National Journal of Social Sciences*. 2019; 3(4): 1–16. https://dergipark.org.tr/en/pub/atlas/issue/55584/760716
8. Chías P, Abad T. Green hospitals, green healthcare. *IIETA*. 2017;2(2):196–205. https://www.witpress.com/elibrary/EQ-volumes/2/2/1860
9. Shrank WH, Rogstad TL, Parekh N. Waste in the US health care system: estimated costs and potential for savings. *JAMA*. 2019;322(15):1501–1509. https://10.1001/jama.2019.13978
10. Gurumurthy A, Nair VK, Vinodh S. Application of a hybrid selective inventory control technique in a hospital: a precursor for inventory reduction through lean thinking. *The TQM Journal*. 2021;33(3):568–595. https://doi.org/10.1108/TQM-06-2020-0123
11. Annex, A. Global Road Map for Health Care Decarbonization. 2021. Available from: https://healthcareclimateaction.org/sites/default/files/2021-06/Health%20Care%20Decarbonization%20Road%20Map%20-%20Annex%20A%20Technical%20report.pdf
12. Turkish Statistical Institute. Health Spending Statistics. 2020. Available from: https://data.tuik.gov.tr/Kategori/GetKategori?p=saglik-ve-sosyal-koruma-101&dil=2
13. Kalogirou MR, Dahlke S, Davidson S, Yamamoto S. Nurses' perspectives on climate change, health and nursing practice. *J Clin Nurs*. 2020;29(23–24):4759–4768. https://doi.org/10.1111/jocn.15519
14. Aij KH, Teunissen M. Lean leadership attributes: a systematic review of the literature. *J Health Organ Manag*. 2017;31(7/8):713–729. https://doi.org/10.1108/JHOM-12-2016-0245
15. Hu H, Fang W, Yu X. Enhancing individual commitment to energy conservation in organizational settings: Identity manipulation for behavioral changes. *Resour Conserv Recycl*. 2020;156:104720. https://doi.org/10.1016/j.resconrec.2020.104720
16. Patey AM, Grimshaw JM, Francis JJ. Changing behaviour, 'more or less': do implementation and de-implementation

interventions include different behaviour change techniques? *Implementation Sci*. 2021;16:1–17. https://doi.org/10.1186/s13012-021-01089-0
17. Tabachnick BG, Fidell L. Using multivariate statistics. Boston, MA: Pearson, Education, Inc; 2007. Available from: https://hisp.htmi.ch/pluginfile.php/77114/mod_resource/content/0/Using%20Multivariate%20Statistics%20%28Tabachnick%20and%20Fidell%29.pdf
18. DeVellis RF. Scale development: Theory and applications (Vol. 26). Sage Publications: Thousand Oaks, CA; 2016.
19. Baykara Mat ST. Qualitative Examination of Healthcare Professionals' Opinions on Waste and Development of an Attitude Scale on Waste; 2019. Available from: https://yohed.org.tr/wp-content/uploads/2024/03/3.-ULUSAL-HEMSIRELIKTE-YONETIM-KONGRE-KITABI.pdf
20. Davis LL. Instrument review: Getting the most from a panel of experts. *Appl Nurs Res*. 1992;5(4):194–197. https://doi.org/10.1016/S0897-1897(05)80008-4
21. Yaşlıoğlu MM. Factor analysis and validity in social sciences: Application of exploratory and confirmatory factor analyses. *IBR*. 2017;46(Special issue):74–85. https://iupress.istanbul.edu.tr/en/journal/ibr/article/sosyal-bilimlerde-faktor-analizi-ve-gecerlilik-kesfedici-ve-dogrulayici-faktor-analizlerinin-kullanilmasi
22. Kieffer KM. Orthogonal versus Oblique Factor Rotation: A Review of the Literature regarding the Pros and Cons; 1998
23. Alavi M, Visentin DC, Thapa DK, Hunt GE, Watson R, Cleary ML. Chi-square for model fit in confirmatory factor analysis; 2020. https://hdl.handle.net/10779/cqu.16572050.v1
24. Schermelleh-Engel K, Moosbrugger H, Müller H. Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*. 2003;8(2):23–74. https://www.stats.ox.ac.uk/~snijders/mpr_Schermelleh.pdf
25. Lewis RL, Vasishth S. An activation-based model of sentence processing as skilled memory retrieval. *Cogn Sci*. 2005;29(3):375–419. https://www.ling.uni-potsdam.de/~vasishth/pdfs/Lewis-VasishthCogSci2005.pdf
26. George D, Mallery P. SPSS for Windows step by step: A simple guide and reference. 17th ed. Pearson; 2010. https://dl.acm.org/doi/abs/10.5555/557542
27. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. *J Mark Res*. 1981;18(1):39–50. https://doi.org/10.1177/002224378101800104
28. Polit DF, Beck CT. Nursing research: Principles and methods. Lippincott Williams & Wilkins; 2004. Available from: https://books.google.com.tr/books?hl=en&lr=&id=5g6VttYWnjUC&oi=fnd&pg=PA3&dq=28.%09Polit+DF,+Beck+CT.+Nursing+research:+Principles+and+methods.+Lippincott+Williams+%26+Wilkins%3B+2004.+&ots=_1iUwKqpwB&sig=Z3NOT3z-NJ-ABiOi2mL88hzO2r0&redir_esc=y#v=onepage&q=28.%09Polit%20DF%2C%20Beck%20CT.%20Nursing%20research%3A%20Principles%20and%20methods.%20Lippincott%20Williams%20%26%20Wilkins%3B%202004.&f=false
29. Yeşilyurt S, Çapraz C. A road map for the content validity used in scale development studies. *EUJEF*. 2018;20(1):251-264. https://doi.org/10.17556/erziefd.297741
30. DeVellis RF. Scale development: Theory and applications. 4th ed. Sage Publications; 2017. Available from: https://books.google.com.tr/books?hl=en&lr=&id=QddDEAAAQBAJ&oi=fnd&pg=PP13&dq=30.%09DeVellis+RF.+Scale+development:+Theory+and+applications.+4th+ed.+Sage+Publications%3B+2017&ots=OFfHFLLGbh&sig=g2HIw_ugizbm8PvPIaYA-C2Z3aA&redir_esc=y#v=onepage&q&f=false
31. Streiner DL, Norman GR. Health measurement scales: A practical guide to their development and use. 5th ed. Oxford University Press; 2015.
32. Costello AB, Osborne JW. Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *PARE*. 2005;10(7):1-9. https://legacyfileshare.elsevier.com/promis_misc/Best%20practices%20in%20exploratory%20factor%20analysis%20four%20recommendation.pdf
33. Johnson RA, Wichern DW. Applied multivariate statistical analysis. 6th ed. Pearson; 2018. https://www.researchgate.net/profile/Jouini-Abdelhafid/post/Can_any_one_explain_me_the_Akaike_Information_Criterion_sensing-based_in_cognitive_radio2/attachment/59d623ec79197b80779823b4/AS%3A309790092267520%401450871121033/download/194866033.pdf
34. Browne MW, Cudeck R. Alternative ways of assessing model fit. In: Bollen KA, Long JS, editors. Testing structural equation models. Sage Publications; 1993. p.136-162. https://doi.org/10.1177/0049124192021002005
35. Nunnally JC, Bernstein IH. Psychometric Theory. 3rd ed. New York: McGraw-Hill;1994. https://journals.sagepub.com/doi/abs/10.1177/014662169501900308

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Palyatif Bakım Biriminde Çalışan Hemşirelerin Konsültasyon Liyezon Psikiyatrisi ve Palyatif Bakım Konusundaki Görüşleri: Nitel Bir Çalışma

Views of Nurses Working in Palliative Care Units on Consultation Liaison Psychiatry and Palliative Care: A Qualitative Study

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ÖZ

Amaç : Bu araştırma, palyatif bakım biriminde çalışan hemşirelerin konsültasyon liyezon psikiyatrisi ve palyatif biriminde çalışma konusundaki görüşlerini incelemek amacıyla yapılmıştır.

Yöntemler : Nitel araştırma desenlerinden olan fenomenolojik desene uygun olarak yapılan araştırma Mayıs- Temmuz 2022 tarihleri arasında Türkiye'nin batısındaki bir ilde yer alan hastanenin palyatif biriminde çalışan 11 hemşire ile yapılmıştır. Verilerin toplanmasında "Yarı Yapılandırılmış Görüşme Formu" kullanılmıştır. Katılımcılar ile yapılan görüşmeler ses kaydına alınmıştır. Araştırma verilerinin analizi, betimsel analiz yöntemi ile değerlendirilmiştir.

Bulgular : Palyatif bakım biriminde çalışan hemşirelerle yürütülmüş olan niteliksel olan bu araştırmada üç temaya ulaşılmıştır. Bunlar palyatif biriminde çalışmaya ilişkin duygular/düşünceler, palyatif bakım ünitesinde yaşanan güçlükler ve konsültasyon liyezon psikiyatrisi konusundaki düşünceler şeklindedir.

Sonuç : Araştırma sonucunda, palyatif bakım biriminde çalışan hemşirelerin çaresizlik, ölüme yakın hissettikleri ancak hastalara yardımcı oldukları için kendilerini verimli, işe yarar hissettikleri, palyatif bakım biriminin hemşirelik bakımının en iyi yapıldığı yer olduğunu düşündükleri ve mesleki doyum yaşadıkları belirlenmiştir. Hemşireler çalışma koşullarının zor olduğunu ifade etmektedirler. Hemşirelerin konsültasyon liyezon psikiyatrisi konusunda yeterli bilgiye sahip olmadıkları saptanmıştır. Hemşirelerin, hasta ve yakınlarının fiziksel ve ruhsal sağlık düzeylerini geliştirmek için konsültasyon ve liyezon psikiyatrisinin gelişmesine ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Palyatif bakım, konsültasyon liyezon psikiyatrisi, hemşirelik, nitel araştırma

ABSTRACT

Objective : This research was conducted to examine the opinions of nurses working in the palliative care unit about consultation-liaison psychiatry and working in the palliative unit.

Methods : The research, which was conducted in accordance with the phenomenological design, which is one of the qualitative research designs, was conducted between May and July 2022 with 11 nurses working in the palliative unit of a hospital located in a province in the west of Turkey. "Semi-Structured Interview Form" was used to collect data. Interviews with participants were audio recorded. The analysis of the research data was evaluated using the descriptive analysis method.

Result : Three themes were reached in this qualitative research conducted with nurses working in the palliative care unit. These are feelings/thoughts about working in the palliative unit, difficulties experienced in the palliative care unit, and thoughts about consultation-liaison psychiatry.

Conclusion : As a result of the research, it was determined that nurses working in the palliative care unit felt helpless and close to death, but they felt productive and useful because they helped patients, they thought that the palliative care unit was the place where nursing care was best provided, and they experienced professional satisfaction. Nurses state that working conditions are difficult. It was determined that nurses did not have sufficient knowledge about consultation-liaison psychiatry. There is a need for the development of consultation and liaison psychiatry to improve the physical and mental health levels of nurses, patients and their relatives.

Keywords: Palliative care, consultation liaison psychiatry, nursing, qualitative research

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GİRİŞ

Hemşireler, tüm sağlık hizmeti profesyonellerinin çoğunluğunu temsil eden sağlık hizmetlerinin sunumunda etkin rolü olan en büyük profesyonel gruptur ve çok çeşitli bağlamlarda palyatif bakım sağlanmasına dahil olan meslek grubudur.[1,2] Dünya Sağlık Örgütü palyatif bakımı, yaşamı tehdit eden hastalıklarla boğuşan hasta ve ailelerin acılarını dindirmek, önlemek ve yaşam kalitelerini iyileştirmek için bir yaklaşım olarak tanımlamaktadır.[3]

Palyatif bakım hasta ve ailesinin fiziksel, psikolojik, sosyal ve ruhsal ihtiyaçlarına hitap eden bir yaklaşımdır. Hastaların ve ailelerinin gerekli bakımı almaları ve gereksinimlerinin karşılanması için multidisipliner ekip yaklaşımının uygulanması gereklidir. Kaliteli palyatif bakım sunarken hasta ve hasta yakınlarıyla en fazla zaman geçiren meslek grubu hemşirelerdir. Hemşire bakımı koordine ederken, bakımın sürekliliğini ve kalitesini sağlamakta, hasta ve ailesine destek olmaktadır.[4,5] Palyatif bakım birimlerinde ölüme yakın ve kronik hastalığı bulunan hastaların tedavi alıyor olması nedeniyle hemşireler, hastalardaki değişimleri gözlemlerken ve ruhsal bakımlarını sağlarken yardıma gereksinim duyabilmektedirler. Bu durumda hem hemşirelere yol gösterici olması hem de hastalara sunulan bakımın kalitesinin artması için Konsültasyon liyezon psikiyatrisi hizmetlerinden yararlanmak uygun olacaktır. Konsültasyon liyezon psikiyatrisi (KLP) biyopsikososyal anlayışı uygulamaya geçirmeye, fiziksel bakım ile ruhsal tedavi ve psikososyal bakımı bütünlemeyi hedefleyen özel bir alandır. Bir başka deyişle, tıbbi hastalıkların psikiyatrisidir.[6] Konsültasyon-Liyezon Psikiyatrisi, tıbbi komorbiditeleri olan hastalarda psikiyatrik hastalıkların ve psikososyal sorunların tanı ve tedavisine odaklanan özel bir alandır. Bu yaklaşım, hastalar için psikososyal bakımın yanı sıra tıbbi ve psikiyatrik tedavilerin birleşimini içerir.[6] Fiziksel tedavi ve bakım ile birlikte ruhsal tedavi ve psikososyal bakımı beraber yürütmeye çalışan konsültasyon liyezon psikiyatrisi (KLP), genel hastane içinde psikiyatri hizmetleri sunarak önemli bir gereksinimi sağlamaktadır.[7] Konsültasyon-liyezon psikiyatri (KLP) hemşireleri alanla ilgili önemli boşluğu doldurmaktadır.[7] KLP hemşireliği; gerçek veya herhangi bir fiziksel fonksiyon bozukluğu sebebiyle sağlık bakım sistemine giren hastaların ve ailelerin, primer koruma, tedavi, bakım ve rehabilitasyona kadar devam eden süreçte ortaya çıkan "emosyonel, felsefi, gelişimsel, bilişsel ve davranışsal" tepkilerini, ruhsal ve psikososyal sorunlarını tanımlayan, tedavi ve bakımında rol alan, izleyen, hemşirelerin psikiyatrik tıp alanında eğitimlerini sağlayan ve bu alanda araştırmalar yapan psikiyatri hemşireliğinin bir üst uzmanlığıdır.[8,9]

Ancak KLP hizmetlerinin önemine karşın hastanelerde yeterince kurumsallaşmaması ve hemşirelerin bu birim hakkında yeterli bilgiye sahip olmaması gerekçeleri ile özel bir birim olan palyatif bakımda çalışan hemşireler ile yapılan çalışmanın literatüre katkı vereceği düşünülmüştür.

AMAÇ

Bu niteliksel araştırmanın amacı, palyatif bakım biriminde çalışan hemşirelerin konsültasyon liyezon psikiyatrisi ve palyatif biriminde çalışma konusundaki görüşlerinin belirlemektir.

Araştırma soruları

- Palyatif biriminde çalışan hemşirelerin deneyimleri nelerdir?
- Palyatif biriminde çalışan hemşirelerin duyguları nelerdir?
- Palyatif biriminde çalışan hemşirelerin konsültasyon liyezon psikiyatrisi konusundaki düşünceleri nelerdir?

YÖNTEMLER

Araştırmanın Amacı ve Tipi

Palyatif bakım biriminde çalışan hemşirelerin konsültasyon liyezon psikiyatrisi ve palyatif biriminde çalışma konusundaki görüşlerini belirlemek amacıyla yürütülen bu araştırma nitel araştırma desenlerinden olan fenomenolojik desene uygun olarak yapılmıştır.

Araştırmanın Yeri ve Zamanı

Araştırma Mayıs-Temmuz 2022 tarihleri arasında Türkiye'nin batısındaki bir ilde yer alan hastanenin palyatif biriminde çalışan hemşirelerle yapılmıştır. Araştırmanın yapıldığı hastanede toplam yatak sayısı 256'dır. Çalışmanın yürütüldüğü palyatif bakım biriminde ise 20 yatak bulunmaktadır. Bu klinikte çoğunlukla Serebrovasküler hastalık (SVO) tanılı, inme tanılı, kanser tanısı olup terminal dönem kabul edilen hastalar ile alzheimer tanılı bireyler yatmaktadır.

Katılımcı Özellikleri

Çalışma grubu, amaçlı örnekleme yöntemlerinden olan ölçüt örnekleme ile belirlenmiştir. Nitel araştırmalarda amaçlı örnekleme yöntemi, olgu ve olayların açıklanmasına olanak tanımakta, ölçüt örnekleme yöntemi ise önceden belirlenmiş ölçütleri karşılayan durumları belirlemeyi içermektedir.[10] Bu doğrultuda, palyatif bakım biriminde çalışan, iletişim sorunu olmayan ve çalışmaya katılmayı kabul eden hemşireler çalışma grubunu oluşturmuştur. Araştırmanın yürütüldüğü klinikte 14 hemşire çalışmaktadır. Dâhil edilme kriterlerine uyan hemşirelerin tamamına ulaşılması hedeflenmiş ancak veri doygunluğuna ulaşıldığı için veri toplama süreci sonlandırılmıştır. Nitel çalışmaların uygunluğu için 5 ile 25 katılımcıdan oluşan küçük bir örneklem büyüklüğü önerilmektedir.[10] Bu koşullar

dikkate alınarak araştırmanın örneklemini palyatif biriminde çalışan 11 hemşire oluşturmuştur. Katılımcıların özellikleri Tablo 1'de gösterilmiştir.

Veri Toplama Araçları

Araştırma verilerinin toplanmasında Kişisel Bilgi Formu ve Yarı Yapılandırılmış Görüşme Formu'ndan oluşan Anket Formu kullanılmıştır.

Kişisel Bilgi Formu: Hemşirelerin sosyo-demografik özelliklerine yönelik (yaş, cinsiyet, medeni durum, eğitim durumu, mesleki deneyim, palyatif biriminde çalışma süresi) 6 adet soru yer almaktadır.

Yarı Yapılandırılmış Görüşme Formu: Hemşirelerin palyatif bakım biriminde çalışmaya ilişkin, duygu ve düşünceleri ile konsültasyon liyezon psikiyatrisi ile ilgili sorular olmak üzere toplam 4 adet soru bulunmaktadır. Sorular uzman araştırmacılar tarafından literatür gözden geçirilerek hazırlanmıştır. Sorular aşağıda belirtilmiştir;

- Palyatif bakım biriminde çalışmak size ne düşündürüyor/ ne hissettiriyor?
- Psikososyal bakımın ne olduğunu sorsam ne dersiniz?
- Konsültasyon Liyezon Psikiyatrisi kavramı ile ilgili neler söylersiniz?
- KLP hemşireliği hakkındaki düşüncelerinizi iletir misiniz? (KLP hemşiresi kimdir, ne yapar, ünvan nasıl alınır)

Verilerin Toplanması

Araştırma verileri, araştırmacılar tarafından hazırlanan toplam 10 sorudan oluşan Anket Formu kullanılarak toplanmıştır. Veri toplama esnasında katılımcılara çalışmanın amacı açıklanmış, katılmayı kabul eden gönüllülere tüm verilerin güvenle korunacağı konusunda bilgi verilerek sözlü onamları alınmıştır. Görüşmeler, katılımcıların kendilerini rahat ifade edebilmesi için klinik içindeki görüşme odasında, tüm görüşmeler üçüncü yazar tarafından gerçekleştirilmiştir. Bu sayede katılımcılara yapılan açıklamaların benzer bir yapıda olması sağlanarak araştırmanın tutarlılığına katkı sağlanmıştır. Katılımcılardan onay alınarak görüşmeler ses kaydına alınmıştır. Katılımcıların tamamı görüşmenin ses kaydına alınmasını onaylamıştır. Yapılan her bir görüşme yaklaşık 15 dakika sürmüştür. Veriler, veri doygunluğu noktasına, yani araştırma sürecinde veri analizinde hiçbir yeni bilginin keşfedilmediği noktaya gelene kadar toplanmıştır.[10] Yeterli veri toplanması nedeniyle tekrar görüşmelere gereksinim duyulmamıştır.

Verilerin Değerlendirilmesi

Araştırma verileri, betimsel analiz yöntemi ile değerlendirilmiştir. Betimsel analizde amaç görüşme ve gözlem sonucu toplanan verilerin düzenlenmiş ve yorumlanmış biçimde okuyucu ile buluşturulmasıdır.[10] Betimsel analizde dört basamaklı bir süreç izlenir. İlk olarak betimsel analiz için çerçeve oluşturma, ikinci basamakta tematik çerçeveye göre verilerin işlenmesi, üçüncü basamakta bulguların tanımlanması ve son basamakta da bulguların yorumlanması ve açıklanması aşamasıdır.[11,12] Ses kaydına alınan görüşmeler metin haline dönüştürülmüştür. Veriler öncelikle iki ayrı araştırmacı (MK, ST) tarafından titizlikle tekrar tekrar okunmuş ve satır satır kodlanmıştır. Sonrasında birbiri ile ilişkili kodlar bir araya getirilerek kategoriler ve son olarak kategorilerden bir üst anlam ifade eden temalara ulaşılmıştır ve yazarların ortak görüşü sonucunda veri değerlendirme süreci sonlandırılmıştır. Ayrıca güvenirlik kriteri için hemşirelerden araştırmacıların yorumlarını değerlendirmeleri sağlanmış ve geribildirimleri alınmıştır. Çalışmanın raporlanmasında, Kalitatif Araştırma Raporlama Kriterleri (COREQ) yönergeleri kullanılmıştır. COREQ, nitel araştırmanın raporlanması sürecinde araştırmacılara rehberlik eden 32 maddeden oluşan bir kontrol listesidir.[13]

Araştırmanın Etik Yönü

Bu çalışma, insan deneklerin yer aldığı tıbbi araştırmalara yönelik Helsinki Bildirgesi'nin etik ilkeleri uyarınca gerçekleştirilmiştir. Çalışmaya başlamadan önce, Kütahya Dumlupınar Üniversitesi Etik Kurulundan onay alınmıştır (03.02.2021 tarih, 10 numaralı karar). Ayrıca araştırmanın yapıldığı hastaneden kurum izni ve araştırmaya katılan tüm hemşirelerden sözlü onamları alınmıştır. Katılımcılara görüşme öncesi araştırmanın amacı verilerin araştırma dışında kullanılmayacağı ve istedikleri zaman araştırmadan çekilebilecekleri bilgisi verilmiştir. Araştırmaya gönüllü olarak katılan hemşirelerin tamamı görüşmeyi tamamlamış olup hiçbiri araştırmadan ayrılmamıştır. Bu araştırmada verilerin elde edilmesi, analizi ve saklanması sürecinde etik ilkelere uygun davranılmıştır.

Araştırmanın İnanılırlığı (Geçerlik ve Güvenirlik)

Nitel araştırmanın inandırıcılığı için inanılırlık, güvenilebilirlik, onaylanabilirlik ve aktarılabilirlik olmak üzere dört ölçüt kullanılmaktadır.[12] Araştırma süreci boyunca bu dört ölçüt göz önünde bulundurulmuştur. Bu araştırmada görüşmeler yüz yüze, uzman psikiyatri hemşiresi olup görüşme yapma deneyimi olan 3. yazar tarafından 10-15 dakika süreyle gerçekleştirilmesi, hemşirelerin temaları kontrol etmeleri ve araştırmacıların yorumlarını değerlendirmeleri inanırlığı arttırmak için kullanılan yöntemlerdir. Verilerin toplanması ve analizi sürecinde birden fazla araştırmacıya yer verilerek araştırmacı üçgenlemesi yapılmış, böylece araştırmanın güvenilebilirliği arttırılmaya çalışılmıştır. Onaylanabilirlik

ölçütünü sağlamak için araştırma bulgularında, katılımcıların kendi ifadelerini içeren doğrudan alıntılara yer verilmiştir. Araştırmanın aktarılabilirliği ise örneklem yöntemi, katılımcı özellikleri ve görüşme yapılan ortam açıklanarak sağlanmaya çalışılmıştır.

BULGULAR

Araştırmaya palyatif bakım biriminde çalışan toplam 11 hemşire katılmış olup tamamı kadın ve lisans mezunudur. Yaşları en düşük 25 yaş ile en yüksek 49 yaş arasındadır. Palyatif bakım biriminde çalışmayı araştırmaya katılan 11 hemşireden 7'si kendi isteğiyle, 4'ü ise idarenin önerisi ile tercih etmiştir. Palyatif bakım süresinde çalışma süreleri ise en az 3 yıl ile en fazla 14 yıl arasında değişiklik göstermektedir (Tablo 1).

Palyatif biriminde çalışan hemşirelerin konsültasyon liyezon psikiyatrisine ilişkin görüşlerinin incelendiği bu çalışmada, üç ana tema belirlenmiştir. İlk tema palyatif biriminde çalışmaya ilişkin duygular/düşünceler'dir. Bu temanın alt temasında Duygular ve Düşünceler bulunmaktadır. İkinci tema, palyatif bakım ünitesinde yaşanan güçlükler biçimindedir. Çalışmanın son teması ise konsültasyon liyezon psikiyatrisi konusundaki düşünceler olarak belirlenmiştir (Tablo 2).

Tablo 1. Katılımcıların Tanımlayıcı Özellikleri

Katılımcı	Cinsiyet	Yaş	Eğitim durumu	Palyatif biriminde çalışmayı isteme durumu	Palyatif biriminde çalışma süresi
K1	Kadın	30	Lisans	İdare önermiş	7 yıl
K2	Kadın	49	Lisans	İdare önermiş	12 yıl
K3	Kadın	48	Lisans	Kendi istemiş	2 yıl
K4	Kadın	28	Lisans	İdare önermiş	4 yıl
K5	Kadın	34	Lisans	Kendi istemiş	4 yıl
K6	Kadın	43	Lisans	Kendi istemiş	3 yıl
K7	Kadın	43	Lisans	Kendi istemiş	5 yıl
K8	Kadın	36	Lisans	İdare önermiş	14 yıl
K9	Kadın	30	Lisans	Kendi istemiş	6 yıl
K10	Kadın	25	Lisans	Kendi istemiş	4 yıl
K11	Kadın	47	Lisans	Kendi istemiş	9 yıl

K; Katılımcı

Tema 1: Palyatif Biriminde Çalışmaya İlişkin Duygular/ Düşünceler

Katılımcıların *Duygular* alt temasındaki ifadeleri;

"Kendimi işe yarar hissediyorum." (K3; K5)
"Hasta odaklı hizmet verdiğim için verimli olduğumu hissediyorum." (K1; K5)
"Mutluluk hissediyorum." (K6)
"Mesleki doyumu oldukça yoğun hissediyorum." (K3; K7)
"Ölüme yakın hastaya bakım vermek özel hissettiriyor." (K3; K8)
"Manevi haz duyuyorum." (K3; K5)
"Elimizden çok bir şey gelemediğini hissediyorum." (K3; K9)
"Hastalar uzun süre yattıkları için hastalara bağlanıyorsun kaybedildiğinde de o durum yıpratıcı oluyor." (K11)

Katılımcıların *Düşünceler* alt temasına ilişkin ifadeleri;

"Hemşirelik bakımının en iyi şekilde yapıldığı birim." (K4; K11)
"Ölümü düşündürtüyor." (K9)
"Empati yapmayı öğrendim." (K7)
"Hasta yakınları genelde bizi zorlar ama burada olmamalarından memnunum." (K2)
"Diğer servislere göre sakin bir birim." (K3)
"Sağlığın, stresi yönetmenin ve sağlıklı beslenmenin önemini öğrendim." (K10)
"Her gün gelmiyoruz nöbet tutup ardındaki günler izinli oluyoruz o güzel." (K1)

Tema 2: Palyatif Bakım Ünitesinde Yaşanan Güçlükler

Katılımcıların bu temaya ilişkin ifadeleri şu şekildedir;

"24 saat nöbet tutmak ve aileden uzak kalmak en zor olanı." (K1; K2)
"Profesyonel olmak lazım bazen duygular karışıyor yoruyor." (K4)
"Konuşamayan hastalarla iletişim zor oluyor." (K9)
"Hastaların ajitasyonu olduğunda zorlanıyorum." (K8)

Tema 3: Konsültasyon Liyezon Psikiyatrisi Konusundaki Düşünceler

Katılımcıların bu temaya ilişkin ifadeleri şöyledir;

"Konsültasyon liyezon psikiyatrisi hakkında bilgi sahibi değilim." (K2; K4; K7; K8; K11)
"Biliyorum lisans eğitimim esnasında söz edilmişti kendim içinde isterim sağlık çalışanlarının hepsinin ihtiyacı var

hastaların hatta ailelerinde ihtiyacı var." (K3)
"İş verimini arttırmak ve tükenmişle baş etmekle ilgili destek verecek bir birim diye biliyorum." (K1)

TARTIŞMA

Palyatif bakım hayatı tehdit eden hastalığı olan bireylerin hastalık belirtilerinin azaltılmasını sağlayan, hasta ve ailesinin fiziksel ve psikososyal tüm sorunlarını değerlendiren ve yaşam kalitesini yükseltme amacıyla çalışan bir disiplindir.[14,15] Bu süreçte hastalarla en fazla zaman geçiren sağlık profesyonelleri hemşirelerdir. Palyatif bakım biriminde çalışan hemşirelerin konsültasyon liyezon psikiyatrisi ve palyatif biriminde çalışma konusundaki görüşlerini incelemek amacı ile yapılan bu nitel araştırmada, üç ana tema oluşturulmuştur. Tartışma bu temalar üzerinden yapılmıştır.

Tema 1: Palyatif biriminde çalışmaya ilişkin duygular/düşünceler

Palyatif bakım biriminde çalışan hemşireler bu süreçte birçok zorluk yaşamaktadırlar.[16] Bu bağlamda hemşirelerin yaşadıkları güçlüklerle duygu ve düşüncelerinin anlaşılması

Tablo 2. Hemşirelerin Palyatif Biriminde Çalışmaya İlişkin Duyguları/Düşünceleri

Temalar	Alt Temalar
Palyatif Biriminde Çalışmaya İlişkin Duygular/Düşünceler	**Duygular** İşe yarar hissetme. Verimli olduğumu hissetme Mutluluk hissetme. Mesleki doyumu sağlama. Ölüme yakın hissetme. Manevi haz duyma. Vicdani olarak iyi hissetme Çaresizlik hissetme. Hastalara bağlanıldığı için kaybedildiğinde ise yıpranma. **Düşünceler** Hasta ve bakım odaklı olduğu için gayet iyi. Hemşirelik bakımının en iyi yapıldığı birim Ölümü düşündürtüyor. Empati yapmayı öğrendim. Hasta yakınları bizi zorluyor burada yoklar Diğer servislere göre sakin bir birim. Sağlığın, stresi yönetmenin ve sağlıklı beslenmenin önemini öğrendim. Her gün gelmiyoruz nöbet tutup ardındaki günler izinli oluyoruz o güzel. Daha sakin bir insan oldum.
Palyatif Bakım Ünitesinde Yaşanan Güçlükler	24 saat nöbet tutmak. 24 saat boyunca aileden uzak kalmak Kapalı ortam olması zorluk olabilir. Profesyonel olmak lazım bazen duygular karışıyor yoruyor. Bakım verme sırasında fiziksel sıkıntılar olabiliyor (hasta kilolu ise eğer). Hastaya bakım verirken destek olacak personel olmadığında zorlanıyorum (örneğin hastaya banyo yaptırırken). Konuşamayan hastalarla iletişim zor oluyor. Hastaların ajitasyonu olduğunda zorlanıyorum.
Konsültasyon Liyezon Psikiyatrisi Konusundaki Düşünceler	Konsültasyon liyezon psikiyatrisi hakkında bilgi sahibi değilim. Yaygın olmadığını biliyorum. Fikrim yok. Biliyorum lisans eğitimim esnasında söz edilmişti. Kendim içinde isterim sağlık çalışanlarının hepsinin ihtiyacı var hastaların hatta ailelerinde ihtiyacı var. İş verimini arttırmak ve tükenmişlikle baş etmekle ilgili destek verecek bir birim diye biliyorum. Bu hastanede de olsa çok iyi olur. Hastaların anksiyetesini yönetmede destek alırım.

konsültasyon liyezon psikiyatrisi birimlerinin sorumluluğundadır. Bu çalışmada hemşirelerin palyatif biriminde çalışmaya ilişkin duygularının genel anlamda olumlu olduğu anlaşılmaktadır. Hemşireler söz konusu birimde çalışmakla ilgili olarak kendilerini işe yarar hissettikleri, ancak hastalara uzun süre bakım verdikleri hastayı kaybettiklerinde ise durumdan olumsuz etkilendiklerini ve çaresizlik yaşadıklarını ifade etmektedirler. Bu sonuç, hemşirelerin hastalarla bağ kurup duygusal yakınlık hissetmelerinden kaynaklanabilir. Literatür incelendiğinde; hemşirelik birinci sınıf öğrencilerinin palyatif bakım birimindeki klinik uygulamalarında yapılan bir araştırmada farklı sonuçlar elde edilmiştir.[14] Öğrencilerin palyatif bakım hastasına bakım verirken hastaya ilişkin deneyimlerinin çoğunlukla korku, umutsuzluk, ümitsizlik ve çaresizlik şeklinde ifade etmişlerdir. Bu farklılığın nedeninin henüz birinci sınıf olan hemşirelik öğrencilerinin hemşirelik alanında yeterli bilgiye sahip olmamalarından ve palyatif bakımda ilk defa klinik uygulamaya çıkmalarından kaynaklamış olabileceği düşünülebilir.

Bu çalışmada hemşireler palyatif biriminin hemşirelik bakımının yapıldığı en iyi yer olduğunu ifade ettikleri, ölümü düşünme ve empatik davranış sergileme açısından kliniğin öğrenme ortamı sağladığını eklemektedirler. Çalışmada yer alan birçok hemşire palyatif biriminde çalışma ile kendilerini daha sakin birine dönüştüğünü ve stres yönetimini daha iyi yapabildiklerini belirtmektedir. Başka bir ifadeyle, palyatif hemşirelerinin çalıştıkları birimle ilgili çoğunlukla olumlu düşüncelerinin olduğu görülmektedir. Hemşirelerin tamamına yakınının palyatif biriminde kendi istekleriyle çalışıyor olmaları bu sonucun ortaya çıkmasını sağlamış olabilir. Araştırmamızda palyatif hemşireleri nöbet saatlerini fazla bulmakta, 24 saat boyunca ailelerinden uzak kaldıklarını belirtmektedirler. Literatürde sağlık çalışanlarıyla yapılan bir çalışmada, çalışma şekline göre 24 saat çalışan bireylerin işe bağlı gerginlik, tükenmişlik ve duyarsızlaşma puan ortalamalarının yüksek olduğu bulunmuştur.[17] Hastanede 24 saat çalışıyor olmak hem fiziksel hem de ruhsal etkiler oluşturarak stres, anksiyete, tükenmişlik sendromu gibi birçok soruna neden olabilmektedir. Bu sorunları azaltmak için yoğun çalışma şartlarının düzeltilmesi, iş ortamındaki sorunların giderilmesi, birimler arası rotasyon yapılması önerilebilir.

Tema 2: Palyatif bakım ünitesinde yaşanan güçlükler

Bu çalışmada hemşireler konuşamayan hastalarla iletişim kurmada güçlük yaşadıklarını ifade etmişlerdir. Çalışma bulgumuza benzer şekilde, yoğun bakım hemşirelerinin bilinci kapalı hastayla iletişim kurarken bazı konularda zorluk yaşadıkları, hastanın işitme yetisini kaybetmiş olabileceği düşüncesi ve hastanın sorulan sorulara sözel cevap vermemesi hemşirelerin kendi kendine konuşuyormuş gibi hissetmelerine neden olmakta bu durumda iletişim sekteye uğramaktadır.[18] Konuştuktan sonra karşı taraftan cevap alamamak boşuna konuşuyormuş gibi bir hissiyat verdiğinden, iletişim kurmanın gereksiz olduğu düşünülüyor olabilir. Bu durumda hemşirelere konuşamayan entübe hastalarla iletişim gibi konularda ayrıntılı eğitimler verilmesi önerilebilir.

Çalışmamızda yer alan hemşireler palyatif kliniğinin kapalı ortam olmasından dolayı zorluk yaşadıklarını, kimi zaman profesyonel davranamadıklarını, sempatik tepkiler verdiklerini bu durumunda yorucu olduğunu ifade etmişlerdir. Bakım verme esnasında hasta yakını olmadığında güçlük yaşadıklarını ancak kendilerini işe yarar hissettiklerini belirtmektedirler. Literatürde palyatif hemşirelerinin ölüm kaygısı, stres ve tükenmişlik, iş doyumunda azalma, etik sorunlar ve merhamet yorgunluğu yaşadıkları belirtilmektedir.[19] Yapılan bir başka çalışmada da benzer şekilde, palyatif hemşirelerinin bakım sürecinin yoğun ve yorucu olmasına rağmen verdikleri bakımın olumlu etkilerini gördükçe mutlu olduklarını ve mesleki doyum yaşadıkları ifade edilmektedir.[15] Yaşanılan bu güçlüklerin profesyonel psikiyatri hemşireleri tarafından yürütülen duygu ve deneyim paylaşımı toplantılarında dile getirilmesinin yararlı olabileceği düşünülmektedir.

Çalışmamızda palyatif hemşireleri ajite hastaları sakinleştirme konusunda zorlandıkları belirlenmiştir. Bunun nedeninin hemşirelerin kriz yönetimi konusunda yeterli bilgilerinin olmamasından kaynaklandığı düşünülebilir. Palyatif hekimleri ile yapılan bir çalışmada hastaların depresyon belirtilerini değerlendirmede ve yönetmede yetersizlik hissi yaşadıkları bildirilmektedir.[20] Psikiyatrik belirtileri yönetmek psikiyatri profesyonelleri hariç tüm sağlık çalışanları için baş edilmesi zor bir durum olarak ifade edilmektedir.

Tema 3: Konsültasyon liyezon psikiyatrisi konusundaki düşünceler

Palyatif bakımın kalitesi hasta ve yakınlarının yaşam kalitesini etkilemektedir.[21] Yaşam kalitesinin yükselmesi sadece fiziksel değil aynı zamanda psiko-sosyal ve spiritüel gereksinimlerin karşılanmasıyla mümkün olmaktadır.[22] Bu süreçte hasta ve yakınlarının bu gereksinimlerini karşılamak hemşirelerin sorumluluğundadır.[23] Konsültasyon liyezon psikiyatri hemşiresi hastanın fiziksel durumuna ve tedavisine katılmasını engelleyen psikolojik ve çevresel faktörlere odaklanarak bu sorumluluğunu yerine getirmektedir.[8] Yaptığımız çalışmada katılımcıların çoğunun konsültasyon liyezon psikiyatrisi hakkında bilgi sahibi olmadıkları tespit edilmiştir. Konsültasyon liyezon psikiyatrisi hakkında bilgisi olan bir katılımcı ise bu birimin

kurulmasına hasta, hasta yakınları ve hemşirelerin de ihtiyacı olduğunu belirtmiştir. Yapılan bir çalışmada, hemşirelerin ruhsal sıkıntı yaşayan hastaya bakım verirken zorluk yaşadıkları ve profesyonel desteğe ihtiyaçlarının olduğu belirlenmiştir. Aynı zamanda hemşirelerin biyopsikososyal bakım, konsültasyon liyezon psikiyatrisi hemşireliği konularında bilgi gereksinimlerinin olduğu sonucuna ulaşılmıştır.[9] Bu bağlamda hemşirelik lisans eğitiminde konsültasyon liyezon psikiyatrisi hemşireliği konusunda daha detaylı bilgi verilmesi ve uygulama yapılması önem arz etmektedir.

Araştırmanın Sınırlılıkları

Mevcut çalışmanın ilk sınırlılığı örneklemi ile ilgilidir. Çalışmanın örneklemi ülkenin batısında yer alan bir hastanenin palyatif bakım biriminde çalışan hemşirelerden oluştuğu için araştırma sonuçları tüm Türkiye'yi kapsayacak şekilde genellenemez. İkincisi ise, verilerin doğruluğu katılımcıların ifadeleriyle sınırlı olup kişisel bildirimlere dayanmaktadır.

Bu çalışma sonuçlarına göre, palyatif bakım biriminde çalışan hemşirelerin özellikle psikiyatrik belirtileri olan hastalara bakım vermede, profesyonel sınırları korumada zorlandıkları ve KLP hemşireliği konusunda yeterli bilgiye sahip olmadıkları anlaşılmaktadır. Bu nedenle hasta, hasta yakınları ve sağlık personellerinin ruh sağlığının korunması ve yükseltilmesi için psikiyatri hemşireliği alanında uzman olan hemşirelerin KLP biriminde görevlendirilmesi önerilmektedir. KLP hemşiresi tarafından belirli aralıklarla palyatif kliniğinde çalışan hemşirelere yönelik iletişim, empati, ölüm kavramı, kriz yönetimi ve tükenmişlik sendromuyla baş etme konularında duygu ve deneyim paylaşımı yapılacak etkinliklerin planlanmasının önemli olduğu düşünülmektedir. Palyatif hemşireleri ile derinlemesine görüşmelerin yapıldığı çalışmaların planlanması önerilmektedir.

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KAYNAKLAR

1. Fitch, MI, Fliedner, MC, O'Connor, M. Nursing perspectives on palliative care. *APM.* 2015;4(3):150-155. https://doi.org/10.3978/j.issn.2224-5820.2015.07.04
2. International Society of Nurses in Cancer Care (ISNCC), 2015. https://isncc.org/?page=Position_Statements
3. WHO. (2020). World Health Organization. Available at: https://www.who.int/ Erişim tarihi: 20.06.2023.
4. Haavisto, E, Soikkeli-Jalonen, A, Tonteri, M, Hupli, M. Nurses' required end-of-life care competence in health centres inpatient ward – a qualitative descriptive study. *Scand J Caring Sci.* 2021;35(2):577-585. https://doi.org/10.1111/scs.12874
5. May, S, Gabb, F, Ignatyev, Y, Ehrlich-Repp, J, Stahlhut, K, Heinze, M, et al. Mental and physical well-being and burden in palliative care nursing: a cross-setting mixed-methods study. *Int J Environ Res Public Health.* 2022;19(10):6240. https://doi.org/10.3390/ijerph19106240
6. Kocaman, N. Consultation liaison nurse and psychosocial care in the general hospital. *Türkiye Klinikleri J Int Med Sci.* 2006;2(47):97-107. https://www.researchgate.net/publication/237475092
7. Kocaman, N. What is psychiatirc consultation liaison nursing and the role? *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi*. 2005;8(3):107-118. https://dergipark.org.tr/tr/pub/ataunihem/issue/2631/33853
8. Ekinci, M, Okanlı, A. Consultation liaison psychiatric nursing. *Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi*. 2001;4(2):75-80. https://dergipark.org.tr/tr/pub/ataunihem/issue/2620/33723
9. Yıldırım, S, Şimşek, E, Geridönmez, K, Basma, Ş, Vurak, Ü. Examination of knowledge and practices of nurses about consultation liaison psychiatry nursing. *Journal of Psychiatric Nursing*. 2019;10(2):96-102. https://doi.org/10.14744/phd.2019.21548
10. Yıldırım, A, Şimşek, H. Qualitative Research Methods in Social Sciences. Seçkin Yayıncılık, Ankara; 2018.
11. Sheperis, CJ, Young, JS, Daniels, H. Counseling research: quantitative, and mixed methods. In: New Jersey: Pearson Education; 2010.
12. Creswell, JW. Qualitative research methods. (M. Butun ve S. B. Demir Cev. Ed.). Ankara: Siyasal Kitabevi; 2016.
13. Tong, A, Sainsbury, P, Craig, J. Consolidated criteria for reporting qualitative research (coreq): a 32-item checklist for ınterviews and focus groups. *Int J Qual Health Care.* 2007;19(6):349-357.

https://doi.org/10.1093/intqhc/mzm042
14. Akın, E, Yıldırım, D, Özçiftçi, S, Tokem, Y. First clinical practice experiences of nursing first class students in palliative care. *KOU Sag Bil Derg.* 2020;6(1):1-6. https://doi.org/10.30934/kusbed.568973
15. Alıncak, G, Acavut, G, Soyaslan, BD, Zengin, H. Nurses' views on palliative care and death: A qualitative study. *SBÜHD* 2022;4(2):69-76. https://doi.org/10.48071/sbuhemsirelik.1125775
16. Akdeniz Kudubeş, A, Bektaş, M. The predict of palliative care knowledge and practice in the palliative care difficulties of nursing students: descriptive research. *J Tradit Complem Med*. 2021;4(3):385-393. https://doi.org/10.5336/jtracom.2020-80776
17. Karaca Sivrikaya, S, Erişen, M. Examination of burnout and work-related tension levels of health workers. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi.* 2019;22(2):121-129. https://dergipark.org.tr/tr/pub/ataunihem/issue/46381/480760
18. Kara, B. The unconscious patient with intensive care nurses communication- interaction concerning approach. Tez. İnönü Üniversitesi Sağlık Bilimleri Enstitüsü; 2014.
19. Menekli, T. Problems experienced by healthcare professionals caring for palliatıve care patients and solution suggestions. *J Pro Health Res*. 2023;5(1):81-88. https://doi.org/10.57224/jhpr.1073872
20. Lee, W, DiGiacomo, M, Draper, B, Agar, MR, Currow, DC. A focus group study of palliative physician and consultation-liaison psychiatrist perceptions of dealing with depression in the dying. *Journal of Palliative Care.* 2022;37(4):535-544. https://doi.org/10.1177/08258597221121453
21. Köktürk Dalcalı, B. Spiritual care and nursing in palliative care units. *Sakarya Üniversitesi Holistik Sağlık Dergisi*. 2019;2(2):29-37. https://dergipark.org.tr/tr/pub/sauhsd/issue/50266/555769
22. Kavşur, Z, Sevimli, E. The comparison palliative care services of turkey with some developed countries. *USBAD* 2020;2(4):715-730. https://doi.org/10.47994/usbad.780187
23. Akgün Kostak, M, Akan, M. Palliative care for children in terminal period. *Turk J Oncol.* 2011;26(4):182-193. https://www.onkoloji.dergisi.org/abstract.php?lang=en&id=797

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Occupational Visibility of COVID- 19 Disaster Heroes: Analysis from the Sample of Nurse

COVİD-19 Afet Kahramanlarının Mesleki Görünürlüğü: Hemşire Örneğinden Analiz

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ABSTRACT

Objective: The COVID-19 pandemic, which led to an urgent public health problem, is a biological disaster that had a global impact. This study aimed to examine the views of the nurses on the "superhero" discourse in the media in this disaster.

Methods: The phenomenological research method, one of the qualitative research methods, was used in the study. The research was carried out between February – April 2022 with 23 nurses working in intensive care clinics.

Results: In this study, the views of nurses who worked in the intensive care unit during the COVID-19 pandemic on the "superhero" discourse in the media were investigated under the themes of rise of heroism (being noticed, heroic discourse for higher efficiency, forced hero) invisibility of heroism (invisibility before the pandemic, invisibility during the pandemic) and death of heroism (the applause, I'm real... not a toy) . The findings of the study revealed that the contribution of nursing to the health system is a little more visible in crisis conditions such as pandemic.

Conclusion: The visibility that emerges as "heroism" or "superheroism", the vulnerability of nurses as human beings is ignored. This “professional invisibility and heroic visibility” emerges as a paradox, and nursing either becomes “invisible” as a profession or the needs of nurses for “material and moral support” as heroes can be ignored. During crisis periods such as pandemic, the vulnerability of nurses resulting from heavy working conditions should be taken into account and nurses should be supported physically, financially and morally.

Keywords: COVID-19, Disaster, Hero, Media, Nurse, Phenomenon of heroism

ÖZ

Amaç: Acil bir halk sağlığı sorununa yol açan COVİD-19 salgını, küresel çapta etkisi olan biyolojik bir felakettir. Bu çalışmada bu felakette medyada yer alan "süper kahraman" söylemine ilişkin hemşirelerin görüşlerinin incelenmesi amaçlanmıştır.

Yöntemler: Araştırmada nitel araştırma yöntemlerinden fenomenolojik araştırma yöntemi kullanılmıştır. Araştırma Şubat – Nisan 2022 tarihleri arasında yoğun bakım kliniklerinde çalışan 23 hemşire ile gerçekleştirilmiştir.

Bulgular: Bu çalışmada, COVİD-19 salgını sırasında yoğun bakımda çalışan hemşirelerin medyadaki “süper kahraman” söylemine ilişkin görüşleri, kahramanlığın yükselişi (fark edilmek, daha yüksek verim için kahramanlık söylemi, zoraki kahraman) kahramanlığın görünmezliği (pandemi öncesi görünmezlik, pandemide görünmezlik) ve kahramanlığın ölümü (alkışlar, ben gerçeğim...oyuncak değilim) temaları altında incelenmiştir. Araştırmanın bulguları, hemşireliğin sağlık sistemine katkısının pandemi gibi kriz koşullarında biraz daha görünür olduğunu ortaya koymuştur.

Sonuç: Hemşireler “kahraman” ya da “süper kahraman” olarak ortaya çıktığında insan olarak kırılganlıklarının göz ardı edilebildiği belirtilmiştir. Bu “mesleki görünmezlik ve kahramanca görünürlük” bir paradoks olarak ortaya çıkmakta ve hemşirelik ya meslek olarak “görünmez” olmakta ya da kahraman olarak “maddi ve manevi destek” gereksinimleri göz ardı edilebilmektedir. Pandemi gibi kriz dönemlerinde hemşirelerin ağır çalışma koşullarından kaynaklanan hassasiyetleri dikkate alınmalı ve hemşireler fiziksel, maddi ve manevi olarak desteklenmelidir.

Anahtar Kelimeler: Afet, COVİD 19, hemşire, kahraman, medya, kahramanlık olgusu

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INTRODUCTION

The World Health Organization defines disaster as "phenomena that cause adaptation problems in the society affected by them and disrupt the normal life order of society".[1] There are many types of disasters occurring globally. The COVID-19 pandemic, which led to an urgent public health problem, is a biological disaster that had a global impact.[2] A total of 115,000 healthcare workers, most of whom were nurses, died due to the disaster.[3] It is known that people in many countries cheered, sang, and applauded healthcare workers at night to show their respect to them for taking on this risky task during the disaster.[4] The visibility of nurses' experiences during this disaster increased public awareness of what nurses did every day and caused them to be labeled as heroes.[5] In addition, it has been stated that the heroism discourse, full of war analogies and military metaphors, is widespread in the international political leadership arena, and even that an ideology that has portrayed healthcare workers as heroes of the war between COVID-19 and humanity was produced and strengthened in the popular media.[4]

It is not something new that health workers, including nurses, are given the honor of heroism in disasters or wars. In the literature on the history of nursing, emphasis on *"heroism"* is frequently encountered in wars and disasters. For example, the Crimean War made Florence Nightingale, the founder of modern nursing, a national hero.[6] In Türkiye, the visibility of nursing as a social need coincides with the aftermath of the War of Independence. Safiye Hüseyin Elbi is the most well-known among the "*hero*" nurses of the Independence War.[7]

It is pointed out that during the COVID-19 pandemic, the discourse of *"heroism"* used for nurses is not a neutral expression of appreciation and sentimentality, but a tool used to achieve multiple goals such as normalizing risk exposure, building model citizenship, and preserving existing power relations that ignore talent.[8] It is thought that the mature management of the challenges by nurses may have caused the media to call them as heroes and that the hero discourse creates a perception that skills, education, knowledge and discipline are unimportant (or of low importance).[9] The most recognizable nursing figure of COVID-19 is not a real nurse, but rather a "super nurse" who was portrayed by Banksy as a masked female character wearing the traditional nurse cape. In the portrayal, the toy is specially selected by a little child among the other superheroes in the toy box.[8] It is stated that the media's focus on the hero narrative minimizes the possibility of healthcare professionals to address their working conditions and rights, and may cause them to ignore even the worst situation in order not to act against heroism.[10]

When the literature is examined, it is seen that the phenomenon of heroism in nursing has not been investigated sufficiently. Few studies that address nurses as heroes focus on the positive effects of this discourse on increasing the visibility and moral resilience of the profession.[8] Abuhammad et al.[11] evealed that nurses are seen as heroes by many people due to their roles during the pandemic and that nurses also define themselves as heroes.[11] Several different studies have problematized the hero discourse in nursing or investigated the effects of this discourse on nurses' professional, social, and political identities.[4,5] In their study on self-transcendence during the pandemic, Aydın et al.[12] found that nurses defined themselves as heroes. During the publication process of this study, a question from the reviewers about what might be the basis of the "heroism" discourse led us to re-review the literature, which revealed that the "hero" discourse that emerges in crisis situations has not been adequately investigated.[8]

AIM

This study aimed to examine the views of the nurses who were struggling with the a biological disaster COVID-19 crisis in the intensive care units on the "superhero" discourse in the media.

Research Questions

- What are the experiences of nurses working in intensive care during the COVID 19 pandemic regarding the "superhero" discourse?
- What are the views of nurses working in intensive care units regarding the "superhero" discourse during the COVID 19 pandemic?
- What are the feelings of nurses working in intensive care units regarding the "superhero" discourse during the COVID 19 pandemic?

METHODS

Research Type

The phenomenological research method, one of the qualitative research methods, was used in the study.[13] Phenomenology tries to understand people's views and experiences about daily life.[14] by revealing what is 'hidden' in them through sensitive methods.[15] The Consolidated Criteria for Reporting Qualitative Research (COREQ) was used as a guide in the reporting of the research.[16]

Target Population and Research Sample

The research was carried out between February - April 2022 with the nurses who cared for individuals diagnosed

with COVID-19 and treated in intensive care clinics in different provinces of Türkiye. Sample size was determined considering data saturation. The interviews were terminated when the same ideas were repeated by the participants. The study was completed with 23 participants.

Data Collection Tools

A semi-structured interview form developed based on the literature was used to collect data. [4,8,11] The first part of the semi-structured interview form included descriptive questions about the age, marital status, total years of experience, and years of experience in intensive care unit and in the COVID-19 intensive care unit. The second part of the interview form includes 13 questions prepared by three female nurse researchers who are expert in their fields and experienced in qualitative this field in order to reveal the views of nurses about the news about nurses in the media, the discourse of "*superheroism*", and the picture drawn by Banksy. The questions were presented to the opinions of one expert on qualitative research (academic who teaches courses and conducts research on qualitative research methods) and one expert on picture analysis (academic who teaches courses and conducts research on image analysis). Some of the questions were as follows: "What are your views on the news about nurses in the media (newspapers, social media, visual media, etc.) during the pandemic?"; "Nurses were declared as heroes/ superheroes in printed/visual media. What do you think is a hero/superhero?"; "What do you think about nurses' treatment as superheroes in the media during the pandemic?"; "Why do you think nurses were attributed superheroism in this process?"; "Nurses were portrayed as superheroes alongside other superheroes by a street artist in the media. What is the first thing that comes to mind about yourself/nursing when you look at this picture?"; "The media described nurses as selfless and self-sacrificing. What is your opinion on this?"[4,8,11] In addition to these questions, a series of probing questions (Can you explain this a little more? How did you feel about this?) were included in the interview, which encouraged the participants to answer or provide clarification. A pilot study was conducted with two nurses to examine the comprehensibility of the questions. After the pilot interview, it was determined that there were no questions that were not suitable for the purpose of the study and the data collection process was started. The nurses included in the pilot study were not included in the sample.

Data Collection Process

Data were collected by the first author through telephone interviews with intensive care nurses due to the risk of transmission of the COVID 19 virus. During the interview, in the question about the picture drawn by Banksy, the picture was sent to the participants via WhatsApp and their opinions about the picture were obtained. The participants were selected using the snowball sampling method, which is one of the purposeful sampling methods. The criteria for selecting the nurses to be interviewed were the participant's willingness to express herself or himself and being reflective. The snowball sampling was initiated by a nurse known to the research team and working in the COVID-19 intensive care unit of a state hospital in the province where the researchers live. Each interviewed nurse was requested to share information about nurses working in another intensive care unit, not limited to the hospitals of the province where the research was conducted, and willing to share their views on the investigated topic. During the interviews, the responses of the participants were recorded via a voice recorder with the permission of the participants. The interviews lasted an average of 32 minutes (min:29, Max:56), a total of 875 minutes. The transcription of the interviews was 144 pages.

Data Analysis

The data were analyzed using Colaizzi's phenomenological method used in the analysis of data in descriptive phenomenological studies.[17] In accordance with Collaizzi's definition, the data were read independently by the researchers in the first step, through which the researchers familiarized themselves with the nurses' heroic experiences during the pandemic. In the second step, important statements of nurses about superheroism were extracted. In the third step, these important statements were carefully examined by the researchers and the meanings of the statements were interpreted. Every important quotation has been coded to ensure semantic integrity. In the fourth step, the researchers discussed experiences with common meanings and formed themes and sub-themes. In the fifth step, the researchers made a complete and comprehensive definition of all the themes constructed in the previous step about heroism in nurses. In the sixth step, the comprehensive explanations that were created were turned into concise and condensed statements that capture only those aspects considered essential to the structure of the phenomenon. In the seventh step, the interview transcripts, the codes, and the themes were sent to three randomly-selected participants to evaluate the relevance of the findings, and their feedback was received.

Ethical Considerations

The approval of the Social and Human Sciences Ethics Committee of Ondokuz Mayıs University was obtained

(Date: 28.01.2022, Number: 2022-5) prior to the research. In addition, necessary legal permissions were obtained from the Ministry of Health in order to carry out the study. The participants were informed about the purpose of the study, and only the volunteers were included in the research. In order to ensure anonymity, each participant was coded with a number (e.g., P1) and these codes were used throughout the research. To ensure the confidentiality of the data, the raw data was recorded on an external disk.

Validity and Reliability

In this study, attention was paid to the focus and context of the study and the selection of the participants for validity. The most appropriate method was selected for data collection, and sufficient amount of data was collected.[18] Participant consent was sought to ensure reliability.[17] In addition, in order to increase the quality of the research, a researcher specialized in qualitative research was included in the research team, and a systematic approach was followed in the data collection and analysis process. The data were analyzed separately by the researchers, and a conscious effort was made to correctly interpret the meaning of the data. For reliability, the methods and analyses conducted were described in a detailed manner and the opinions of experts on qualitative research were obtained during the preparation of the semi-structured interview form consisting of open-ended questions. For the transferability of the data, a detailed description of the sample and data (dense description of sample, rich descriptions of the data) was made.[18]

RESULTS

The mean age of the intensive care nurses who participated in the study was 30.13 ± 5.4 (min:22, max:42). Nine of the participants were male. The average years of experience of the participants was 7.8 ± 5.7. The nurses reported that they worked in the intensive care unit for an average of 4.3 (min: 0.5, max: 14) years and in the COVID-19 intensive care unit for an average of 1.7 (min: 0.5, max: 2) years. Twelve participants were married and worked in the Black Sea, Marmara, and Central Anatolia regions of Türkiye (Table 1).

The analysis of the data revealed three themes and 7 sub-themes: (1) Rise of heroism (3 sub-themes), (2) Invisibility of heroism, (2 sub-themes) and (3) Death of heroism (2 sub-themes) (Figure 1).

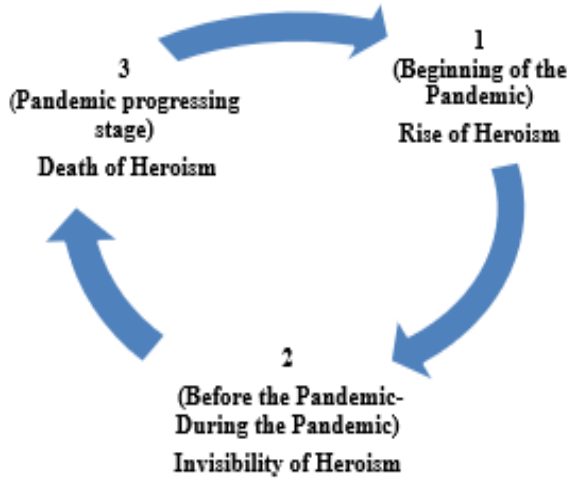

Figure 1. Themes

1. Rise of Heroism

Under the first theme, the rise of heroism, there were three sub-themes: being noticed, heroic discourse for higher efficiency, and forced hero.

Being noticed: Participants stated that nursing is a profession with low visibility, and the pandemic increased this visibility. They stated that they felt proud and happy especially when they saw the picture which was drawn by Banksy and which depicted nurses as superheroes (Table 2).

Heroic Discourse for Higher Efficiency: Participants stated that the heroic discourse in the media were produced to motivate them. A nurse reported that the price they paid during the pandemic was not normal, and thus, they were called superheroes (Table 2).

Forced Hero: Nine participants working in the intensive care unit stated that the process was very wearisome due to the cancellation of leave during the pandemic, the lack of flexible working hours, insufficient support, and exhausting working conditions. They stated that due to the intensity of COVID-19 cases, they were assigned to the newly opened intensive care units and they had trouble using the protective equipment all day (Table 2).

2.Invisibility of Heroism

The sub-themes of invisibility before the pandemic and invisibility during the pandemic emerged under the theme of invisibility of heroism.

Table 1. Descriptive Characteristics of the Participants

Participant	Gender	Age	Marital Status	Total Years of Experience	Years of Experience in ICU	Duration of working in the COVID-19 ICU	Region
P 1	M	32	Single	13 years	10 years	2 years	Black Sea
P 2	F	27	Married	5 years	5 years	2 years	Black Sea
P 3	F	27	Married	10 years	2 years	1,5 years	Marmara
P 4	F	41	Married	19 years	10 years	2 years	Black Sea
P 5	F	28	Married	4 years	2 years	2 years	Central Anatolia
P 6	F	29	Single	6 years	6 years	1 years	Black Sea
P 7	F	30	Married	10 years	7 years	2 years	Marmara
P 8	F	27	Single	7 years	3 years	2 years	Marmara
P 9	M	30	Married	8 years	1,5 years	1,5 years	Black Sea
P 10	M	42	Married	15 years	4 years	2 years	Black Sea
P11	M	31	Single	5 years	5 years	2 years	Black Sea
P 12	M	29	Married	3,5 years	2 years	1,5 years	Black Sea
P 13	F	27	Single	4 years	2years	2 years	Black Sea
P14	F	27	Single	5 years	5 years	2 years	Black Sea
P15	M	26	Single	4 years	3 years	1,5 years	Central Anatolia
P16	F	42	Married	23 years	14 years	2 years	Black Sea
P17	M	27	Single	2,5 years	2 years	2 years	Black Sea
P18	M	25	Single	4 years	2 years	2 years	Black Sea
P19	F	29	Married	10 years	3,5 years	2 years	Marmara
P20	F	31	Married	4 years	1 years	1 years	Central Anatolia
P21	M	27	Single	4 years	6 month	6 month	Central Anatolia
P22	F	37	Married	13 years	7 years	2 years	Marmara
P23	F	22	Single	1 years	1 years	1 years	Black Sea

P; Person, ICU; Intensive Care Unit

Invisibility Before the Pandemic: Participants stated that they were working in the same way before the pandemic; however, they were not as visible as in the pandemic (Table 2).

Invisibility during the Pandemic: Participants stated that nurses were not given enough place in the programs held during the pandemic (Table 2).

3. Death of Heroism/Heroes

Two sub-themes emerged under the third theme, the death of heroism: applause and I am real… not a toy.

The Applause: Participants stated that they were given an applause for their hard work during the pandemic. They reported that this collective action as a country made them happy, but it lasted for a short time (Table 2).

I'm Real… Not a Toy: Five participants stated that they did not like the fact that they were depicted as a toy in Banksy's work and that the other heroes in the work were not real; however, what they experienced was real. While the unreal heroes are immortal, they stated that they witnessed the death of their colleagues in real life, which affected them negatively (Table 2).

DISCUSSION

Define is heroism as offering benefits in war or in a dangerous situation. The hero, on the other hand, is defined as the person who shows this heroic behavior. It is known that healthcare professionals always work with certain risks.[20] During the a biological disaster COVID-19 pandemic, these risks have increased considerably and health workers, including nurses, have begun to be defined as "heroes".[21] In fact, this situation is almost the same as when those who are only "soldiers" in peacetime are described as "heroes" in war. The only difference is that the war has been fought in "health institutions". As seen in the first theme of the research, the rise of heroism, the prominence of nurses as heroes during the pandemic, which is a dangerous situation itself, is seen in the sub-theme of "being noticed". The nurses stated that they were valued because of the increased visibility of their work during the pandemic, which caused not only the public but also all health workers to find an answer to the question of "What does a nurse do?". Similar to our findings, Chinese nurses who faced difficulties during the pandemic stated that they bravely overcame the challenges and were hailed as heroes.[22] When the artwork drawn by British street artist

Table 2. Main Themes, Sub-Themes and Examples of Quotations Obtained from Interviews

Main themes	Sub-themes	Examples of quotations
Rise of Heroism	**Being noticed**	*We have been on the agenda for a long time. This has increased our visibility. After all, when people were afraid and ran away, we were the ones trying to provide care. In that sense, I think it is a good thing for nursing* (P7). *(For Banksy's work) This is actually the unfolding of society's views of nurses during the pandemic. It's a demonstration of what nurses do. You know, the work we do is not easy and this picture demonstrates the heavy burden we carry as nurses* (P11). *It felt strange to be a toy that children could play with. Batman and Spiderman are so strong, and it felt strange to feel that we are considered to be as strong as they are. I thought I was very talented. The only difference is that Batman and Spiderman do things that aren't real, but we do real things* (P14).
	Heroic discourse for higher efficiency	*Because the price we paid was not ordinary. They (media) knew this too… When the pandemic first started, I started to work in the intensive care unit and had to stay away from my family because I did not want my family, my mother, father, brother, innocent people, people who have nothing to do with the virus to be infected by me. … The people who reported such news already knew the price I paid. We were called superheroes because of these extraordinary conditions and the commitment we showed* (P15). *A new pandemic emerged in the world. Since the first group of people to fight the pandemic was healthcare professionals, I think they needed some motivation… I think the aim of it (heroic discourse) was to prepare us for the process … It was a strategy employed by the media to motivate us more. Social media, TV, and newspapers all worked to reach this aim… preparing healthcare professionals psychologically for the process and maximizing their efficiency* (P21).
	Forced hero	*For example, we had scars on our faces and we were soaked in sweat. I don't know if I can work under the same conditions again. It was indeed a very intense and tiring process…psychologically and spiritually grueling* (P6). *I am not free and not a hero when my rights are violated. I am a true hero when I have rights and can exercise them… This really devalues us in people's eyes. We can be declared as superheroes, but I don't know how much superhero a person can be when duties are made compulsory (by law)* (P19).
Invisibility of Heroism	**Invisibility before the Pandemic**	*Perhaps we were a closed box. We couldn't tell what we experienced to people, or even if we told our experiences, they sounded a bit extreme... Actually, we were already working under these conditions. But I think our work became a little more visible during the pandemic* (P2). *The public have seen what the nursing profession includes… In fact, even the doctors, whether a professor or an assistant, and health workers had the best answer to the question of "What do nurses do?" during the pandemic. They also became ill, and so had the opportunity to see what we were doing there … I received similar feedback from my doctor friends* (P11).
	Invisibility during the Pandemic	*When the pandemic first started, the issues that were frequently discussed in the news, panel discussions, and the statements made by the scientific committees were the ways to approach the disease and what should be done. Well, as a nurse, I worked +128 hours a month during the pandemic. Why didn't they bring this up? Why didn't they say "Healthcare professionals are working overtime due to the lack of personnel"? They could have kept such news on the agenda. But it was not done* (P10). *I think nurses, nurses with administrative duties, or our fellow nurses in nursing associations could have been given a chance to voice their opinions in the media. Or during the panel discussions, there could have been a nurse in addition to doctors and people from the Ministry of Health. Or, when the ministry held a meeting, I think it should have listened to nurses as well… For example, the problems related to COVID-19 were discussed and addressed, but no questions were posed to the nurses about this. Did the problems disappear when nurses were announced as superheroes? These were never discussed. I saw very few nurses. We listened to what they had to say carefully.*(P12). *The compliments and the praise were very nice, but no one talked about our difficult working conditions. It would have been nice if they had shared news about the challenges we faced* (P22).
Death of Heroism/ Heroes	**The Applause**	*There were pieces of news in which nurses were in the foreground and they were described as 'heroes'. We were given an applause for some time. Some people poured into streets only for nurses, and such news, of course, still remains in the back of our minds… I can say that it was at least a collective reward given by our country* (P15). *You know there was a process of giving an applause when the pandemic first started. People were kind enough to show for a few days that they loved and appreciated us, but after some time, things turned around* (P4).
	I'm Real… Not a Toy	*I think what they call heroism is not like in the movies. That's why, it (Banksy's work) seemed funny to me… This is not a realistic hero, you understand? Other heroes are not real. They are human-made stuff. However, the situation we are in right now is so real* (P3). *The number of transmissions increased after contact with patients and our colleagues with chronic diseases barely survived. We lost some of our close friends, which affected us deeply. It was the death of the healthcare workers that we were most affected by in this process* (P11).

Banksy during the pandemic and donated to Southampton University Hospital (United Kingdom) was shown, many of the participants in our study stated that they felt they were noticed and were proud. In their study on citizens' perceptions of nurses, Foà et al.[23] reported that citizens' and healthcare professionals' awareness of the role of nursing increased during the pandemic. On the other hand, the discourse of heroism is a problematic one. In the study by Gündüz et al.[24] investigating the effect of the pandemic on the nursing image in the society, it was stated that more than half of the participants had a positive change in their beliefs about the nursing profession during the pandemic process. During an interview, a specialist nurse was shown the artwork drawn by Banksy and the nurse emphasized that it was embarrassing for people to realize the significance of the work nurses do during the pandemic.[25] It is thought that the discourse of heroism was promoted by the fact that nurses were exposed to more risks during the pandemic; their responsibilities increased; they were separated from their families, and they had to fight the pandemic at a time when everyone stayed home. Halberg et al.[10] argued that the hero discourse has removed the responsibility of politicians and imposed this responsibility on hospitals and health workers. In this study, one nurse stated that they were not given enough say and that they did not have the opportunity to express the problems they faced during the pandemic. The nurse's question of *"Did these (problems related to working conditions) disappear when we were depicted as superheroes?"* is directly related to Halberg's argument. Another study in which the feeling of worthlessness was among the negative emotions experienced by nurses during the pandemic[26] revealed that the nurses were not attached the value they deserved.[12] Similarly, in this study, the nurses stated that they needed to see their efforts supported financially and spiritually, their working conditions improved, and they are respected, instead of promoting a heroism discourse.

Cox[21] reported that the excessive use of the concept of heroism for healthcare professionals in the media can have a negative psychological effect on them, by implying that all healthcare professionals should be heroes. In our study, the nurses stated that their workload was excessive during the pandemic, their responsibilities increased, and the discourse of heroism was deliberately created for higher efficiency and so that they could fight on the front lines for longer. In addition, the nurses stated that such a discourse was promoted so that they would not have any expectations due to "their work during the pandemic". In the pandemic, nurses classified themselves as "frontline workers" who were at high risk for high viral load, infection, and death.[27] Stokes-Parishce et al.[9] stated that the hero portrayal during the pandemic was even dangerous because nurses, who were defined as having superpowers, could step forward to overcome the negativities no matter what happened to them, and providing a safe working environment would be less of a priority for them. In another study, It was reported that critical care nurses did not perceive the hero and angel labels positively and were concerned about unrealistic expectations, potential workplace safety risks and low remuneration due to this labeling.[28] Another study underlined that most of the nurses considered it their duty to take care of inpatients with the diagnosis of COVID-19. However, it was also emphasized that duty and volunteerism were not equivalent, and one of the nurses stated that she *"cannot accept being described as a hero because it is not based on volunteerism"*.[10] The nurses in our study also stated that the process was wearisome due to the inflexibility of working hours, working overtime, not being sufficiently supported financially and spiritually, and intense working conditions. Some of the participants said that they cannot truly become superheroes when what they experience is not their own free choice.

The second theme of the study is the invisibility of heroism/heroes, which includes the sub-themes of invisibility before the pandemic and invisibility during the pandemic. The participants stated that they were working with high risk before the pandemic, but this was not seen. They further stated that they continued to work despite the increasing risks in the pandemic, but received limited coverage in the news, and they were somehow invisible. The nurses argued that they deserved to have a more say both in the media and in the boards related to COVID-19. McDonald[29] reported that during the pandemic, nurses directly provided a large part of health services, coordinated high-risk patient care and services, and kept the health system operational with innovations in protocols and treatments; however, these were rarely visible in pandemic response forums. The data on the pandemic indicated that nurse visibility is mostly given through generalizations within categories such as 'multidisciplinary teams' or 'health workers'. In addition, it is emphasized that invisible nursing care is expressed not as the result of a logical professional judgment based on experience and knowledge, but as a service that includes all actions, attitudes and behaviors that are intangible, undervalued, and perceived depending on the goodwill of the nurse. Unfortunately, it is stated that this has an impact not only on the lack of recognition of nurses' work in the clinical setting, but also on the position and portrayal of

nursing in public and mass media.[30]

According to the nurses, social support given in difficult working conditions can alleviate the degree of psychological damage and can be an important encouraging factor for nurses' compliance and professional benefit. This support refers to moral and material help and support from all aspects of society, including family, friends, leaders, and colleagues.[31] "Applause", which is one of the sub-themes of "death of heroism/heroes", is important because it points to the social support given during the pandemic. The nurses in the study stated that they were given an applause by the public and administrators for their hard work during the pandemic for some time. They stated that this action, which the entire society performed together, made them happy. One of the participants stated that "*There were pieces of news in which nurses were in the foreground and they were described as heroes*". Halberg et al.[10] also reported in their study that in the first months of the pandemic, the media, politicians and the public supported and applauded the front-line healthcare workers around the world. Another study suggested that the public and media profile of nursing has never been this high. It has been reported that, nurses and healthcare workers were applauded, praised and honored for their work during the pandemic.[32, 33] However, it is also stated that artworks, headlines, and campaigns that feature nurses as superheroes can be easily forgotten and these may cause the ongoing needs of nurses and their struggle for wages, conditions, and status to be thrown aside.[34] In a study conducted by Stokes-Parish[9], participants expressed that they were concerned about unrealistic expectations, potential workplace safety risks and low remuneration in the COVID 19 process. In fact, the results of this study are particularly important in that the nurses stated that the danger pointed out by McAllister et al.[35] was actually experienced; they saw nothing but applause in return for their hard work during the pandemic; the applause decreased or even ended; and their financial and moral support needs persist although they continue to work in the same way. These findings also explain why the theme of "applause" is a sub-theme of "death of heroism/heroes", rather than the theme of "rise of heroism".

Nurses and other healthcare workers are both mortal and emotionally vulnerable. As McAllister et al.[35] emphasized in their study, it is important to remember that nurses are not angels or heroes, and it should be noted that nurses are not superhuman beings and they can be good or flawed and strong or vulnerable as any person or any group. Figures from the National Health Commission of China demonstrate that more than 3300 healthcare workers were infected in early March, 2020 and 20% of healthcare workers in Italy were infected and some died.[27] It has been also noted that there are well-known and accepted risks in the nursing profession, such as the prick of an infected needle. However, in these cases the risk is minimized through specific procedures, training, availability of relevant equipment and quality measurement, as well as organizational guidelines and assistance. On the other hand, it has been stated that the risk that nursing personnel were exposed to during the pandemic deviated significantly from the accepted risk levels.[10] The participants in our study reported that many of their colleagues and health workers became extremely ill and lost their lives, which considerably affected their psychology. These expressions support the argument of McAllister et al.[35] that nurses are not angels and heroes.

In addition, some participants stated that when they saw the picture drawn by Banksy, they did not like the idea that they were depicted as a toy and that the other heroes in the work were not real, but what they experienced was real. These statements led to the emergence of the theme "I'm Real… Not a Toy". In an interview, Professor Sabine Hahn stated that the painting evoked mixed feelings in her, similar to the nurses who participated in our study. She explained that when she saw the picture, she felt that a child was playing with them (nurses) and it was only a matter of time before they got into the wastebasket with Superman and Spider-Man.[25] In their study, Stokes-Parish et al.[9] indicate that the "hero nurse" quote may lead to the false belief that nurses are somehow endowed with high-level skills and knowledge and they have superhuman qualities. It is emphasized that this can be considered synonymous with a disciplined athlete only being "talented" and that professional commitment and work can be ignored.

Limitation of Study

Interviews were conducted online because the risk of the epidemic continued and nurses working in the intensive care unit working in different provinces took part in the study.Another limitation is that the study was conducted in one country. Countries have experienced the pandemic process differently. Therefore, these experiences affected the views and thoughts of nurses.

The findings of the study revealed that the contribution of nursing to the health system is a little more visible in crisis conditions such as pandemic. However, when this visibility emerges as "heroism" or "superheroism", the vulnerability of nurses as human beings is ignored. This "professional invisibility and heroic visibility" emerges as a paradox, and nursing either becomes "invisible" as a profession or the

needs of nurses for “material and moral support” as heroes can be ignored. Nurses stand out as "heroes" in crisis situations such as pandemic, which should not cover up the provision of safe working environments through manipulations for the high efficiency required by the pandemic. Nurses should be empowered to plan the nursing workforce in pandemic or disaster situations that, we understand, are not at all unlikely. Nurses can work effectively and safely and be constantly visible only by receiving the financial and moral support they deserve. Nurse advocacy and participation are important in maintaining public awareness of the causes of nursing invisibility and occupational risks. When these conditions are met, the naive drawing of Banksy or the applause given by the society will not be met with suspicion by the nurses, but will be embraced modestly.

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REFERENCES

1. World Health Organization (WHO). Disaster & Emergencies Definitions Package. https://apps.who.int/disaster/repo/7656.pdf 2002. Accessed August 15, 2022.
2. Tercan B. Biological disasters and COVID-19. *JOPEHS*. 2020;1(1):41-50. https://dergipark.org.tr/en/download/article-file/1141355
3. International Council of Nurses. https://www.icn.ch/news/icn-says-115000-healthcare-worker-deaths-covid-19-exposes-collective-failure-leaders-protect.2021. Accessed August 15, 2022.
4. Einboden R. SuperNurse? Troubling the hero discourse in COVID times. *Health.* 2020;24(4):343-347. https://doi.org/10.1177/1363459320934280
5. Morin KH, Baptiste D. Nurses as heroes, warriors and political activists. *J Clin Nurs.* 2020;29(15-16):2733-2733. https://doi.org/10.1111/jocn.15353
6. Winkelstein JW. Florence Nightingale: founder of modern nursing and hospital epidemiology. *Epidemiology.* 2009;20(2):311. https://doi.org/10.1097/EDE.0b013e3181935ad6
7. Gören ŞY, Yalım NY. A pioneer in the history of nursing “Safiye Hüseyin Elbi”. *Lokman Hekim Journal*. 2016;6(2):38-45. https://dergipark.org.tr/en/pub/mutftd/issue/43177/523722
8. Mohammed S, Peter E, Killackey T, Maciver J. The “nurse as hero” discourse in the COVID-19 pandemic: A poststructural discourse analysis. *IJNS.* 2021;117:103887. https://doi.org/10.1016/j.ijnurstu.2021.103887
9. Stokes-Parish J, Elliott R, Rolls K, Massey D. Angels and heroes: The unintended consequence of the hero narrative. *Journal of Nursing Scholarship*. 2020;52(5):462-466. https://doi.org/10.1111/jnu.12591
10. Halberg N, Jensen PS, Larsen TS. We are not heroes—The flipside of the hero narrative amidst the COVID19-pandemic: A Danish hospital ethnography. *J Adv Nurs*. 2021;77(5): 2429-2436. https://doi.org/10.1111/jan.14811
11. Abuhammad S, AlAzzam M, Mukattash T. The perception of nurses towards their roles during the COVID-19 pandemic. *Int J Clin Pract.* 2021;75:e13919. https://doi.org/10.1111/ijcp.13919
12. Aydın M, Aydın Avci İ, Kulakaç Ö. Nurses as the leading fighters during the COVID-19 pandemic: Self-transcendence. Nurs Ethics. 2022;29(4):802-818. https://doi.org/10.1177/09697330211065848
13. Creswell J, Poth C. Qualitative inquiry and research design: choosing among five approaches. *Health Promot Pract.* 2015;(16):473–475. https://doi.org/10.1177/15248399155809
14. Polit D, Beck CT. Essentials of nursing research, appraising evidence for nursing practice. 9th ed. Philadelphia: Wolters Kluwer.2018.
15. Matua GA, Van Der Wal DM. Differentiating between descriptive and interpretive phenomenological research approaches. *Nurse Res* 2015;22(6):22-27. https://doi.org/10.7748/nr.22.6.22.e1344
16. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int Journal Quality Health Care*. 2007;19:349–357. https://doi.org/10.1093/intqhc/mzm042
17. Colaizzi PF. Psychological research as the phenomenologist views it R.S. Valle, M. King (Eds.), Existential-Phenomenological Alternatives for Psychology, Oxford University Press, New York. 1978; 48-71.

18. Yaşar M. The Problem of Quality in Qualitative Research. *MSKU Journal of Education*. 2018;5(2):55-73. https://doi.org/10.21666/muefd.426318
19. Plummer-D'Amato P. Focus group methodology Part 1: Considerations for design. *IJTR*. 2013;15(2):69-73. https://doi.org/10.12968/ijtr.2008.15.2.28189
20. Turkish Language Association. https://sozluk.gov.tr/ 15.08.2022
21. Cox CL. 'Healthcare Heroes': problems with media focus on heroism from healthcare workers during the COVID-19 pandemic. *JME.* 2020;46(8):510-513. https://doi.org/10.1136/medethics-2020-106398
22. Jiang L, Broome ME, Ning C. The performance and professionalism of nurses in the fight against the new outbreak of COVID-19 epidemic is laudable. *Int J Nurs Stud*. 2020;107:103578. https://doi.org/10.1016/j.ijnurstu.2020.103578
23. Foà C, Bertuol M, Baronchelli E, et al. The influence of media representations on citizens' perceptions towards nurses: a comparison between before and after the COVID-19 pandemic. *Acta BioMed*. 2021;92(2):1-13. https://doi.org/10.23750/abm.v92iS2.12614
24. Gündüz CS, Bilgiç G, Durmuş A, et al. The impact of COVID-19 pandemic on nursing image in society: a cross-sectional study. *Turkiye Klinikleri J Nurs Sci.* 2023;15(4):1114-1121. https://doi.org/10.5336/nurses.2023-96324
25. Hypotheses. Learning From Corona. Superheroes in the Hospital? https://hccd.hypotheses.org/1033. Accessed June 29, 2020.
26. Akkuş Y, Karacan Y, Güney R, Kurt B. Experiences of nurses working with COVID-19 patients: A qualitative study. *JCN.* 2022;31(9-10):1243-1257. https://doi.org/10.1111/jocn.15979
27. Lancet T. COVID-19: protecting health-care workers. *Lancet (London, England).* 2020;395(10228):922. https://doi.org/10.1016/s0140-6736(20)30644-9
28. Stokes-Parish J, Barrett D, Elliott R, et al. Fallen angels and forgotten heroes: A descriptive qualitative study exploring the impact of the angel and hero narrative on critical care nurses. *Aust Crit Care. 2023*;36(1):3-9. https://doi.org/10.1016/j.aucc.2022.11.008
29. McDonald T. Speak truth to power and consolidate the nursing visibility gained during COVID-19. *Int Nurs Rev*. 2022;69:255–260. https://doi.org/10.1111/inr.12760
30. Hoeve YT, Jansen G, Roodbol P. The nursing profession: Public image, self-concept and professional identity. A discussion paper. *J Adv Nurs*. 2014;70(2):295-309. https://doi.org/10.1111/jan.12177
31. Jinxia JIANG, Xiaoping ZHU, Haiyan SHAO, Changcui, QIU. A qualitative study on nursing experience of volunteer nurses from Shanghai to patients with COVID-19. *OHER.* 2021;39(1):103-106. https://doi.org/10.16369/j.oher.issn.1007-1326.2021.01.022
32. Barrett D, Heale R. COVID-19: reflections on its impact on nursing. *EBN.* 2021;24(4):112-113. http://dx.doi.org/10.1136/ebnurs-2021-103464
33. Kök M, Ergezen FD, Hakbilen HG, et al. COVID-19 against humanity: The experiences of frontline nurses and physicians working in COVID-19 wards. *TJHSL* 2023;6(2):83-91 https://doi.org/10.56150/tjhsl.1266088
34. Daniel Z. Economists and nurses call for medical heroes to be rewarded with increased wages. Live Blog ABC News. https://www.abc.net.au/news/2020-05-25/calls-to-reward-medicalheroes-with-increased. 2020 Accessed May 24, 2020.
35. McAllister M, Lee Brien D, Dean S. The problem with the superhero narrative during COVID-19. *Contemporary Nurse* 2020;56(3):199-203. https://doi.org/10.1080/10376178.2020.1827964

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The Challenges Experienced by International Nursing Students in Nursing Education: A Qualitative Study

Uluslararası Hemşirelik Öğrencilerinin Hemşirelik Eğitiminde Yaşadığı Güçlükler: Niteliksel Bir Çalışma

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ABSTRACT

Objective: The study aimed to determine the challenges experienced by international nursing undergraduate students during their education period.
Methods: A phenomenological research design was used. The study was conducted with 20 international nursing students enrolled in a foundation university in Türkiye. Colaizzi's phenomenological data analysis method was employed in the study.
Results: Based on the study's results, three main themes, 'Learning in a different environment', 'Challenges', 'Solution-Non Solution' and 'System difference, Language problems in clinical practice, Broad nursing curriculum, Facilitators, Language barrier, Feeling homesick, Racism and discrimination, Housing difficulties, Lack of funding, Instant solution, Failing to find a solution sub-themes themes were created.
Conclusion: It has been observed that students experience different environments, uncertainties, and various challenges, and that these situations directly affect their education and success. To that end, both the institutions they receive education and the academicians must support the students in various ways.
Keywords: International education, qualitative, nursing education, nursing students

ÖZ

Amaç: Araştırmanın amacı uluslararası hemşirelik lisans öğrencilerinin eğitimleri süresince yaşadıkları zorlukları belirlemektir.
Yöntemler: Fenomenolojik araştırma deseni kullanılmıştır. Araştırma, Türkiye'deki bir vakıf üniversitesine kayıtlı 20 uluslararası hemşirelik öğrencisi ile yürütülmüştür. Çalışmada Colaizzi'nin fenomenolojik veri analizi yöntemi kullanılmıştır.
Bulgular: Araştırmanın sonuçlarına göre 'Farklı bir ortamda öğrenme', 'Zorluklar', 'Çözüm-Çözümsüzlük' olmak üzere üç ana tema ve 'Sistem farkı, Klinik uygulamada dil sorunları, Geniş hemşirelik müfredatı, Kolaylaştırıcılar, Dil engeli, Memleket hasreti, Irkçılık ve ayrımcılık, Barınma zorlukları, Finansman eksikliği, Anında çözüm, Çözüm bulamama' alt temaları oluşturulmuştur.
Sonuç: Öğrenciler, farklı ortam, çözümsüzlükler, çeşitli zorluklar yaşadıklarını ve bu durumların eğitim ve başarılarını doğrudan etkiledikleri görülmüştür. Bunun için hem eğitim aldıkları kurumların hem de akademisyenlerin öğrencilere destek olmaları gerekmektedir.
Anahtar Kelimeler: Uluslararası eğitim, nitel, hemşirelik eğitimi, hemşirelik öğrencileri

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INTRODUCTION

International education involves a student's education abroad. Many factors, such as education costs, international kinship relations, foreign language expertise, academic achievements of universities, visa procedures and post-education work opportunities affect students' mobility.[1]

While trying to adapt to their new lives in a foreign country, students may confront many sociological, psychological, or cultural problems. This include language, dressing, nutrition, accommodation, social activities, and interpersonal relations.

International nursing students also adapt to a new and country-specific education, healthcare system and a new language. This situation may cause educational challenges between international and national students. This apparent disparity for international nursing students illustrates the need for academic personnel to consider extra support for these students from the perspective of students' educational equity.[2]

A study regarding the challenges experienced by international nursing students suggested that students assessed being an international student in Türkiye as a complicated process due to language barrier. Therefore, they expressed economic issues, communication problems, and the difficulty of theoretical courses as adverse experiences.[3] In other studies, international nursing students revealed that they experience social isolation and communication problems. This communication problem was intensified due to the language barrier, especially in clinical practices.[2,4-6]

The problems experienced by the students render it difficult for them to adapt, and their academic success can be adversely affected. Therefore, specifying the challenges experienced by international nursing students during their education, seeking solutions for them and supporting them as educators is critical.

English Nursing education in Türkiye has been increasing in recent years. In parallel, the number of international students is also increasing. In this sense, there are not many studies conducted in Türkiye regarding the evaluation of students. In terms of evaluating the situation in Türkiye, this study will contribute to the literature and attract the attention of a wide international audience.

AIM

The study aimed to determine the challenges experienced by international nursing undergraduate students during their education period in Türkiye.

Research Question

- What are the difficulties international nursing students experience while studying nursing in a foreign country?

METHODS

Study design

A descriptive phenomenological design was used for the study. Phenomenological study reveals the meaning of experiences regarding a concept or phenomenon for individuals. When presenting a phenomenon, it is necessary to focus on explaining the common aspects of all participants. The most important role and responsibility of a researcher who prefers the phenomenology design, one of the qualitative research approaches, is to understand, investigate and reveal the effect of the research question on the "lived experiences" of the participants. Through qualitative phenomenological research, participants are given the opportunity to present their stories, have their voices heard, and make sense of the shared phenomenon. In a phenomenological research tradition, the number of participants can range from two to 25.[7]

The literature states that researchers conducting qualitative phenomenological studies should ask only one or two central questions and then support the central questions with a maximum of five to seven sub-questions.[7] It aimed to address the question, "What are the most common negative experiences that international nursing students encounter during their nursing education, and how are students affected by these experiences?" The Consolidated Criteria for Reporting Qualitative Studies (COREQ) was used as a tool due to their relevance in qualitative studies.[8]

Participants

The research was conducted in the English Nursing Program of a foundation university located Türkiye in the 2021-2022 academic year. The research population comprises twenty one international students. At the time of the study, there were a total of 21 enrolled students. Since one of them did not accept to participate in the study, the study was conducted with a total of twenty students. A purposeful random sampling was used in the research. Twenty international undergraduate nursing students who agreed to participate (P) in the study were included.

Data collection

***Methods and Tools*:** In this study, the focus group interview method was used. Information Form and Semi-Structured Interview Form were used to collect data. The interview was conducted face-to-face and the purpose of the study was explained before the interview. The information about using a voice recorder during the interview was given. The

interviews consisted of a moderator and a recorder. The moderator asked the questions and moderated the conversation. The researchers were two nursing academics who speak a foreign language. The research began with students who agreed to participate, and the study was concluded when saturation was reached, with the same answers being given to the research questions by groups of 7-8 people. The themes were not predetermined and were created as a result of data analysis.

Information Form: The form had seven questions regarding gender, age, duration of stay in Türkiye, duration of studentship in the nursing department, and Turkish proficiency.

***Semi-Structured Interview Form*:** The form comprised the following four semi-structured interview questions prepared by the researchers.

- What are your thoughts about studying in a foreign country?
- What are the positive and negative experiences you have had during your nursing education?
- What are the difficulties you experience while studying nursing in a foreign country?
- How do you solve the challenges and problems you experience?

Focus group is a technique that aims to collect data by creating a polyphonic environment where participants do not feel the need to hide their true thoughts, usually carried out with participants with some common characteristics and a moderator. It is stated in the literature that the interview group should be between 6 and 12 people and that interviews should be conducted with at least three different groups for the research.[9] Data collection was conducted through three focus group interviews. There are 7-7-6 students in the groups. Focus group interviews were conducted in the presence of a moderator researcher and a reporter who were sitting at a round table in a room where only the participants and researchers were present. Each group was interviewed face-to-face for approximately 45–60 minutes. Care was taken to obtain the opinions of each student, and the students who remained silent were called by their names and encouraged to participate. Interviews were conducted in English. The study was finalized when the data started to repeat, in other words, when it reached saturation. [10]

Data analysis

During the analysis of the qualitative data, all the answers, reactions, and silences of the participants were recorded. They were transcribed, all researchers read the transcript, and the participants were asked to read the transcript and make necessary corrections to increase the validity of the data. The data were de-identified by removing names and the research findings were presented with numerical identifiers instead of personal identifiers.

Colaizzi's[11] phenomenological data analysis method was employed in the study: (1) The interviews were transcribed in the original English language, and all were read. (2) To understand the emotions and experiences conveyed in the interviews and thus extract essential statements, the transcripts were read repeatedly, and crucial statements were identified. (3) The statements related directly to the phenomenon of interest were coded in manual thematic analysis. (4) Sub-themes and themes were grouped by the researchers. (5,6) Researchers independently translated sub-themes and expressions into Turkish, and inconsistencies were checked. (7) To verify the themes, a copy of the transcript was given to the students and they were asked to read it.[10] Finally, the themes and subthemes were validated by the participants.

Descriptive analysis was performed in SPSS.18 program for sociodemographic data.

Ethical considerations

In order to implement the study, ethics committee approval from the Fenerbahçe University Ethics Committee at 04.13.2022 (2022/E-67888467-204.01.07-7870), institutional permission from the institution, and written permission from the participants declaring that they agreed to participate in the study were obtained. Students were willing to share their difficulties and were able to express their opinions openly. The personal information of the participants was kept confidential.

RESULTS

Characteristics of the participants

Students chose a school in Türkiye due to high-quality education system even though only a few know Turkish. The descriptive characteristics of the students revealed that their ages range between 18 and 34. Most are women; their stay in Türkiye is between 1-3 years, and most come from African countries (Table 1).

Thematic Analysis

The focus interviews suggested that three main themes were formed: "Education" (Table 2).

Theme 1: 'Learning in a different environment'

Under this theme, students expressed their educational experiences while studying nursing in another country. First, they mentioned the differences between the

education system in their own country, and Turkish education system. Moreover, they acknowledged the language barrier, some educational facilitators, and the broad nursing education curriculum.

Table 1. Findings of Students' Descriptive Characteristics (n=20)

Characteristics	n	%
Age		
18-24	19	95
25-34	1	5
Gender		
Female	14	70
Male	6	30
Class		
First-year	20	100
Length of stay in Türkiye		
Less than 1 year	3	15
1–2 years	16	80
3 years	1	5
Country		
Nigeria	14	70
Somali	3	15
Dubai	1	5
Iranian	1	5
Lebanon	1	5
Reason for choosing a school in Türkiye		
Good education system	10	50
Desire to gain a different experience	1	5
Working in Türkiye	1	5
Affordable tuition fee	2	10
Be a beautiful country	2	10
Having scholarships to study in Türkiye	4	20
Turkish proficiency		
I can hardly understand	11	55
I know	2	10
I do not know	7	35

System differences

In this sub-theme, students compared the differences between their own country and the education system in Türkiye. They stated that the education system was different and that educators sometimes could not understand them due to the language barrier.

"Interesting, just me, like for me, I am limited in different ways. Moreover, survival in a strange land is a big factor. Education System is another big factor. The first and the most challenging part is how we study and the school. Most of the time, it looks like this, it is teachers centered. The whole attention is paid more to the teachers, and less to the students. Because these are international students, many things differ from where we come from. It is not even easy for us. But at the end of the day, because of the policy, or the management rules, we do not have a choice but to bring ourselves to that region or that place to do what needs to be done. Therefore, it is like, for me, it is like, Teacher-Centered and not the student setup. Because most times the students have little or nothing to say when the academic is going on, you just come to class, study that and just listen." (P14)

Table 2. Main Themes, Sub-themes and Codes

Main theme 1. Learning in a different environment	
Sub-themes 1	**System difference**
Code	The different education system
	Teaching lessons routinely and using the same method
Sub-themes 2	**Language problems in clinical practice**
Code	Being new to the country
	Communication difficulties
Sub-themes 3	**Broad nursing curriculum**
Code	The extensive curriculum
	Difficulty of course content
Sub-themes 4	**Facilitators**
Code	Amazing opportunity
	Quality education
	Clinical practice opportunity
	Positive attitudes of nurses
Main theme 2. Challenges	
Sub-themes 1	**Language barrier**
Code	Inability to communicate
	The Turkish language has different meanings
Sub-themes 2	**Feeling homesick**
Code	Missing home
	Communication problem
Sub-themes 3	**Racism and discrimination**
Code	Having racism problem
	Missing home
	People's prejudice
Sub-themes 4	**Housing difficulties**
Code	Landlords do not rent houses to foreign students
	Not enough student dormitories
	High house rent
Sub-themes 5	**Lack of funding**
Code	Much pressure
	Difficult logistics
	Inability to find a job
Main theme 3. Solution and Non-Solution	
Sub-themes 1	**Instant solution**
Code	Using translate programs
	Being silent to people
Sub-themes 2	**Failing to find a solution**
Code	Run away
	There is nothing to do
	Being silent

"Studying is quite great. It is interesting, though, because it is a big problem with the language barrier. Because back where I am coming from, when you are taught something, you get so many illustrations to explain, even before it goes into any topic. The teacher will narrate a story stating or explaining how something was done in the past or has been taught from there that will link up to the day's topic. Thereby it makes us understand fully. The explanation is not a direct definition of what the teacher is saying, only that only the Teacher is doing that you already have the insight or what the teacher is about. Explain or teach. I do not know if you understand. Thus, it is quite different from my type of teaching like the one. I understand that the language barrier may be causing the problem because not understanding or speaking English may lead to that." (P7)

Language problems in clinical practice

Students declared that they had difficulty communicating with patients and hospital staff during clinical practice due to the language barrier. Only a few staff were able to communicate in English, and most patients spoke Turkish. The students suggested that communication was challenging during clinical applications.

"I feel that the nurses working at the hospital generally like us, I feel that they are trying to teach us something, but the language problem prevents this. Furthermore, we, of course, are students; we are still learning and eager to understand what is going on. Moreover, it is as if we are watching them without you having questions to ask." (P4)

"It is about communication and language here. We are studying nursing and English, but there are nurses here who only know Turkish. Thus, we do not know how to communicate and learn from the nurses and ask about the cases at the hospital." (P17)

Broad nursing curriculum

Students stated that the nursing education curriculum and the course contents were comprehensive, and they decleared that they had difficulty learning it.

"It is too broad, nursing as a course, and the curriculum is extensive. Moreover, it is not like an easy course at all, so the language is also like even during the debate when we are in school. When we tell people to speak English, they have their own language. We feel like we do not understand, and we understand that. Teachers, they are not like native speakers of the English language teachers, but at least they are coping." (P8)

"One semester is not really enough to pass a new certain course. One semester is not enough to know pharmacology and anatomy. Today, when I was reading, someone asked, what, where is the iliac fossa? It is funny, and the ….. if you do not know, and all that, it is because it is just for us. Then, we just focus on doing it." (P14)

"We have tremendous pressure. When we said, please show some mercy. The only answer we get is that you are a student. It is your responsibility. You are here to say yes; I know I am spelling it. But please show some mercy. Like, you can make it a little easier for us because we are not normal students." (P20)

Facilitators

The students evaluated the quality of the education they received, the facilities of the school, the university's culture, the clinical practice opportunities, and the nurses' positive attitudes toward them as facilitating factors.

"But then we have good teachers, and the laboratory is good. We do not have this back home; we do not have many schools like this school in our country, to be very, very honest." (P2)

"Yes, well, we have the opportunity to be in the hospital and practice seeing patients' occupations; the evaluation form is, it really helped us to talk to patients one on one, that is really nice." (P1)

"Even though there is the bad side, okay, suddenly the language, of course, is bad. But by the time we get used to it, we know how to like the essentials and say that. But the good side is like the nurses are really nice. Plus, I like the university culture, you know, like the universities that if you feel like an adult, you are not like in school." (P9)

"*At first, it was really, really difficult, but at the same time, because of some friendly and welcoming Turkish people, I had time to adapt to them." (P10)*

Theme 2: 'Challenges'

The second main theme, challenges, includes the challenges many students face regarding language problems, housing difficulties, racism and discrimination, and lack of funding while living and studying in a different country. The students reported that they felt homesick, how studying in a foreign country was challenging, and they were exposed to racism.

Language barrier

The students stated they had no difficulty during lectures because their theoretical lessons were 100% English. However, the language problem outside the school was reported to be severe. Additionally, some students whose native language is not English revealed great difficulty in theoretical lessons.

"The language is a barrier. It is not easy consider to speak and how to communicate with other people." (P13)

"Studying is quite great. It is interesting, though, for the language barrier, because it is really a big problem." (P7).

"I think it is the first country I have been to outside Nigeria. It has not really been a good experience because they have, like, completely different reasoning from ours. It is much more difficult, especially when someone is talking to you and you do not understand the talking. They tend to get upset at somebody not understanding them. Yes, and also, even as we are foreigners now, we are missing out on different opportunities. Some of them say conferences or occasions they are holding in school everything, including the advertisement in Turkish." (P11)

Feeling homesick

Another problem students experienced personally was that they missed their country, home, and family. The majority said living in a foreign country and being away from home was difficult.

"Since it is my first time so far from my mother, and, exactly, it is my first time that I am traveling alone by myself. Moreover, it is the first foreign country I have lived in; it is hard. Usually, I go out at night. Thus, I do not want to talk to anyone because it makes me uncomfortable. Nonetheless, studying may be hard for me because English is not my mother tongue. But it is an opportunity because I can develop every talent myself. I feel like I am growing." (P20)

"Honestly, being in a foreign country is like an amazing opportunity. You see many different people, but it is hard. It is hard because you miss your country first. Furthermore, there is much stuff here, like when you are in a foreign country; you do not know anyone. You are still new to the country; you do not know the language. If we do not want to talk specifically in Türkiye, it is because there are few English speakers. Hence, it is difficult but interesting overall and fun for me." (P9)

Racism and discrimination

Most students stated that they were exposed to racism many times, especially African students saying they were more exposed to racism because of their skin colour.

"First of all. The education system is nice. Yes, the education facilities are okay. Because I have a problem with racism, it sometimes makes me miss my home. It keeps reminding me that I am not like I am either feeling." (P1)

"Well, it is because I' am in a new country. Thus, there is nothing I can do. Hence, it was very, very bad. I felt so humiliated at that point." (P7)

"Personally, I feel I have experienced the racism stuff countless times at the shops, at the banks, on the bus, and all of that. But the one I was talking about, I think it is one of the reasons why I and some of my other brothers and sisters were transferred to the school we are currently studying. Yes, because the first time we came to Türkiye, we spent about eight months in a city called…, and I had the firsthand experience, like that was like, three weeks or four weeks when I just got sick. I experienced that. Because of that, up to this moment, it has given me the impression that Turkish people generally do not like me as a black person. Moreover, I dislike most of them because of their attitude toward us." (P4)

Housing difficulties

The students stated that they have a housing problem due to the lack of dormitories. House prices were reported to be higher, and landlords did not want to lease their house to international students. They expressed that they could only rent a place in the suburbs of the city.

"They ask you your name, and once they hear you are a foreigner, they do not give you the house. Some even increase the price of the house just because you are a foreigner. Furthermore, they want to cheat you." (P6)

"You try so hard to contact the landlord. For example, if something breaks down in the house, it seems they do not care about us. Dormitories are always full; we have to rent a house. Finding a home is also difficult. It becomes our biggest problem." (P5)

"The truth is distance. Distance from where you live to school greatly influences education in different ways. Thus, the distance has really affected me; personally, it really affects me. I know it is affecting the blood of our students. It affects students; if somebody really comes to school, the distance from the school to your house is about two hours. Then you are supposed to go home and study because of the distance and the problem you will encounter. While going home, you get tired, and you cannot sleep." (P14)

Lack of funding

The students and their families were covering the financial expenses such as tuition fees and accommodation fees. Furthermore, students suggested they had a tough time funding themselves because they did not have enough financial resources.

"Because I am sponsoring myself for school. Thus, it is challenging for me to work after school. I have too many things piled up from Monday up to Thursday. Only on

Fridays do we have free time. There is definitely no place where I can just work one day and make a living." (P7)

Theme 3: 'Solution and Non-Solution'

The last theme, *Solution and Non-Solution*, was created based on the answers by the students to the question of how they solved the problems they experienced.

Instant solution

Most students revealed that they try to solve their language problems by attempting to learn Turkish language or using translation programs over the phone. They also try to find inexpensive housing from distant parts of the city to compensate for the lack of accommodation.

"I can try to translate even the google translation or using signs or maybe just make no definitely. I' will let you luck and I try to make you understand what I am saying." (P14)

"It is really hard for me to read and study in another language. I sometimes have to spend much time; I do not understand a sentence or a whole page. Thus, I have to translate it. I need to write a sentence word by word, which takes much time." (P20)

"How do I deal with the language? It is just like demonstrating, but like my hands, if you could understand me, or I translate one of those. Then, what is the racism; how do I do with racism." (P12)

Failing to find a solution

Students suggested that they could not solve language and communication problems most of the time. They stated that they had no solution for the racism issue, which was one of the severe problems they experienced. They preferred staying silent when they were exposed to racism. They declared that they strove to solve another big problem, the lack of scholarships, by working part-time jobs. Nonetheless, they had difficulty finding a job because they could not speak Turkish.

"Turkish language has different meanings. Thus, sometimes we try to pass this on to translate it differently and give you the wrong information. Then it makes one the level of the language even more problematic." (P14)

"Turkish is really hard; you do not know how to speak Turkish." (P12)

"Racism is not in me to solve because I am not doing the racism of the day. It is up to the people aware of it to make the changes themselves. It is a decision they have made in them that we cannot even change as a perception." (P7)

"I run away from that." (P20).

"When it comes to working in Türkiye, you have to speak Turkish in the first place. And even though you understand the something in Turkish, it's not helpful at all. Moreover, we do not see many work opportunities requiring English. Hence, it is tough words, like thinking we will be studying nursing or any course and working. Thus it is the language barrier; it is hard for us to work in a job." (P10)

"I feel since they do not like me, the only business I have here is just to study and to cope. So I feel very bad when it comes to that. And I try not to relate with Turkish people because of that experience. " (P4)

DISCUSSION

In this study, we examined the challenges experienced by international nursing undergraduate students during their education in Türkiye. The main themes included '*Learning in a different environment', 'Challenges', 'Solution and Non-Solution'*, and the sub-themes were determined based on the findings.

The literature suggests that international nursing students suffer from cultural, social, financial, human relations, and different educational content problems. Furthermore, students are exposed to racism and have communication problems due to the language barrier.[2-6,10,12,13] According to Eden and et all's[14] literature review, international students have lots of problems such as language barrier, feelings of isolation, different teaching styles. The findings of our study align with the literature.

They prefer a university in Türkiye because the language of education is English, the fee for nursing education in Türkiye is lower than in other countries, and they think they will receive a better quality education than in their own country.

Concerning the '*Learning in a different environment*' theme in our research, students complain that the education system differs from their countries' system. Moreover, they have difficulty communicating with patients and hospital staff due to the language barrier they experience during clinical practice, and the nursing education curriculum is too broad and challenging. However, they suggested that the university's education quality was satisfactory. They also stated that they had adequate clinical practice opportunities and were exposed the positive and supportive attitudes of the nurses and personnel in the hospital during clinical practices, which increased their motivation.

Based on the research conducted by Mitchell et al.[2] about the language and educational issues of international nursing students in Australia, students were reported to

have problems with cultural adaptation and racism. Students also reported feeling excluded and having a language barrier due to English education, adversely affecting their theoretical and clinical studies. Kocayanak[12] examined the international education experience of nursing students in Switzerland and the USA. Students stated that international education would positively affect their careers and could be an excellent opportunity. They also stated that clinical practices and nurses working in the hospital would improve their professional development, and the mentor support increased their adaptation to the clinical environment. However, they suggested that the language barrier adversely affected their education, causing difficulties in the written exams, thus suggesting that the education program could be more flexible for international students. Mikkonen et al.[5] evaluated the clinical learning environment of international nursing students in Finland. They found that language and cultural differences were the most critical problems in clinical practice, and students felt stressed and uncomfortable. Levent et al.[15] reported that students who spoke with an accent during clinical practice felt excluded.

In the theme of '*Challenges*' which is the second main theme of our research, the language problems of the students were seriously affected their daily lives as well as their education. Since the language of education is English, students do not feel obliged to learn Turkish. However, they experience serious language problems when they are outside of school. African students were specifically reported to be exposed to racism and discrimination. They also stated that they felt homesick and missed their families. They reported that they had issues finding accommodation, financing, and resources. The landlords, who understand that dormitories are inadequate for accommodation, demand higher rents. Because they were foreigners, the landlords did not want to lease their houses to students. Moreover, African students declared that they were excluded because of their skin color. However, they also remarked that being in a different country was an excellent opportunity for them, and they had gained experience. A study conducted by Sanner et al.[6] found that Nigerian nursing students in the USA had problems regarding social isolation, exclusion, and rejection. Furthermore, students had communication issues due to their accented speech, they were exposed to racism, had no financial resources, and had to work and study simultaneously, thus making coping challenging. In the study of Green et al.[12], students stated that living in a different culture was a beneficial experience. However, students declared they experienced culture shock when they came to the country. Concurrently, they stated that being in a new country was challenging, and they had accommodation problems. However, solving these issues made them feel better and they felt more successful. Students revealed that being away from their homes was stressful, and they felt homesick and lonely. The study also suggested that the host university's contact with students by telephone or e-mail reduced these feelings. Pross[16] conducted a study in the USA and reported that international nursing students had cultural difficulties and communication problems. Tuzcu et al.[3] conducted a study in Türkiye and reported that students describe being an international student in Türkiye as a complicated process due to the language barrier. Students stated that they had financial problems and that scholarships for international students were inadequate, which forced them to work.

In the third main theme of our research, '*Solution and Non-Solution*', the students declared that they found instant and temporary solutions for the problems they experienced. Nevertheless, they could not find a solution to some problems. Most students also indicated that they lived in a different country for the first time and had difficulties, but they felt stronger and more confident as they solved the problems. They revealed that they tried to find scholarships and jobs due to a lack of finance, but they needed to speak Turkish in order to find a job. They wanted to learn Turkish, but it was reported as a complex language. They used translation applications to solve the language problem they were experiencing and try to communicate with their body language. However, they could not solve racism and chose to remain silent in such situations. They usually rented a house from distant parts of the city for shelter, but it was also a problem in terms of transportation. In similar studies, students suggested that they had to work outside school hours due to a lack of funding and remain silent about language problems and social isolation.[3,6] Students also reported that they feel better and more successful as they solve the problems they experience.[12]

Study limitations

The study results cannot be generalized to students studying at universities that provide similar education since this study was conducted at a single university. Since students of African descent were the majority, they may have experienced more problems than other students due to their skin color. This may have also affected the results.

As a result of the study, the main themes Learning in a different environment, Challenges, Solution and Non-Solution were identified. Under these themes, it shows that international nursing students may face many problems such as language barrier, housing difficulties, lack of funding, racism and discrimination. They tried to solve

some of these problems themselves, but they needed help to solve the most of them. Therefore, the students' institutions and academicians should support their students. Because nursing education is a challenging process comprising theoretical and practical parts, students can only be successful if they can focus on their education. Based on these results, it can also be concluded that fostering a culturally inclusive environment and promoting social integration among international students can significantly enhance their overall academic experience and well-being, further contributing to their success in nursing education. The following suggestions can be helpful based on our study's results: Even if the language of instruction is English, students can be supported and given extra language courses to learn the host country's language. During the clinical practices, they should be working with guide nurses and exposed peer support. Moreover, with different teaching methods, theoretical lessons could be more engaging. Lastly, a viable international student unit at the university to offer counseling and support when needed may be beneficial.

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REFERENCES

1. Levent F, Karaevli Ö. Policies for international students' education and recommendations for Turkey. *Journal of Educational Sciences*. 2013;38:97-117. https://doi.org/10.15285/EBD.2013385569
2. Mitchell C, Del Fabbro L, Shaw J. The acculturation, language and learning experiences of international nursing students: Implications for nursing education. *Nurse Educ Today.* 2017;56:16–22. http://dx.doi.org/10.1016/j.nedt.2017.05.019
3. Tuzcu A, Bademli K, Kırca N, Günbayı İ. International nursing students' view in education process: a phenomenological study international nursing students. *J DU Health Sci Ins.* 2020;10(1):100-107. https://dx.doi.org/10.33631/duzcesbed.548669
4. Edgecombe K, Jennings M, Bowden M. International nursing students and what impacts their clinical learning: Literature review. *Nurse Educ Today.* 2023;33:138–142. http://dx.doi.org/10.1016/j.nedt.2012.07.015
5. Mikkonen K, Elo S, Miettunen J, Saarikoski M, Kääriäinen M. Clinical learning environment and supervision of international nursing students: A cross-sectional study. *Nurse Educ Today*. 2017;52:73–80. http://dx.doi.org/10.1016/j.nedt.2017.02.017
6. Sanner S, Wilson AS, Samson L. The experiences of international nursing students in a baccalaureate nursing program. *J Prof Nurs.* 2002;18(4):206-213. http://dx.doi.org/10.1053/jpnu.2002.127943
7. Kıral B. Phenomenology design in qualitative research: types and research process. *JRET.* 2021;(10)4:92-103.
8. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care.* 2007;19:349–357. https://doi.org/10.1093/intqhc/mzm042
9. Gülcan C. A Qualitative Data Collection Tool: A study on the application and validity of focus group technique. Mersin University Institute of Social Sciences Journal. 2021;(4)2:94-104.
10. Baltacı, A. Nitel Araştırma Süreci: Nitel Bir Araştırma Nasıl Yapılır? *AEÜSBED*. 2019;5:368-388. https://doi.org/10.31592/aeusbed.598299
11. Colaizzi PF. Psychological research as a phenomenologist views it. In: Valle RS and King M eds. Existential-Phenomenological Alternatives for Psychology, Oxford University Press. New York; 1978:48-71.
12. Kocayanak D. Perceptions of international students of Nevsehir Hacı Bektas Veli University towards Turkish culture, language and education system. *UTOAD.* 2024;4(1):107-131. https://doi.org/10.5281/zenodo.12097724
13. Mattila LR, Pitkäjärvi M, Eriksson E. International student nurses' experiences of clinical practice in the Finnish health care system. *Nurse Educ Pract.* 2010;10:153–157. https://doi.org/10.1016/j.nepr.2009.05.009
14. Eden A, Fleet JA, Cominos N. The learning experiences of international students in nursing and midwifery programs: A literature review. *Nurse Educ Pract.* 2021;52:103027. https://doi.org/10.1016/j.nepr.2021.103027
15. Levent E, Oksuz Gul F, Aydemir T. The university experiences of Syrian students in Turkey. *Journal of Milli Eğitim*. 2021;50(1):807-835. https://doi.org/10.37669/milliegitim.873198
16. Pross E. International nursing students: a phenomenological perspective. *Nurse Educ Today.* 2003;23,396-394. https://doi.org/10.1016/S0260-6917(03)00066-2

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The Effect of Training According to Students' Learning Styles on Their Ability to Make Nursing Diagnoses: A Quasi-Experimental Study

Öğrenme Stillerine Yönelik Verilen Eğitimlerin Öğrencilerin Hemşirelik Tanısı Belirleyebilme Becerilerine Etkisi: Bir Yarı Deneysel Çalışma

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ABSTRACT

Objective: This study was conducted to evaluate the effect of training according to students' learning styles on their ability to make nursing diagnoses.

Methods: The study was conducted as a one-group quasi-experimental study with pre and post-test design between April and September 2022. The research was carried out with 63 second-year students studying in the nursing department of a public university. The participants' learning styles were identified using the VARK Learning Styles Inventory. The Case Diagnosis Form (pre-test) was applied to the participants and they were asked to determine the nursing diagnoses related to the case example. They were divided into groups according to their learning styles. They were trained on the nursing diagnoses and diagnosing process according to their learning styles. Three weeks after the training, the Case Diagnosis Form was applied to them again (post-test).

Results: It was found that 71.4% of students had multiple learning styles, 74.6% had problems applying the nursing process, and 73% had problems determining nursing diagnoses. It was determined that the post-test mean scores of the participants increased significantly after the trainings compared to the pre-test mean scores ($P<.001$). There was no difference between pre and post-test mean scores according to the descriptive characteristics of the participants ($P>.05$).

Conclusion: The training students according to their learning styles improved their ability to make nursing diagnoses. Taking into account the learning styles of students and using different teaching strategies in their education in line with this can help improve students' ability to make nursing diagnoses.

Keywords: Nursing diagnosis, nursing education, nursing students, learning style

ÖZ

Amaç: Bu çalışma, öğrenme stillerine yönelik verilen eğitimlerin öğrencilerin hemşirelik tanısı belirleyebilme becerilerine etkisini değerlendirmek amacıyla yapıldı.

Yöntemler: Araştırma, Nisan- Eylül 2022 tarihleri arasında, ön test-son test desenli tek gruplu yarı deneysel çalışma olarak yürütüldü. Araştırma bir kamu üniversitesinin hemşirelik bölümünde ikinci sınıfta öğrenim gören 63 öğrenci ile gerçekleştirildi. Katılımcıların öğrenme stilleri VARK Öğrenme Stilleri Envanteri kullanılarak belirlendi. Vaka Tanılama Formu (ön test) katılımcılara uygulanarak, vaka örneğine ilişkin hemşirelik tanılarını belirlemeleri istendi. Öğrenciler öğrenme stillerine göre gruplara ayrıldı. Katılımcılara öğrenme stillerine göre hemşirelik tanıları ve tanılama süreci hakkında eğitimler verildi. Eğitimlerden üç hafta sonra Vaka Tanılama Formu (son test) tekrar uygulandı.

Bulgular: Öğrencilerin %71,4'ünün çoklu öğrenme stiline sahip olduğu, %74,6'sının hemşirelik sürecinin kullanımında ve %73'ünün hemşirelik tanılarını belirlemede sorun yaşadığı belirlendi. Katılımcıların eğitimler sonrasında son test puan ortalamalarının ön test puan ortalamalarına göre anlamlı düzeyde arttığı belirlendi ($P<,001$). Katılımcıların tanıtıcı özelliklerine göre ön test ve son test puan ortalamaları arasında fark olmadığı saptandı ($P>,05$).

Sonuç: Öğrenme stiline yönelik verilen eğitimlerin, öğrencilerin hemşirelik tanısı belirleme becerisini geliştirdiği saptandı. Hemşirelik öğrencilerinin öğrenme stillerinin dikkate alınması ve bu doğrultuda eğitimlerinde farklı öğretim stratejilerinin kullanılması, öğrencilerin hemşirelik tanısı belirleyebilme becerilerinin geliştirilmesine yardımcı olabilir.

Anahtar Kelimeler: Hemşirelik eğitimi, hemşirelik öğrencileri, hemşirelik tanıları, öğrenme stili

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INTRODUCTION

Learning is an individual process due to differences in individual factors, perceptions, learning levels and learning styles. These differences result in each individual using different learning levels in the learning process.[1, 2] Learning styles are among the factors that make learning easier or more difficult, that support or hinder learning.[2] In this context, determining students' learning styles guides the selection of strategies that facilitate the educational process and maximize learning potential.[3]

In fact, students with different learning styles use different ways of learning. Those with a visual learning style prefer looking at and drawing pictures, diagrams, etc., while aural learners prefer listening to information, lectures and group discussions and speaking. While learners with a read/write learning style prefer reading and taking notes, kinaesthetic learners prefer learning by experiencing and doing, simulations and practices.[4, 5]

Nursing education should take into account the differences between students' learning styles should be taken into consideration and the teaching should be carried out in accordance with the learning style of each student. In a study conducted by Muliira et al.[6], 73.2% of nursing students stated that ineffective teaching styles and methods were used in nursing education.[6] Education based on students' learning styles can help to train professional nurses by supporting students in the subjects they have difficulty in and facilitating their learning processes.[1, 7] For this reason, it is crucial to use different teaching methods according to students' learning styles rather than using traditional teaching strategies and lecturing in nursing education.

The literature indicates that nursing students perceive themselves as insufficient in identifying nursing diagnoses and encounter significant challenges in this area.[8, 9] Diagnosis constitutes an important stage of the nursing process. At this stage, critical thinking skills should be used to evaluate patients' conditions, interpret their data, and identify their problems.[10] For this, it is necessary to develop critical thinking skills in addition to nursing knowledge in order for students to gain skills related to nursing diagnoses. The literature emphasizes that in order to enhance students' critical thinking, instructional tactics must be tailored to each student's preferred learning style.[11] In addition, it is suggested that educators should use different teaching strategies during trainings on nursing diagnosis in order to improve students' diagnostic skills.[12] With this study, it was aimed to obtain data on the effect of training on learning styles on students' ability to determine nursing diagnosis. It is thought that the data obtained will contribute to the literature since no study on this subject has been encountered in the national and international literature.

AIM

This study aimed to evaluate the effect of training according to learning styles on students' ability to make nursing diagnoses.

The following hypotheses were tested in the study;
H_0: Training on learning styles has no effect on students' ability to determine nursing diagnosis.
H_1: Training on learning styles increases students' ability to determine nursing diagnosis.

METHODS

Study Design

This study was conducted between April and September 2022 as a quasi-experimental study with one-group pre and post-test design. The research report was presented according to the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) Statement Checklist.

Participants

The population of the study consisted of 86 second-year nursing students in the faculty of health sciences of a state university. The inclusion criteria were defined as enrollment as a second-year student in the nursing department and voluntary agreement to participate in the study. The exclusion criteria were defined as first, third, and fourth-year students in the nursing department who had not participated in the training and had not completed the post-test. Since first-year nursing students had little knowledge about the nursing process and diagnoses, and third and fourth-year nursing students had more experience in the nursing process and care plans, our study included only second-year students in order to prevent data bias. No sample size calculation was used in the study and 75 students who volunteered to participate were included. The study was completed with 63 students, of which seven students did not participate in the training and five students did not complete the post-test (Figure 1).

Data Collection

The data of this study were collected face-to-face using the Personal Data Form, Case Diagnosis Form, and VARK Learning Styles Inventory. We asked them to make nursing diagnoses for the case example in the Case Diagnosis Form. In addition, we used the VARK Learning Styles Inventory to identify their learning styles. Data were analyzed according to the VARK Learning Styles Inventory and determined their

learning styles. Then, the students were divided with a unimodal learning style into four groups (Visual, Aural, Read-write, and Kinesthetic) according to their learning styles. We asked students with multimodal (bimodal, trimodal, and quadmodal) learning styles which group they preferred to be in and assigned them to the relevant group. As a result, there were 11 students in the visual learning group, 10 in the aural learning group, four in the read-write group and 43 in the kinesthetic learning group (Figure 1). We determined teaching methods for the "Nursing Diagnosis" stage considering their learning styles. The presentation prepared in line with the literature was used in the training of each group by researchers.[10,13-15] Nursing diagnoses and the diagnosing process were explained to all students by using presentation. A training booklet on the nursing diagnosis process and NANDA-I diagnoses was prepared for the participants in the read-write group in line with the literature.[10,13-15] In addition, a case example was prepared based on the literature to create concept maps for the visual learning group, case discussion for the aural learning group and simulated mannequin application for the kinesthetic learning group.[10,13] The case example used in the training was prepared with different characteristics than the example in the Case Diagnosis Form in order not to influence the participants and to avoid bias. After preparing appropriate training materials, each group was trained separately according to their learning styles in the classroom and laboratory by the first researcher (Table 1). Due to the large number, the kinesthetic group was divided into four small groups and training was given to each group separately.

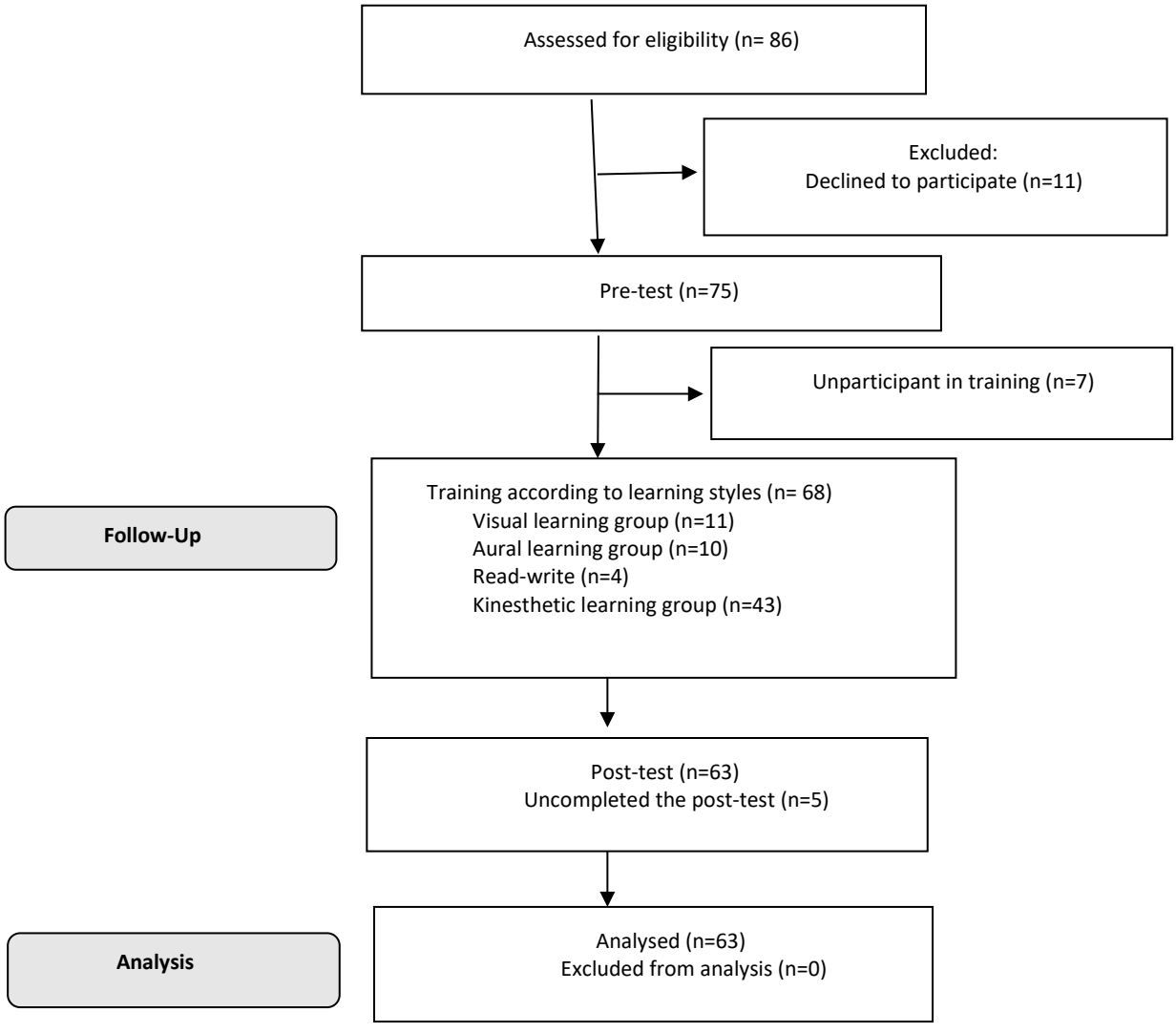


Figure 1. Flow Diagram for Study

Table 1. Training According to Learning Styles

Learning Styles	Teaching Method	Training
V	**Training presentation Concept maps**	Nursing diagnoses and diagnosing process were explained to the students using a training presentation. Then, the diagnosing process was explained using concept maps with a case example.
A	**Training presentation Case discussion**	Nursing diagnoses and diagnosing process were explained using a training presentation. Then, a case was discussed in the classroom using a sample case.
R	**Training presentation Training booklet**	Nursing diagnoses and diagnosing process were explained using a training presentation. Then, students were given a training booklet prepared about the nursing diagnosis process and NANDA-I diagnoses.
K	**Training presentation Manikin-based simulation application**	Nursing diagnoses and diagnosing process were explained using a training presentation. Then, high- fidelity manikin-based simulation was performed in the laboratory. All parameters of the mannequin were adjusted by the researcher via an external tablet according to the characteristics of the case. The manikin was simulated according to a case example (in terms of visual symptoms, laboratory data, other symptoms, and findings). The data of the simulated manikin were evaluated, and nursing diagnoses were discussed with the students. The laboratory environment is designed like a real hospital environment and includes equipment such as patient bed, fixed oxygen unit, defibrillator, emergency trolley, etc.

V: Visual; A: Aural; R: Read-write; K: Kinesthetic

The training duration varied according to the groups and ranged between 75-180 minutes. Three weeks after the training, we reapplied the Case Diagnosis Form to the students (post-test).

Data Collection Tools

Personal Data Form: This form was prepared by the researchers in line with the literature.[9, 16] It consisted of nine questions regarding the sociodemographic characteristics of students (gender and age etc.) and their views on nursing diagnoses (the state of having difficulty using the nursing process, problematic area/s in using the nursing process etc.).

***Case Diagnosis Form*:** This form prepared by researchers using literature.[13, 15] The case example in this form contains information (laboratory findings, vital signs, medical history and assessment information in accordance with Gordon's Functional Health Patterns Model) from a 54-year-old patient with liver cirrhosis who was admitted to the emergency department due to haematemesis and subsequently admitted to the general intensive care unit. The data of the case was presented in line with Gordon's Functional Health Patterns Model. NANDA-I nursing diagnoses were made by the researchers for the case example. Expert opinion was received from two academic nurses to ensure the accuracy and appropriateness of the diagnoses. The Case Diagnosis Form was revised in line with the expert opinion and 23 nursing diagnoses were made for the case.[13] Participants were asked to make these diagnoses in the pre and post-test and write their nursing diagnoses for the case on the forms. To make sure that students wrote the diagnoses critically, they were asked to write their nursing diagnoses together with the risk factors/descriptive features. When each form was analyzed, diagnoses written without specifying risk factors/descriptive features were excluded and not included among the diagnoses determined by the students.

VARK Learning Styles Inventory: The inventory was developed by Fleming and Mills in 1992.[17] Its Turkish validity and reliability were performed by Düzgün[18]. The inventory contains 16 questions and has no sub-dimensions. Each question creates a different scenario and asks the respondent his/her preference in that situation. The answers to the questions are scored according to their Visual (V), Aural (A), Read-write (R), and Kinesthetic (K) status. The total score is obtained by summing these four components. In the visual learning style, information is usually presented through visuals, pictures or diagrams. In the aural learning style, information is acquired mainly through listening, for example by listening to lectures or participating in group discussions. The read-write learning style is a learning style in which information is usually presented in the form of written language or texts, which can be through textbooks, notes or presentations. In the kinesthetic learning style, learning takes place through activities and practices. This style includes methods such as

practical applications, scenarios or simulations. The highest score signifies a strong preference for the corresponding learning style. However, individuals may have more than one learning style. In this respect, students may have a unimodal, bimodal, or multimodal learning style.[18] The Cronbach's Alpha reliability coefficient of the inventory was 0.76 in the Turkish validity and reliability study by Düzgün[18]. However, in our study, the coefficient was found to be 0.55.

Statistical Analysis

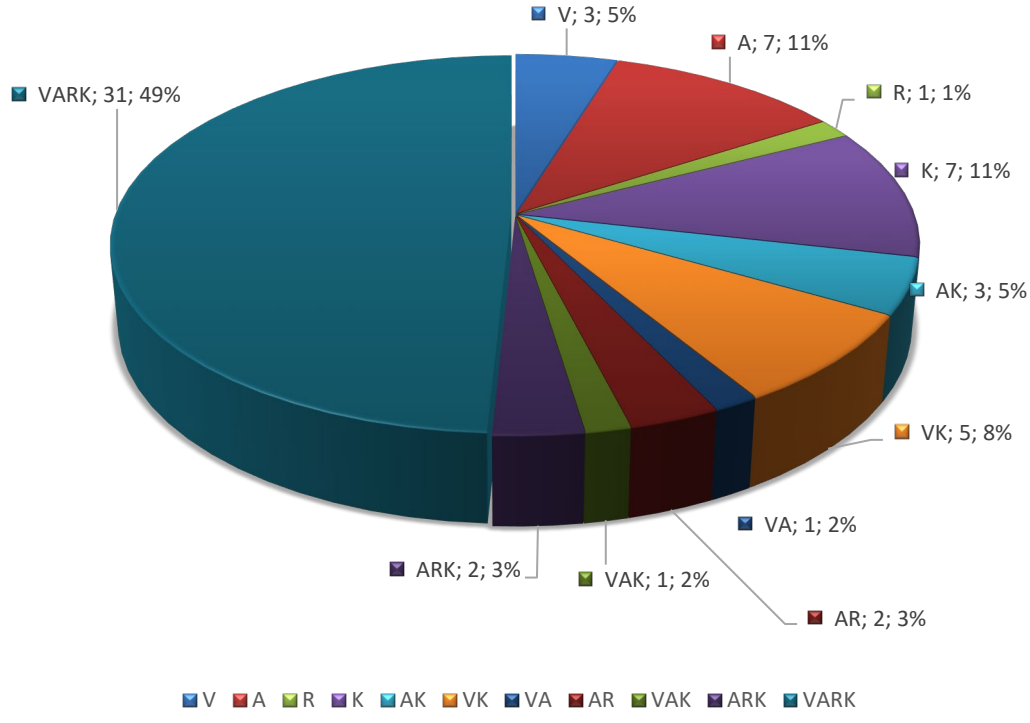
Data were analyzed using the Statistical Package for Social Sciences (SPSS) Version 25. Shapiro-Wilk test was used to determine the suitability for normal distribution. Independent-Samples T Test was used to compare groups in analyzing the data with normal distribution. Analysis results are expressed as a mean, standard deviation, and a frequency (percentage). Significance level was taken as .05 in the study.

Ethical Considerations

Before starting the study, ethics committee approval was obtained from the Amasya University Non-Interventional Clinical Research Ethics Committee (Date: 10.03.2022, No: E-30640013-050.01.04-61748). In addition, a study permit was obtained to conduct the study at the relevant Amasya University (17.03.2022, No: E-47526769-044-62597). This study was conducted in accordance with the principles of the Helsinki Declaration. Participants were informed about the aims of the study. Informed consent was also obtained from each participant. There was no student/teacher relationship between the participants and the researchers during the research period in order to protect the participants' impartiality in giving voluntary consent.

RESULTS

We found that 28.6% of the participants had a unimodal learning style (V: 3, A: 7, R: 1, K: 7), and 71.4% had a multimodal learning style (AK: 3, VK: 5, VA: 1, AR: 2, VAK: 1, ARK: 2, VARK: 31). We also found that 38.9% of those with a unimodal learning style had aural and kinesthetic learning styles, and 68.8% of those with a multimodal learning style had the quad modal learning style (Figure 2).



V; Visual, A; Aural, R; Read-write, K; Kinesthetic, AK; Aural, Kinesthetic, VK; Visual, Kinesthetic, VA; Visual, Aural, AR; Aural, Read-write, VAK; Visual, Aural, Kinesthetic, ARK; Aural, Read-write, Kinesthetic, VARK; Visual, Aural, Read-write, Kinesthetic

Figure 2. Distribution of Students According to Learning

Table 2 illustrates the sample characteristics. In our study, the mean age was 20.54± 0.99 years. Of the participants, 71.4% were female. 95.2% were satisfied to study in the department of nursing. 74.6% had difficulty in using the nursing process; 39.1% of those experienced difficulty at the "diagnosing" stage, and 100% of participants considered NANDA-I nursing diagnoses necessary. We found that 73.0% of the participants had difficulty in making nursing diagnoses; 49.2% of those experienced difficulty in "naming nursing diagnoses" and 29.9% stated that the ability to make nursing diagnoses could be developed by "making observations at the bedside during clinical practice".

Table 2. Sample Characteristics (n= 63)

Characteristics	n (%)
Sex	
Female	45 (71.4)
Male	18 (28.6)
Satisfaction to study in the department of nursing	
Yes	60 (95.2)
No	3 (4.8)
Has difficulty in using the nursing process	
Yes	47 (74.6)
No	16 (25.4)
Problematic area/s in using the nursing process*	
Data collection	14 (16.1)
Diagnosing	34 (39.1)
Planning	17 (19.5)
Implementation	9 (10.3)
Assessment	13 (14.9)
Considers NANDA-I nursing diagnoses necessary	
Yes	63 (100.0)
No	0 (0.0)
Has difficulty in making nursing diagnoses	
Yes	46 (73.0)
No	17 (27.0)
Problematic area/s in making nursing diagnoses*	
Analysing and interpreting the collected data	21 (33.3)
Grouping the data	11 (17.5)
Naming the nursing diagnosis	31 (49.2)
Methods to develop the skill of making nursing diagnoses*	
Participating in theoretical courses	25 (12.7)
Watching videos about the nursing process	26 (13.2)
Studying the books related to nursing	15 (7.6)
Making observations at the bedside during clinical practice	59 (29.9)
Using computer-aided simulations	28 (14.2)
Doing case studies in the classroom	44 (22.3)

*The respondent can give multiple answers.

Table 3 demonstrates the distribution of participants' pre and post-test answers regarding the nursing diagnoses they were expected to make in the case example. The top five most common diagnoses made in the pre-test were: Acute Pain (69.8%), Risk for Infection (65.1%), Disturbed Sleep Pattern (54.0%), Imbalanced Nutrition: Less Than Body Requirements (49.2%), Risk for Adult Falls (23.8%), and Risk for Bleeding (23.8%). None of the participants made the following diagnoses: Risk for Injury, Ineffective Health Self-Management, Acute Confusion, Risk for Situational Low Self-Esteem, Noncompliance, and Nausea (Table 3). When we evaluated the participants' mean scores from the pre-test (4.11±2.15) and post-test (12.37±3.63) according to time, we found that the post-training scores were statistically significant compared to the pre-training scores (t=-17.906, *P*<.001).

It was found that there was no difference between the pre and post-test mean scores of the participants according to their gender, satisfaction to study in the department of nursing, having difficulty in using the nursing process and having difficulty in making nursing diagnoses (*P*>.05) (Table 4).

DISCUSSION

Determining the learning styles of students and taking these styles into consideration is highly important in order to create an effective learning environment.[3] Our study found that the majority of the students had multimodal learning styles and that the least preferred learning style was read-write while the most preferred one was kinesthetic. Other studies conducted with nursing students reported that the majority of participants were multimodal learners, and the predominant learning style was kinesthetic.[19, 20] Students' learning styles are a key factor that plays a major role in the problem-solving and learning processes.[11] Teaching methods used by structuring students' preferred learning styles can make the learning process more effective, contribute to students' positive attitudes towards learning and increase their motivation and academic performance.[1,4] In this regard, it is recommended to take into account that students have different learning styles in nursing education and revise an education plan accordingly.

In our study, we found that students had the most difficulty in using the nursing process at the "diagnosing" stage. However, all students considered nursing diagnoses necessary. 73% of students had difficulty in making nursing diagnoses, and 49.2% of those experienced difficulty at the

Table 3. Nursing Diagnoses Made by Students in the Pre and Post-Test

Nursing Diagnoses		Pre-test n (%)	Post-test n (%)
Risk for adult falls	No	48 (76.2)	21 (33.3)
	Yes	15 (23.8)	42 (66.7)
Risk for injury	No	63 (100)	40 (63.5)
	Yes	0 (0.0)	23 (36.5)
Risk for infection	No	22 (34.9)	4 (6.3)
	Yes	41 (65.1)	59 (93.7)
Imbalanced nutrition: less than body requirements	No	32 (50.8)	23 (36.5)
	Yes	31 (49.2)	40 (63.5)
Excess fluid volume	No	53 (84.1)	30 (47.6)
	Yes	10 (15.9)	33 (52.4)
Risk for impaired skin integrity	No	51 (81.0)	17 (27.0)
	Yes	12 (19.0)	46 (73.0)
Ineffective breathing pattern	No	50 (79.4)	19 (30.2)
	Yes	13 (20.6)	44 (69.8)
Risk for electrolyte imbalance	No	52 (82.5)	49 (77.8)
	Yes	11 (17.5)	14 (22.2)
Disturbed sleep pattern	No	29 (46.0)	8 (12.7)
	Yes	34 (54.0)	55 (87.3)
Deficient knowledge	No	60 (95.2)	21 (33.3)
	Yes	3 (4.8)	42 (66.7)
Self-neglect	No	60 (95.2)	42 (66.7)
	Yes	3 (4.8)	21 (33.3)
Impaired physical mobility	No	54 (85.7)	23 (36.5)
	Yes	9 (14.3)	40 (63.5)
Ineffective health self-management	No	63 (100)	35 (55.6)
	Yes	0 (0.0)	28 (44.4)
Acute pain	No	19 (30.2)	10 (15.9)
	Yes	44 (69.8)	53 (84.1)
Acute confusion	No	63 (100)	39 (61.9)
	Yes	0 (0.0)	24 (38.1)
Decreased cardiac output	No	61 (96.8)	45 (71.4)
	Yes	2 (3.2)	18 (28.6)
Risk for impaired oral mucous membrane integrity	No	60 (95.2)	39 (61.9)
	Yes	3 (4.8)	24 (38.1)
Risk for situational low self-esteem	No	63 (100)	38 (60.3)
	Yes	0 (0.0)	25 (39.7)
Noncompliance	No	63 (100)	43 (68.3)
	Yes	0 (0.0)	20 (31.7)
Impaired comfort (physical)	No	62 (98.4)	37 (58.7)
	Yes	1 (1.6)	26 (41.3)
Risk for bleeding	No	48 (76.2)	28 (44.4)
	Yes	15 (23.8)	35 (55.6)
Nausea	No	63 (100)	33 (52.4)
	Yes	0 (0.0)	30 (47.6)
Fatigue	No	51 (81.0)	26 (41.3)
	Yes	12 (19.0)	37 (58.7)

Table 4. Mean Scores from the Pre and Post-Test According to Students' Characteristics

Characteristics		Pre-test (Mean±SD)	Post-test (Mean±SD)
Sex	Female	4.38±1.84	12.31±3.40
	Male	3.44±2.73	12.50±4.26
Test value and P		t=1.336 *P*=.194	t=-.185 *P*=.854
Satisfaction to study in the department of nursing	Yes	4.13±2.17	12.35±3.64
	No	3.67±2.08	12.67±4.16
Test value and P		t=.365 *P*=.717	t=-.146 *P*=.884
Has difficulty in using the nursing process	Yes	4.11±2.03	12.66±3.45
	No	4.13±2.53	11.50±4.12
Test value and P		t=-.030 *P*=.976	t=1.104 *P*=.274
Has difficulty in making nursing diagnoses	Yes	3.89±1.95	12.50±3.40
	No	4.71±2.59	12.00±4.30
Test value and P		t=-1.179 *P*=.251	t=.482 *P*=.632

SD: Standard Deviation, t: Independent-Samples T Test.

"naming nursing diagnoses" stage. In the study of Yıldırım Keskin et al.[21], it was reported that the rate of nursing students' ability to correctly determine nursing diagnoses was at a moderate level. Another study conducted with nursing students reported that participants were insufficient in terms of the distinction between nursing diagnosis and medical diagnosis and had difficulty in making NANDA-I nursing diagnoses.[22] In this context, it is recommended in the literature to use effective teaching methods in teaching nursing diagnoses in fundamental nursing education and to give more importance to nursing diagnoses.[16]

In the pre-test of our study, students often made nursing diagnoses in domains such as Nutrition, Activity/Rest, Safety/Protection, and Comfort. However, they did not make any nursing diagnoses in domains such as Health Promotion, Perception/Cognition, and Self-Perception. This finding suggests that students focused more on the physiological specialties while making their diagnoses and could not analyse the patient data in a way to provide holistic nursing care. Other studies on this subject reported that students made diagnoses in domains similar to our findings.[21, 23] The study by Sousa Freire et al.[24] also found that students made more misdiagnoses in scenarios belonging to Health Promotion and Self-Perception domains. In the post-test of our study, students were able to make diagnoses in Health Promotion, Perception/Cognition, and Self-Perception domains for the same case example. This suggests that training according to learning styles had a positive effect on students' ability to evaluate and interpret data from a holistic perspective.

Nursing students have difficulty in the nursing process and determining nursing diagnoses correctly.[16, 25] Therefore, it is important for academicians to identify strategies to improve students' diagnostic skills in nursing education. Our study examined the effect of education according to learning styles on nursing students' diagnosing skills, and found that, after participants received training according to learning styles, their mean post-test scores were significantly higher than their mean pre-test scores. Our finding suggests that training according to learning styles is effective in improving the diagnosing skills of nursing students. There is no similar study finding in the literature that we can compare our study finding with. However, students' active learning methods affect their processes of receiving, processing, analyzing and structuring information and support their critical thinking skills.[2] In this context, it is thought that the problems experienced by students in analysing and grouping data and making accurate nursing diagnoses may be due to a nursing education that does not fit their learning styles. It can be said that students' diagnosis skills were supported with learning styles.

Limitations of Study

In our study, the sample size was limited because only second-year students were included. Due to the small

sample size and the uneven number of participants in the groups according to learning styles, our findings cannot be generalized to nursing students. Additionally, since there was no control group in the study, the pre-test and post-test comparison was made on a single group, which is a limitation of the study. And the case example contained a lot of data and participants were expected to make a large number of nursing diagnoses (23 diagnoses) for the case. In line with findings, students with multiple learning styles were included in a single education group and did not receive training for their other learning styles. Another limitation of this study is that students were not included in training for other learning styles. Expert opinions were received for the Case Diagnosis Form, but no validity and reliability studies were conducted. The fact that the students' learning styles were determined using a single measurement tool may have affected the accurate determination of learning styles. And external variables that might influence students outside of training (extracurricular individual study, clinical practice, motivation to learn, individual factors, etc.) were not taken under control may have affected the study results.

According to the findings, most of the nursing students had multimodal learning styles, and that the most preferred learning style was kinesthetic. In addition, we found that students had difficulties at the diagnosing stage and that training according to learning styles improved students' diagnostic skills. We think that taking learning styles into account is essential in solving the problems experienced by students in making accurate nursing diagnoses. In this direction, it may have a positive effect if academicians support the nursing process, especially the diagnosing stage, with various teaching methods and education according to students' learning styles.

Etik Komite Onayı: Etik kurul izni, Amasya Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulundan alınmıştır (10 Mart 2022; No: E-30640013-050.01.04-61748).
Hasta Onamı: Çalışmaya katılan hemşirelik öğrencilerinden sözlü ve yazılı bilgilendirilmiş onam alınmıştır.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Fikir- AK, HK, SKK; Tasarım- AK, HK, SKK; Denetleme- AK; Kaynaklar- AK; Veri Toplanması ve/veya İşlemesi- AK; Analiz ve/ veya Yorum- AK, HK, SKK; Literatür Taraması- AK, HK, SKK; Yazıyı Yazan- AK, HK, SKK; Eleştirel İnceleme- AK, HK, SKK.
Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.
Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.
Teşekkür: Katılımcı hemşirelik öğrencilerine ve bu çalışmaya uzman görüşleri ile destek veren Dr. Leyla Baran ve Dr. Amine Terzi'ye teşekkürlerimizi sunarız.

Ethics Committee Approval: Ethical committee approval was received from the Amasya University Non-Interventional Clinical Research Ethics Committee (March 10, 2022, No: E-30640013-050.01.04-61748).
Informed Consent: Oral and written informed consent was obtained from the nursing students participating in the study.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept -AK, HK, SKK; Design- AK, HK, SKK; Supervision- AK; Resources- AK; Data Collection and/or Processing- AK; Analysis and/or Interpretation- AK, HK, SKK; Literature Search- AK, HK, SKK; Writing Manuscript- AK, HK, SKK; Critical Review- AK, HK, SKK.
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REFERENCES

1. Evrenol Öçal S, Çetin Avcı, S, Işık G, Yeşilçınar İ, Can SZ, Egelioğlu Cetişli N. Nursing students' learning styles and attitudes towards learning: A cross-sectional study. *Yükseköğretim Dergisi.* 2023;13(2):227-236. https://doi.org/10.53478/yuksekogretim.1252746
2. Aydin AG, Ince S. The effect of Jigsaw technique on nursing students' psychomotor skill levels and academic achievement: A quasi-experimental study. *Nurse Educ Pract*. 2023;73:103821. https://doi.org/10.1016/j.nepr.2023.103821
3. Campos DG, Silva JLG, Jarvill M, Rodrigues RCM, de Souza Oliveira Kumakura AR, Campos DG. Instruments to evaluate undergraduate healthcare student learning styles globally: A scoping review. *Nurse Educ Today*. 2021;107:105141. https://doi.org/10.1016/j.nedt.2021.105141
4. Ezzeddine N, Hughes J, Kaulback S, Houk S, Mikhael J, Vickery A. Implications of understanding the undergraduate nursing students' learning styles: A discussion paper. *J Prof Nurs*. 2023;49:95-101. https://doi.org/10.1016/j.profnurs.2023.09.006
5. Amaniyan S, Pouyesh V, Bashiri Y, Snelgrove S, Vaismoradi M. Comparison of the conceptual map and traditional lecture methods on students' learning based on the VARK Learning Style Model: A randomized controlled trial. *SAGE Open Nurs*. 2020;6:2377960820940550. https://doi.org/10.1177/2377960820940550
6. Muliira JK, Natarajan J, van der Colff J. Nursing faculty academic incivility: Perceptions of nursing students and faculty. *BMC Med Educ*. 2017;17(1):253. https://doi.org/10.1186/s12909-017-1096-8
7. Vizeshfar F, Torabizadeh C. The effect of teaching based on dominant learning style on nursing students' academic achievement. *Nurse Educ Pract*. 2018;28:103-108. https://doi.org/10.1016/j.nepr.2017.10.013
8. Kurtgöz A, Çayır Yılmaz M. Determination of nursing students' level of perception of nursing diagnoses and self-efficacy regarding their clinical performance. *Ordu Üniversitesi Hemşirelik Çalışmaları Dergisi*. 2023;6(3):739-748. https://doi.org/10.38108/ouhcd.1167475
9. Ozveren H, Ozden D, Gulnar E. (2019). Determination of nursing students' perception states in nursing diagnosis. *Int J Caring Sci*. 2019;12(2):1049-1055.

10. Berman A, Snyder S, Frandsen G. Diagnosing. In: Berman A, Snyder S, Frandsen G, eds. Kozier & Erb's Fundamentals of Nursing: Concepts, Process, and Practice. United Kingdom: Pearson Education; 2021:212-223.
11. Shirazi F, Heidari S. The relationship between critical thinking skills and learning styles and academic achievement of nursing students. *J Nurs Res*. 2019;27(4):e38. https://doi.org/10.1097/jnr.0000000000000307
12. Karaca T, Aslan S. Effect of 'nursing terminologies and classifications' course on nursing students' perception of nursing diagnosis. Nurse Educ Today. 2018;67:114-117. https://doi.org/10.1016/j.nedt.2018.05.011
13. Herdman TH, Kamitsuru S, Takáo Lopes C, eds. NANDA International Nursing Diagnoses Definitions and Classification 2021–2023. New York: Thieme Medical Publishers; 2021:24-136.
14. Carpenito LJ. Nursing Diagnosis Handbook (Erdemir F, Türk G, çeviri editörleri). İstanbul: Nobel Tıp Kitapevleri; 2022:933-938.
15. Yıldız FT, Yıldırım D. Nursing Process. Kaşıkçı MK, Akın E, editörler. Temel Hemşirelik Esaslar, Kavramlar, İlkeler, Uygulamalar. İstanbul: İstanbul Tıp Kitapevleri; 2021:72-80.
16. Sonmez M, Gurlek Kisacik O. Perceptions of Turkish nursing students on nursing diagnoses. *Clin Exp Health Sci*. 2022; 12: 885-891. https://doi.org/10.33808/clinexphealthsci.951967
17. Fleming ND, Mills C. Not another inventory, rather a catalyst for reflection. *To Improve the Academy*. 1992;11(1):137–155. https://doi.org/10.1002/j.2334-4822.1992.tb00213.x
18. Düzgün S. Verification of VARK learning styles inventory translated into Turkish with verified factor analysis models: classroom teacher's example. *Journal of Turkish Studies*. 2018;13(11):1619–1634. http://dx.doi.org/10.7827/TurkishStudies.13442
19. Zhu H, Zeng H, Zhang H, et al. The preferred learning styles utilizing VARK among nursing students with bachelor degrees and associate degrees in China. *Acta Paul Enferm*. 2018;31(2):162-169. https://doi.org/10.1590/1982-0194201800024
20. McKenna L, Copnell B, Butler AE, Lau R. Learning style preferences of Australian accelerated postgraduate pre-registration nursing students: A cross-sectional survey. *Nurse Educ Pract*. 2018;28:280-284. https://doi.org/10.1016/j.nepr.2017.10.011
21. Yıldırım Keskin A, Tunç Tuna P, Molu B, Tuna Hİ. The skills of nursing first year students to determine the nursing diagnosis related to the case and affecting factors. *Hastane Öncesi Dergisi*. 2021;6(1):69-82.
22. Abed El-Rahman M, Al Kalaldeh MT, Malak MZ. Perceptions and attitudes toward NANDA-I nursing diagnoses: A cross-sectional study of Jordanian nursing students. *Int J Nurs Knowl*. 2017;28(1):13-18. https://doi.org/10.1111/2047-3095.12100
23. Erden S, Deniz S, Arslan S, Yurtseven Ş. Examination of nursing diagnoses levels in surgical diseases nursing lesson practices of nursing students. *Van Med J*. 2018;25(2):108-112. https://doi.org/10.5505/vtd.2018.26213
24. Sousa Freire VEC, Lopes MVO, Keenan GM, Dunn Lopez K. Nursing students' diagnostic accuracy using a computer-based clinical scenario simulation. *Nurse Educ Today*. 2018; 71: 240-246. https://doi.org/10.1016/j.nedt.2018.10.001
25. Palloş A, Özdede EA, Öztürk T, Biçer AN. Examining nursing students' opinions on the nursing process and the difficulties they experience. *CURARE Journal of Nursing*. 2024;4:1-8. https://doi.org/10.26650/CURARE.2024.1365398

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Evaluation of School Health Nursing Practice in Acute Health Problems with the Omaha

Omaha Sistem Tabanlı Elektronik Sağlık Kaydı Programı ile Akut Sağlık Sorunlarında Okul Sağlığı Hemşireliği

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ABSTRACT

Objective: Healthcare professionals use the Omaha System to diagnose problems in healthy and sick people, identify interventions, and evaluate their outcomes. The main aim of this research was to evaluate the effectiveness of combining the Omaha System-Based Electronic Health Record Program and School Health Nursing Practices in managing acute health issues.

Methods: The data for this study was collected using a retrospective-descriptive approach, using the Nightingale Notes Champ Software and the health infirmary notebook.

Results: The mean age of the participants was 10.30 ± 1.57, with 56.1% being female students. A total of 17 problems were identified and diagnosed 1230 times among the students who visited the health infirmary during the study period. The issues were in the "Physiological" domain 88.9%, Psychosocial" 7%, and "Health Behaviors" 4.1%. The most commonly identified health issues were related to "Skin" 24.2%, "Pain" 20.7%, "Digestive-Hydration" 10.7%, "Circulation" 8.1%, "Oral Health" 7.0%, "Neuromuscular Function" 6.1%, "Mental Health" 5.1%. The Intervention Scheme for the seven most frequent health problems included 17 targets and 1007 nursing interventions, with the Surveillance category being the most commonly used intervention.

Conclusion: The Omaha system has significantly contributed to decision-making based on retrospective data by making intervention processes more systematic in acute health practice in the school environment. As an evidence-based method, the Omaha system supports improving quality and professionalism in school nursing.

Keywords: Omaha system, School health nursing, Retrospective study, Student, Electronic health records

ÖZ

Amaç: Omaha Sistemi, sağlık profesyonelleri tarafından sağlıklı ve hasta bireylerin sorunlarını teşhis etmek, müdahaleleri belirlemek ve sonuçlarını değerlendirmek için kullanılır. Bu araştırmanın amacı, Omaha Sistemine Dayalı Elektronik Sağlık Kaydı Programının akut sağlık sorunlarıyla başa çıkmada okul sağlığı hemşireliği uygulamaları ile birlikte etkinliğini değerlendirmektir.

Yöntemler: Çalışma retrospektif-tanımlayıcı tasarım tipindedir. Veriler Nightingale Notes Champ Yazılımı ve sağlık revir defteri aracılığıyla toplanmıştır.

Bulgular: Katılımcıların yaş ortalaması 10,30 ± 1,57 olup, %56,1'i kız öğrencilerden oluşmaktadır. Çalışma süresi boyunca sağlık revirini ziyaret eden öğrenciler arasında 17 problem, toplam 1230 kez tanılanmıştır. Saptanan problemlerin %88,9'u Fizyolojik, %7'si Psikososyal ve %4,1'i Sağlık Davranışları alanındadır. En sık tespit edilen sağlık sorunları sırayla; Deri %24,2, Ağrı %20,7, Sindirim-Hidrasyon %10,7, Dolaşım %8,1, Ağız Sağlığı %7,0, Nöromüsküler Fonksiyon %6,1, Ruh Sağlığı %5,1 ile ilgiliydi. En sık görülen yedi sağlık sorunu için Müdahale Şemasında 17 hedef ve 1007 hemşirelik müdahalesi uygulandı. Sürveyans en yaygın kullanılan girişim şeması kategorisi olarak bulundu.

Sonuç: Omaha sisteminin kullanılması, okul ortamında akut sağlık uygulamalarında müdahale süreçlerini daha sistematik hale getirerek, geçmişe yönelik veriye dayalı karar verme süreçlerine önemli bir katkı sağlamıştır. Omaha Sistemi kanıta dayalı bir yöntem olarak okul hemşireliğinin kalitesinin ve profesyonelliğinin artmasını destekler.

Anahtar Kelimeler: Omaha sistemi, Okul sağlığı hemşireliği, Retrospektif çalışma, Öğrenci, Elektronik sağlık kayıtları

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INTRODUCTION

The American Academy of Pediatrics (AAP) defines the school nurse as a unique professional nursing area that ensures students' quality of life, academic success, and lifelong success[1.] World Health Organization (WHO) reported that schools are the most suitable environments for maintaining and promoting health. For a considerable time, the World Health Organization (WHO) has acknowledged the correlation between health and education, understanding the significant potential of schools in safeguarding student health and well-being.[2] With this in mind, school nurses play a critical role in achieving a healthy school community. Determining the health problems of the general health levels of the school community and protecting and improving health are the basis of school nursing studies.[3,4] In this context, to record and report applications. Its contribution to school health nursing is very important.

According to the Address Based Population Registration System (ADNKS) results in Turkey, 26.9% of the population comprises children aged between 0 and 17. In Turkey, community health centers carry out school health services. However, in Turkey with such a high young population, school health services remain below international standards compared to developed countries.[5] In Turkey, there is no nurse in every public school; school nurses are generally assigned by the state to boarding schools where children with special needs are educated. For this reason, school health services, which are extremely necessary and important, such as intervention in acute and emergency situations, health diagnosis, periodic examinations, health education, health promotion programs, environmental health practices, and case management, cannot be implemented. However, the Ministry of National Education has started school nursing studies by publishing the "School Nursing Regulation" as of 2022.[6] In this context, the results of school health research are gaining more importance in order to create guidelines for school nursing services.

Nursing classification systems such as the Omaha System are very important in increasing the studies on school health services.[7,8] The Omaha System has been used in clinical, home care, primary healthcare, elderly care, hospice, and workplaces. Studies have proven its validity, reliability, and usability in many countries and cultures.[9-11]

A limited number of studies were found on using the national and international Omaha System in school-based health practices.[7,12,13] The use of the Omaha system in school health nursing allows nurses to regularly assess the health status of students, detect health problems early, and provide effective interventions. The follow-up process in school nursing is critical in continuously monitoring the child's health status and development and identifying possible risks in advance. The Omaha system ensures that this process is carried out structured and systematically.

The Omaha System

The American Nurses Association (ANA) recognizes the "Omaha System" as one of the earliest and most sophisticated classification systems (Figure 1).[14,15]

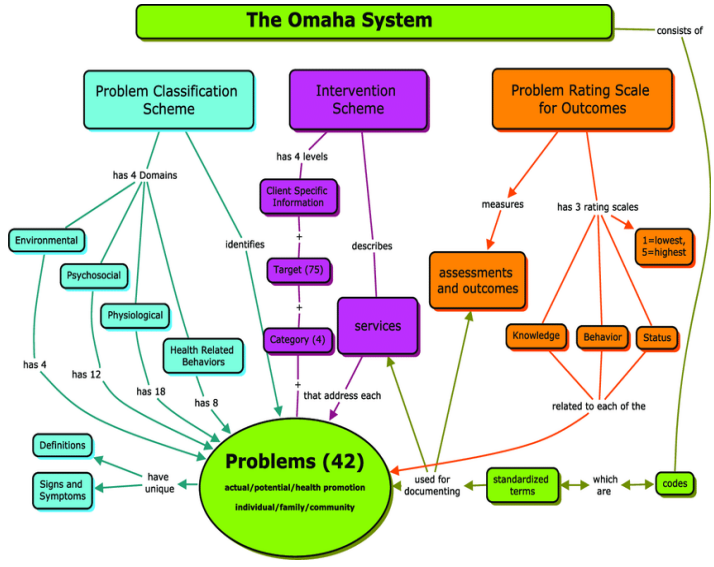

Figure 1. The Omaha System concept[14]

Nursing and other healthcare professionals utilize the "Omaha System" to diagnose problems in healthy and sick people, develop solutions, and assess their effectiveness. The system consists of three main components: (1) "Problem Classification Scheme," (2) "Intervention Scheme," and (3) "Problem Rating Scale." Problem Classification Scheme (PCS) is where nursing diagnoses are classified. It examines the individual's health problems in a total of four areas, including environmental (4), psychosocial (12), physiological (18), health behaviors (8), and 42 problems in these areas. There are clusters of signs and symptoms (335 signs and symptoms) under the problems. Scope determinants (individual, family, and society) and severity determinants (actual, potential, and health promotion) that determine the problem's nature are used to diagnose problems. The Intervention Scheme (IS) allows practitioners to classify, analyze, and record their activities and interventions, creating a bridge between the problem identified and the outcomes of care. The enterprise scheme consists of three successive phases: (1) enterprise categories, (2) targets, and (3) individual

enterprise/knowledge. The intervention scheme category classifies nursing interventions as Educational Guidance and Counselling, Treatment and Procedure, Case Management, and Surveillance. Nursing interventions planned in line with the intervention categories are explained using the "targets (76 targets)" list.[14-16] The Problem Rating Scale (PRS) is a measurement tool that assesses the problem's severity and care outcomes. The knowledge subscale aims to determine what the individual knows and how much he or she understands about the related problem. The behavior subscale aims to evaluate the individual's practices and skills. The status subscale focuses on determining the status or development of the individual.[14-16] The Problem Rating Scale is a five-item Likert-type scale. Each problem is evaluated with a score of 1 to 5, using the dimensions of 'Knowledge,' 'Behavior,' and 'Situation.' High scores in knowledge and behavior dimensions are directly proportional to positive knowledge and behavior. High scores in the situation dimension indicate fewer problem-specific signs and symptoms [10,14] The system has been actively used in student practices and research in Turkey since 1998.

AIM

The study's primary objective was to assess school health nursing practices concerning acute health issues, utilizing the Omaha System for evaluation.

Research Questions

1. What are the most common acute health problems observed in students using the Omaha System?
2. What are the school health nursing practices related to acute health problems using the Omaha System?

METHODS

Design and Sample

The study utilized a retrospective-descriptive study design for its conduction. The data of the research were collected within the scope of the Karabük University Faculty of Health Sciences Public Health Nursing course application. Within the scope of the application, students did a school health nursing internship within the scope of a public health nursing course in a primary school in Karabük. Due to the lack of school nurses at the school, a health unit was established and carried out school health nursing practices three days a week. Applications made in the health infirmary book were recorded. The data of the research were collected between February and May 2019. In this context, 314 children aged 7-11 applied to the health unit. The Omaha System was used during the diagnosis and applications.

Measures

Data for this study were gathered using the Health Infirmary Book and the Nightingale Notes software, which is built upon the Omaha System.

Health Infirmary Book: Date, name, surname, age, class, gender, the reason for application, interventions, and evaluation information are included in the health infirmary book.

Nightingale Notes Champ Software (NN): Nightingale Notes (Champ Software, Mankato, MN, USA) is a paid software system, recording, and reporting system based on Omaha System terminology to document nursing practice and make nursing practice visible. The system consists of two parts. In the first part, individuals' demographic and health information are recorded. The second part of the system consists of the Omaha System Problem Classification Scheme, Intervention Scheme, and Problem Rating Scale. Nightingale Notes Software allows data reports to be downloaded in Excel, PDF, or graphical formats, providing flexibility for different analysis and presentation needs. This feature enhances the efficiency and versatility of reporting processes. The Turkish validity and reliability of the Omaha System was investigated in 2006.[10, 17, 18]

The Omaha System's Problem Classification Scheme and Intervention Scheme components were used in the current study. The Problem Rating Scale could not be used because the students who applied to the health unit could not be followed up.

Ethical Consideration

The study obtained ethical approval from the non-interventional clinical research ethics committee at Karabük University (January 20, 2022 /803). Institutional permission was obtained from the schools where the study data was collected. Since this study was carried out within the scope of the Nursing Department of the Faculty of Health Sciences of Karabük University public health practice course, the institution's permission was obtained.

Data Collection and Analytic Strategy

The analyses of the study were conducted between February 2022 and June 2022. The demographic details of the cases, the reason for their application, diagnosis, and interventions were recorded in the Nightingale Notes using the Champ Software program. According to the Omaha System's codes and concepts, records were evaluated based on real risks and issues. The data obtained from the Nightingale Notes program in an Excel sheet were

transferred to the IBM SPSS 21.0 (IBM SPSS Corp., Armonk, NY, USA) statistical software, and the data were analyzed. Descriptive statistical methods (number, percentage) were used to analyze the data. Data were visualized using the 'Matrix visualization' graphics, as shown in Figure 3. As the number of interventions increases, the color shade darkens.

RESULTS

The participant's average age was 10.30 ± 1.57, 43.9% (n=138) were male students, and 56.1% (n=176) were female.

Children's Health Problems According to the Problem Classification Scheme

In the cases who applied to the health infirmary, a total of 17 problems were diagnosed 1230 times. According to the Omaha system, all issues were diagnosed individually and individually. 88.8% (n=1092) of the problems were Physiological, 7.0% (n=86) were Psychosocial, and 4.2% (n=52) were Health Behaviors domain.

Table 1. Health Problems and Symptoms According to Omaha System Problem Classification Scheme of Children (n=314)

Domain and Problems	Signs/Symptoms	n	%	Domain and Problems	Signs/Symptoms	n	%
Physiological				**Physiological**			
Skin	Wound- bruise	284	12.19	Respiratory	Abnormal breath sounds	21	0.90
	Inflammation	120	5.15		Abnormal breathing types	18	0.77
	Lesion	42	1.80		Runny nose/nasal congestion	47	2.02
	Itching	2	0.09		Cough	18	0.77
	Stream	4	0.17		Audible breathing	5	0.21
	Delay in incision wound healing	1	0.04	Urinary Function	Incontinence	11	0.47
	Discomfort / pain	253	10.86		Burning/pain when urinating	24	1.03
Pain	Avoiding the aching area / protective movement	185	7.94		Difficulty urinating	6	0.26
	Grimace	184	7.90		Urgency/frequent urination	18	0.77
	Restlessness	18	0.77	Bowel Function	Cramping/abdominal discomfort	46	1.97
	Pale appearance / sweating	32	1.37	Cognitive Status	Repetitive speech/behavior	3	0.13
Digestive - Hydration	Nausea and vomiting	131	5.62		Lack of concentration	2	0.09
	Reflux	35	1.50	**Psychosocial**			
	Loss of appetite	83	3.56	Mental Health	Difficulty in managing stress	36	1.55
	Electrolyte imbalance	40	1.72		Somatic complaints	9	0.39
	Chewing/ swallowing/ indigestion	8	0.34		Limited focus/attention	44	1.89
	Indigestion	31	1.33		Sadness / hopelessness / low self-esteem	23	0.99
Circulation	Oedema	60	2.58		Difficulty in anger management	10	0.43
	Fainting / dizziness	34	1.46		Restless/ agitated/ aggressive	8	0.34
	Abnormal blood pressure readings	11	0.47		Anxiety / undefined fears	3	0.13
	Temperature change in the affected area	21	0.90	Interpersonal Relations	Few shared activities	5	0.21
	Pain/cramp in extremities	3	0.13		Lack of interpersonal communication skills	8	0.34
Oral Health	Dental caries	82	3.52	Social Interaction	Limited social interaction	13	0.56
	Injured bleeding gums	71	3.05	**Health Behaviors**			
	Sensitivity to hot / cold	36	1.55	Nutrition	Malnutrition	12	0.52
Neuromuscular function	Difficulty walking/moving	18	0.77		Overweight	17	0.73
	Limitation in joint opening	71	3.05		Hyperglycemia	34	1.46
Visual	Strabismus / blink / watery eyes / blurred vision	12	0.52	Personal Care	Reluctance to do individual care activities	1	0.04
Hearing	Difficulty hearing normal speech tone	16	0.69				
				Total		2330	100

According to the Problem Classification Scheme, the most common problems were determined as “Skin” 24.2% (298), “Pain” 20.7% (254), “Digestive-Hydration” 10.7% (131), “Circulation” 8.1% (100), “Oral Health” 7.0% (86), “Neuromuscular Function” 6.1% (75) and “Mental Health” 5.1% (63). A total of 2330 signs and symptoms were defined for the 17 identified problems. The most common signs and symptoms among the issues were expressing wound-bruise 12.19% (284), discomfort/pain 10.86% (253), avoiding the aching area / protective movement 7.94% (185), grimacing 7.90% (184), nausea and vomiting 5.62% (131), inflammation 5.15% (120), loss of appetite 3.56% (83), dental caries 3.52% (82), and injured bleeding gums 3.05% (71) (Table 1). The symptoms associated with health problems are displayed in Table 1.

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Nursing Interventions for Children's Health Problems According to the Intervention Scheme

A total of 1230 nursing interventions were defined for 17 problems in the Omaha System. Among the 76 targets in the Omaha System Intervention Scheme, 25 targets were implemented for the issues. In addition, 17 targets were implemented for the seven most common problems, and 1007 nursing interventions were implemented for the targets. The most frequently utilized targets in the records were as follows: symptom findings/physical at 55.2% (n=556), wound care and dressing change at 18% (n=182), medical treatment/dental treatment at 9.13% (n=92), nursing care at 4.27% (n=43), and durable medicine means at 3.17% (n=32).

Interventions for the target were applied category of Surveillance (57.4%) 578 times, interventions in the Treatment and Procedure category (26.4%) 266 times, interventions in the Case Management category (9.9%) 100 times, and interventions in the category of teaching, guidance and counseling (6.3%) 63 times (Figure 2). Categories and frequently used interventions for children's problems are shown in Figure 3. As the frequency of the intervention increases, its color darkens (Figure 3). The interventions for the three most frequently addressed problems, as illustrated in Figure 3, are detailed in Table 2 in the appendix.

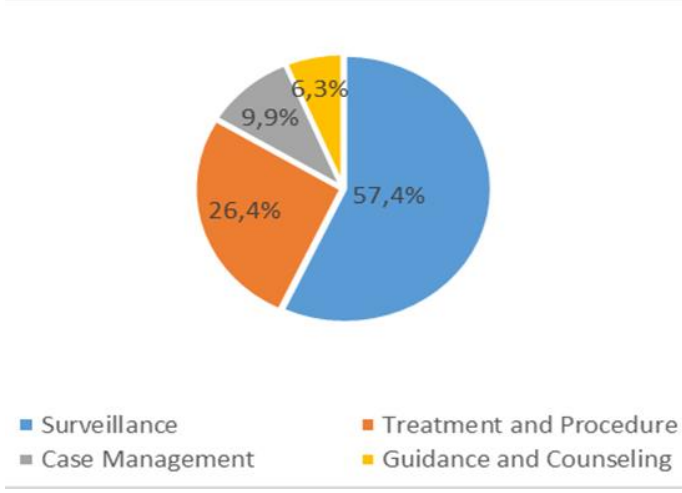
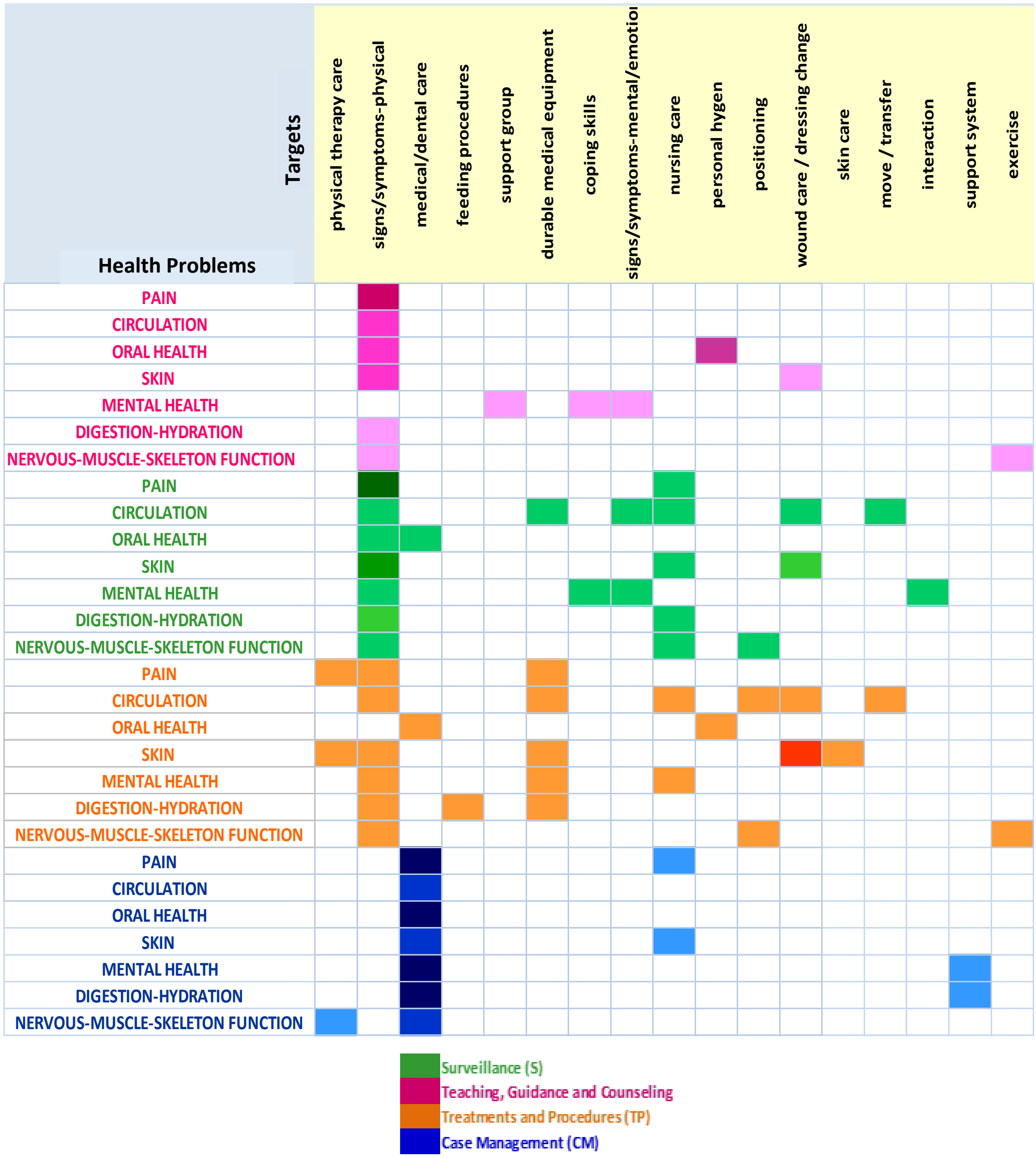


Figure 2. Interventions of Category

DISCUSSION

The American Academy of Pediatrics states that school nurses play an important role in developing children's optimum psychosocial health and well-being in the school environment.[1] Nurses need valid and reliable measurement tools in providing care services. The Omaha System improves the problem-solving process, critical thinking, and quality of care and facilitates nursing practice organization, enabling nurses to diagnose problems quickly.[14] Various studies have reported that the Omaha System is reliable and useful in health assessment.[7,8,19-21] For the children in this study, seventeen of the 42 problems in the Omaha System Problem Classification Scheme were diagnosed 1230 times. The problems were in the areas of physiological, psychosocial, and health behaviors. School nurses define the individual by their environment, but no record of any environmental area problems was found when the records were examined.



Note. Problems are shown on the y-axis, targets are shown on the x-axis. Shading indicates number of interventions (darker = more).

Figure 3. Intervention Categories and Targets According to Health Problems

The children's acute health problems were aligned with the categories and goals of the Omaha System. The most common acute problems in children were determined as “Pain, Skin, Digestion-Hydration, Circulation, Oral Health, Neuromuscular Function, Mental Health”. In Turkey, apart from this study, there is only one descriptive study in school health that used only the Problem Classification Scheme,[12], and one intervention study that utilized all components of the Omaha System.[7] In Gur et al.[12] study, the top three problems among school children were identified as "Skin, Pain, and Personal Hygiene," while in Ilgaz[7] research the most frequently identified problems in the physiological domain were "Oral Health, Neuro-Musculoskeletal, Nutrition," respectively. When compared with other research results using the Omaha System, it is seen that similar problems are experienced at school age.[7,12] In the study by Lee and Park[13], the health problems of students in the Omaha System were examined through interviews conducted with school nurses. Since the article was in Korean, it could not be fully compared with this study. In this study, although "superficial bleeding," one of the common reasons for students to visit the health unit, does not have a direct equivalent in the Omaha System, it has often been added to the symptom/signs section under "Skin" problems. Gur et al.[12] also reported experiencing similar challenges with "superficial bleeding" and "epistaxis"

Table 2. Additional Material for Figure 3

Problems	n	%	Targets	n	%	Categories	n	%	Interventions	n	%
Skin	298	24.2	Wound care /dressing change	166	55.70	Surveillance	158	53.0	Recommended technique	164	55.03
			Symptom findings/physical	114	38.26	Treatments and Procedures	124	41.6	Pain assessment	38	12.75
			Nursing care	7	2.35	Teaching, Guidance, and			Vital findings	20	6.71
			Medical treatment/dental treatment	5	1.68	Counseling	9	3.0	Nursing care plan	3	1.01
			Durable medical equipment	4	1.34	Case management	7	2.4	Protective dressing	6	2.01
			Skin care	1	0.34				Cold treatment	9	3.02
			Physical therapy care	1	0.34				Planning treatment	5	1.68
									Receiving planned maintenance services	2	0.67
									Wound diameter/depth assessment	45	15.10
									Infection symptom follow-up	6	2.01
Pain	254	20.7	Symptom findings/physical	201	79.13	Surveillance	176	69.3	Pain assessment	67	26.38
			Durable medical equipment	16	6.30	Treatments and Procedures	41	16.1	Nursing care plan	2	0.79
			Nursing care	8	3.15	Case Management	20	7.9	Vital findings	45	17.72
			Medical treatment/dental treatment	17	6.69	Teaching, Guidance, and			Massage/ relaxation techniques	3	1.18
			Physical therapy care	12	4.72	Counseling	17	6.7	Planning treatment	18	7.09
									Positioning	6	2.36
									Hot/cold treatments	5	1.97
									Frequency/duration	50	19.69
									Location/location	58	22.83
Digestive – Hydration	131	10.7	Symptom findings/physical	94	71.8	Surveillance	86	65.65	The follow-up he took out	14	10.69
			Medical treatment/dental treatment	19	14.5	Treatments and Procedures	21	16.03	Nursing care plan	12	9.16
			Nursing care	6	4.6	Case Management	21	16.03	Nausea and vomiting follow-up	35	26.72
			Durable medical equipment	6	4.6	Teaching, Guidance, and			Skin color assessment	8	6.11
			Feeding procedures	4	3.1	Counseling	3	2.29	Skin turgor assessment	2	1.53
			Support system	2	1.5				General assessment	2	1.53
									Vital findings	27	20.61
									Planning treatment	17	12.98
									Receiving planned maintenance services	2	1.53
									Adequate/appropriate	4	3.05
									Disease infection indicator	3	2.29
									Family and friends support	3	2.29
									Coordination	2	1.53

in the study. Moreover, in parallel with the study results, school injuries occur in the literature as the most frequently encountered and emphasized problem by school health personnel. According to the 2015 data from the Centers for Disease Control and Prevention (CDC), the rate of children being exposed to violence at school (32.8%) and accidents (21.5%) is relatively high.[22] In a study conducted in primary schools in Istanbul, Turkey, 3302 injuries due to school accidents were detected, and 48% of these injuries were mainly skin problems characterized by abrasions, cuts, bruises, and bleeding in the extremities.[23] A multinational systematic review of school-aged children found that 44.2% of participants reported pain in the past six months.[24] In line with the results, it is important to make environmental arrangements to prevent injuries to school-age children, to organize educational programs for parents, children, and school staff, and to record and monitor them with an electronic system.

In the present study, the fifth most common problem detected in children was oral health, while dental caries was the most common symptom of this problem. Our study results support the findings of previous studies. In a study with children aged 5-15 years found that children with uneducated parents went to the dentist more frequently due to toothache, brushing once a day, and toothache. [25] In Kuter[26] study, the prevalence rate of dental caries in children aged six years was 86.63%.[26] Based on the present study results, planning intervention studies for parents and children on oral and dental health emerges as a significant result. Other research also indicates that oral health problems remain a substantial concern for children. Based on the current findings, planning intervention studies for parents and children focused on oral and dental health is crucial, as well as conducting regular screenings, recording and monitoring outcomes, and referring students with oral health issues to a dentist.

Nurses have various roles in caregiving. Figure 3 shows signs/findings for different problems such as pain, skin, circulation, and oral health were detected in children, and nursing interventions were performed 1007. The most common goals for nursing interventions were symptom findings / physical, wound care and dressing change, medical treatment / dental treatment, nursing care, and durable medicine means. These interventions were carried out using the categories of surveillance, treatment and procedure, case management and teaching, guidance and counseling. In the current study, while more than half of the students received services in the surveillance category (57.4%), the recommended signs/symptoms - physical target technique was used the most. In the other study with the school community, students received more teaching, guidance, and counseling (58.1%); further, the planning of services was the most used intervention.[7] The research results show that the categories of teaching, guidance, counseling, and surveillance are prominent in providing care services to school-age children. This result emphasizes the need and importance of education and surveillance services for school children. In Cosansu et al.[27] a study involving 30 children with acute needs in a hospital setting using the Omaha system, the most frequently used category was Treatment and Procedures, with 32.5%, leading to a reduction in frequently identified problems and improvement in care outcomes. This finding suggests that the care categories in clinical and non-clinical settings may vary according to need when caring for children.

Using the Omaha System, a nursing classification system, in different areas is extremely important to identify its deficiencies and take action.[28] Schools are known as places that directly contribute to behaviors that support students' health.[8] In this respect, the school health nurse can manage the services best by using the 'Omaha System' in school health services such as student health assessment, health screenings, health education, and prevention of infectious diseases. With this system, requests and records made in schools become more visible, and time can be saved. In addition, the study's results highlight the need for electronic-based systems to provide health services in the school environment. In addition, using the Omaha system can potentially improve the quality of care by allowing retrospective review of health data.

Limitations

The Problem Rating Scale could not be used in this study because the children's acute complaints were evaluated retrospectively. The Problem Rating Scale for Outcomes is important for assessing the effectiveness of practitioner interventions, as it evaluates individuals' knowledge, behavior, and status before and after the intervention. The results are limited by the study sample.

Effective and reliable tools are needed to document evidence-based school nurse interventions in identifying and evaluating student health assessments. This study guided the evaluation of problems in the field of school health nursing and the use of electronic health records. The Omaha System matched the issues, categories, and targets related to children's acute health problems. The results should encourage the use of the Omaha System for electronic-based information. The Omaha System's application in acute pediatric care is particularly significant due to its structured approach to assessing and addressing

children's immediate health needs. The system's detailed categorization and problem-target matching ensure that school nurses can provide timely and effective interventions even in acute scenarios. Moreover, the Omaha System supports ongoing surveillance, which is vital in acute care, enabling school nurses to monitor the child's condition continuously and adapt interventions as needed. This systematic and data-driven approach improves the quality of care provided in acute situations and contributes to better long-term health outcomes for children. In addition, with this system, an international common network can be provided among school health nurses, and evidence-based data can be obtained for evaluation.

The Omaha System provides the capability for detailed individual assessment. However, we have not encountered an example of its application in school health nursing. In this context, we emphasize and recommend its use by school nurses. Based on the research findings, planning intervention studies for common problems and evaluating the results of intervention studies using the Problem Assessment Scale will be useful.

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Hasta Onamı: Veriler daha önceden kaydedilmiş olduğu için onam gerekmemektedir. Tüm veriler gizlilik ve anonimlik ilkelerine uygun olarak analiz edilmiştir.
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REFERENCES

1. American Academy of Pediatrics & Council on School Health. Role of the school nurse in providing school health services. *Pediatrics.* 2016;137(6):e20160852. https://doi.org/10.1542/peds.2016-0852
2. WHO. WHO guideline on school health services. 2021. https://www.who.int/publications/i/item/9789240029392
3. Hoekstra BA, Young VL, Eley CV, et al. School Nurses' perspectives on the role of the school nurse in health education and health promotion in England: A qualitative study. *BMC Nursing.* 2016;15:73. https://doi.org/10.1186/s12912-016-0194-y
4. Selekman J, Shannon RA, Yonkaitis CF. *School nursing: A comprehensive text*. FA Davis. 2019.
5. Türkiye İstatistik Kurumu. [Internet]. Accessed December 11, 2021. https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklerle-Cocuk-2021-45633
6. Turkish Ministry of National Education. [Internet]. 2022. https://www.meb.gov.tr/mebden-okul-sagligi-hemsireleri-yonergesi/haber/25778/tr
7. Ilgaz A. Effect of health screening and School Nurse Interventions on primary school students' knowledge, behavior, and status in Turkey: A quasi-experimental Omaha System study. *J Pediatr Nurs.* 2022;62:e115-e124. https://doi.org/10.1016/j.pedn.2021.08.014
8. Onder C, Ardic A. Problematic internet use and digital gaming in adolescents: problems, nursing ınterventions, and outcomes. *J Psychosoc Nurs Ment Health Serv.* 2020;58(12):51-59. https://doi.org/10.3928/02793695-20200918-02
9. Schenk E, Schleyer R, Jones CR, et al. Impact of adoption of a comprehensive electronic health record on nursing work and caring efficacy. *CIN.* 2018;36(7):331-339. https://doi.org/10.1097/cin.0000000000000441
10. Erdogan S, Esin NM. The Turkish version of the Omaha System: Its use in practice-based family nursing education. *Nurse Educ Today.* 2006;26(5):396-402. https://doi.org/10.1016/j.nedt.2005.11.009
11. Zhang X, Li Y, Li H, et al. Application of the Omaha System in the education of nursing students: A systematic review and narrative synthesis. *Nurse Educ Pract.* 2021;57:103221. https://doi.org/10.1016/j.nepr.2021.103221
12. Gur K, Ergun A, Yildiz A, et al. Health problems of students according to Omaha problem classification. *J Nurs Res Dev*. 2008;10(3):1-14. https://dergipark.org.tr/tr/pub/hemarge/issue/52701/695013
13. Lee JH, Park HA. Development of a nursing decision support system for health problems of elementary and secondary school students. *J Korean Soc Med Inform.* 2009;15(1):71-82. https://doi.org/10.4258/jksmi.2009.15.1.71
14. Martin KS. The Omaha System: A key to practice, documentation, and information Management. Reprinted 2nd Ed. Omaha, NE: Health Connections Press; 2005.
15. Erdogan S, Nahcivan N, Esin NM, et al. Omaha system. Information management in nursing. Ankara, Nobel Medicine Bookstore; 2016.
16. Topaz M, Golfenshtein N, Bowles KH. The Omaha System: a systematic review of the recent literature. *JAMIA*. 2014;21(1):163–170. https://doi.org/10.1136/amiajnl-2012-001491

17. Erdogan S, Nahcivan N, Esin N, Seçginli S, Cosansu G, Ardic A. Omaha sistemi hemşirelikte bilgi yönetimi. Istanbul: Nobel Tıp Kitabevleri;2017.
18. Nightingale Notes Champ Software. Mavi Elma Yazılım. Accessed September 17, 2024. https://www.nightingalenotes.com/
19. Ardic A, Turan E. Nursing care management based on the Omaha system for inpatients diagnosed with COVID-19: an electronic health record study. *J Adv.Nurs*. 2021;77(6):2709-2717. https://doi.org/10.1111/jan.14793
20. Lu SC, Delaney C, Tracy MF, et al. Content validity of the Omaha System target terms for integrative healthcare interventions. *Res Theory Nurs Pract.* 2022;36(3):239-264. https://doi.org/10.1891/RTNP-2021-0089
21. Li J, Fan X, Deng Q, et al. Significance of continuous nursing of Omaha system in children after hypospadias surgery and its influence on infection complications. *Contrast Media Mol Imaging*. 2022;1:8346848. https://doi.org/10.1155/2022/8346848
22. Centers for Disease Control and Prevention (CDC). Online information available at https://www.cdc.gov/mmwr/volumes/65/ss/ss6506a1.htm 2015 (accessed January 2022)
23. Gur K, Yildiz A. Epidemiology of unintentional ınjuries in the elementary schools of Istanbul. *J Public Health.* 2007;2:49-57. https://dergipark.org.tr/en/pub/tjph/archive
24. Gobina I, Villberg J, Välimaa R, et al. Prevalence of self-reported chronic pain among adolescents: Evidence from 42 countries and regions. *Eur J Pain.* 2019;23(2):316-326. https://doi.org/10.1002/ejp.1306
25. Mishra A, Pandey RK, Chopra H, et al. Oral health awareness in school-going children and its significance to parent's education level. *J Indian Soc Pedod Prev Dent.* 2018;36:120-124. https://doi.org/10.4103/JISPPD.JISPPD_1172_17
26. Kuter B. The evaluation of oral health status of 6-year-old children in Izmir and significance of the significant carıes index. *J Dent Fac Atatürk Uni.* 2019;29(2):176-181. https://doi.org/10.17567/ataunidfd.437235
27. Cosansu G, Cangol S, Erdogan S. The use of Omaha System in the nursing care of children with acute care needs. *Florence Nightingale J Nurs.* 2014;22(3):137–44. https://fnjn.org/en/the-use-of-omaha-system-in-the-nursing-care-of-children-with-acute-care-needs-13736
28. Saylan G, Yesilfidan D, Ozvurmaz S. Omaha System. In: Akkaya R, editor. Current discussions in health sciences. Ankara: Bilgin Kultur Sanat Publishing. 2022; p. 90–100.

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