

# Determination of the Relationship Between Intensive Care Nurses' Attitudes Towards Evidence-Based Nursing and Decision-Making Skills

## Yoğun Bakım Hemşirelerinin Kanıta Dayalı Hemşireliğe Yönelik Tutumları ile Karar Verme Becerileri Arasındaki İlişkinin Belirlenmesi

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Geliş Tarihi/Received: 25.03.2024 • Kabul Tarihi/Accepted: 15.05.2024 • Yayın Tarihi/Publication Date: 24.08.2024

\*Çalışmanın özeti "3. Uluslararası 9. Ulusal Yoğun Bakım Hemşireliği Kongresi"nde sözlü bildiri olarak sunulmuştur.

\*The abstract of the study was presented as an oral presentation at the "3rd International 9th National Intensive Care Nursing Congress".

Cite this article as: Yücel M, Çelik S, Karahan E, Altıntaş S, Uçar Ö. Determination of the Relationship Between Intensive Care Nurses Attitudes Towards Evidence-Based Nursing and Decision-Making Skills. *J Intensive Care Nurs.* 2024;28(1):66-74.



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### Abstract

**Objective:** The aim of this study To examine the relationship between the attitudes of nurses working in intensive care units towards evidence-based nursing and their decision-making skills.

**Methods:** It is a descriptive cross-sectional correlational study. 82 intensive care nurses participated in the research. The data were collected with the Information Form, Evidence-Based Nursing Attitude Questionnaire (EBNAQ), and Nurse Decision-Making Instrument (NDMI). Data were evaluated using descriptive statistics, Pearson Correlation Analysis, Independent t-tests, ANOVA, and Levene's tests.  $p < .05$  significance was accepted.

**Results** It was found that the nurses' attitudes towards evidence-based nursing were at a moderate level (EBNAQ score  $61.59 \pm 9.27$ ), and they made intuitive decisions (NDMI score  $95.05 \pm 12.05$ ). The belief and expectations sub-dimension mean score of EBNAQ was  $29.63 \pm 4.41$ , the intention sub-dimension mean score was  $15.30 \pm 3.14$ , and the emotions sub-dimension mean score was  $16.65 \pm 3.14$ . Statistically significant positive relationship was found between the total score of the scale of attitudes towards evidence-based nursing and the total scores of the nursing decision-making scale ( $r = .468, P < .01$ ).

**Conclusion:** The study concluded that nurses' positive evidence-based nursing attitudes supported their decision-making skills. In line with this result, nurses' awareness of evidence-based practices should be increased, and they should be able to make analytical decisions.

**Keywords:** Decision making, evidence-based practice, intensive care, nursing

### Öz

**Amaç:** Bu çalışmanın amacı, yoğun bakımlarda çalışan hemşirelerin kanıta dayalı hemşireliğe yönelik tutumları ile karar verme becerileri arasındaki ilişkiyi incelemektir.

**Yöntemler:** Tanımlayıcı kesitsel tipte ilişki arayıcı bir araştırmadır. Araştırmaya 82 yoğun bakım hemşiresi katılmıştır. Veriler Bilgi Formu, Kanıta Dayalı Hemşireliğe Yönelik Tutum Ölçeği (KDHYTÖ), Hemşire Karar Verme Ölçeği (HKVÖ) ile toplanmıştır. Veriler, tanımlayıcı istatistikler, Pearson korelasyon analizi, bağımsız t, ANOVA, Levene testleri kullanılarak değerlendirilmiştir.  $p < .05$  anlamlılık kabul edilmiştir.

**Bulgular** Hemşirelerin kanıta dayalı hemşireliğe yönelik tutumlarının orta düzeyde olduğu (KDHYTÖ skoru  $61,59 \pm 9,27$ ) ve sezgisel karar verdikleri (HKVÖ skoru  $95,05 \pm 12,05$ ) bulunmuştur. KDHYTÖ'nün inanç ve beklentiler alt boyut puan ortalaması  $29,63 \pm 4,41$ , niyet alt boyut puan ortalaması  $15,30 \pm 3,14$  ve duygular alt boyut puan ortalaması  $16,65 \pm 3,14$  olarak belirlenmiştir. Kanıta dayalı hemşireliğe yönelik tutum ölçeği toplam puanı ile hemşirelik karar verme ölçeği toplam puanı arasında istatistiksel olarak anlamlı pozitif ilişki bulunmuştur ( $r = .468, P < .01$ ).

**Sonuç:** Araştırmada, hemşirelerin kanıta dayalı hemşirelik tutumlarının olumlu olmasının karar verme becerilerini desteklediği sonucuna varıldı. Bu sonuç doğrultusunda, hemşirelerin kanıta dayalı uygulamalar konusunda farkındalıkları artırılmalı ve analitik karar verebilmeleri sağlanmalıdır.

**Anahtar Kelimeler:** Hemşirelik, kanıta dayalı uygulama, karar verme, yoğun bakım

## INTRODUCTION

Intensive care units are units where complex advanced technologies are used, and patients with existing or potential life-threatening problems are monitored 24 hours a day.<sup>1</sup> Intensive care nurses should be able to use complex intensive care technologies in the treatment, follow-up, evaluation, early intervention, and care of patients in critical periods. Intensive care nurses should also be multidisciplinary team members who can provide care with evidence-based practices. As a part of this multidisciplinary team, intensive care nurses who deal with critical patients 24/7 in intensive care must be competent in their profession.<sup>2,3</sup> Nurses, the most comprehensive group among healthcare professionals, are vital in promoting and providing better healthcare services. As health professionals, nurses are obliged to provide patients with competent, safe, and efficient care based on scientific evidence.<sup>4,5</sup>

Evidence is information available to healthcare decision-makers and is founded on a scientific assessment of practice.<sup>6</sup> Evidence-based practice is a clinical problem-solving process that involves researching the relevant literature, evaluating research results, and making decisions based on them. On the other hand, evidence-based nursing is making decisions in care settings using patient choices, clinical expertise, and the best available evidence.<sup>7</sup> Evidence-based practices aim to manage knowledge in patient care, reduce costs, and optimize patient care.<sup>8</sup> In line with this purpose, evidence-based nursing practices are recognized to result in safer, higher-quality care, better patient outcomes, and lower costs, empowering clinicians and providing higher levels of commitment, teamwork, and job satisfaction.<sup>9</sup> While the first examples of evidence-based nursing practices were found in countries such as Canada, the USA, and Australia, as well as in English literature, studies on the subject started to be conducted in our country after 2000.<sup>10</sup> Including evidence-based practices in nursing care enhances nurse satisfaction, standardizes care, influences clinical procedures and patient outcomes, and improves the quality and results of care. Today, the introduction of new technological interventions into our lives, increased use of communication technologies, and easy access to information have increased the expectations of patients. For these reasons, it has become almost necessary to include evidence-based practices in current nursing practices, especially in clinical decision-making.<sup>6,11,12</sup>

Making clinical decisions is a complex process that includes transferring, developing, and changing basic and current professional knowledge to practice, synthesizing and separating information, choosing the best option, and using it in practice.<sup>13,14</sup> Evidence-based practices are crucial for nurses to make effective decisions.<sup>8</sup>

Determining nurses' attitudes towards evidence-based practices will help to increase evidence-based nursing practices and develop strategies. There are studies in the literature that determine attitudes.<sup>6-8,12,15</sup> However, the literature review found no study to assess the relationship between nurses' attitudes toward evidence-based practices and decision-making. This study aimed to ascertain how nurses' attitudes toward evidence-based nursing in intensive care units relate to their ability to make sound decisions.

## METHODS

**Type of Research:** The research is a descriptive cross-sectional correlational study.

**Population and Sample of the Study:** The study's participant population included all nurses (N:102) employed in the critical care clinics of a state hospital in the Western Black Sea Region. No sample selection was done in the study; instead, it was intended to reach the entire population. Eighty-two nurses consented to participate in the study made up the sample (participation rate: 80%). According to the G power post hoc power analysis at the end of the study, the power of the study was found to be 99%.

**Data Collection Tools:** A Data Collection Form was utilized to gather study data, which included sociodemographic details, the Evidence-Based Nursing Attitude Questionnaire (EBNAQ), and the Nurse Decision-Making Instrument (NDMI).

**Data Collection Form:** Ten questions comprise the data collecting form the researcher created following the literature. The form includes questions about demographic data such as age, gender, marital status, institution of employment, and nurses' working time.<sup>4,14</sup>

**Evidence-Based Nursing Attitude Questionnaire (EBNAQ):** The scale developed in 2011 (Ruzafa-Martinez, Lopez-Ibaorra, and Madrigal-Torres) was validated and reliable in Turkish by Ayhan, Kocaman, and Bektaş (2015). The scale consists of three sub-dimensions and 15 items; items 1,2,5,7,7,9,11,13, and 14 contain positive statements, while items 3,4,6,8,10,12, and 15 contain negative statements. These items are coded by reversing them. The scale is based on a five-point Likert scale (1-never agree-5-totally agree), and the scale is scored between 15 and 75 points. A high score on the scale indicates a positive attitude towards evidence-based nursing. The reliability coefficients of the original scale used were .86 and .91 in the study.<sup>16,17</sup>

**Nurse Decision-Making Instrument (NDMI):** It is a 56-item scale prepared by Lauri and Salanterä (2002) based on Hammond's "Cognitive Continuum Theory." It was developed by addressing analytical and intuitive decision-making processes to determine the decision-making mechanisms of nurses or nursing students in clinical practice. After a second factor analysis by Lauri and Salanterä (2002), the scale was reduced from 56 to 24 items. The newly revised form of the scale, evaluated on a five-point Likert scale ranging from "Never or almost never-1 to Almost always-5", was designed to cover four decision-making stages. These stages are data collection, data processing and problem identification, action planning, and plan implementation, monitoring, and evaluation. The scale's odd-numbered elements represent analytical decision-making, while the even-numbered items represent intuitive decision-making. Participants are asked to mark the response on the scale that most accurately represents their decision-making actions. Scores that can be obtained from the scale range between 24-120. Decision-making is deemed analytical for scores over 67, semi-rational for scores between 68 and 78, and intuitive for scores above 78. It is determined that participants make more analytical decisions when their scale scores go down and more intuitive decisions when their scores go up. In the original study, it was reported that the NDMI had a reliability (Cronbach's alpha = .84), while in the current study, it was .92.<sup>13</sup>

**Data Collection:** Between August 10 and October 1, 2022, nurses working in intensive care units who volunteered to engage in the study provided the researcher with face-to-face data. The forms were filled out in the clinics where the nurses worked at any time convenient for the researcher and the nurse. It took approximately 10 minutes to fill out the forms.

**Data Evaluation:** The data were analyzed using the SPSS (IBM SPSS Corp., Armonk, NY, USA) 23.0 software. For categorical data, frequency distributions were employed, and for numerical variables, descriptive statistics were used. Pearson correlation analysis was performed to see whether there was a relationship between two numerical variables. The independent groups t-test and ANOVA were employed to determine whether there was a measurement difference between the variables. Following the analysis, homogeneity of variance was assessed using Levene's test; differences between groups in variables that contributed to homogeneity of variance were assessed using the Bonferroni test; and differences between groups in variables that did not contribute to homogeneity of variance were assessed using Tamhane's T2 test. Additionally, scale reliability was evaluated using Cronbach's alpha value.  $P < .05$  was considered significant.

**Ethics of Research:** The Social and Human Sciences Ethics Committee at a Bartın University granted permission to carry out the study (Date: 28.07.2022, decision no: 2022-SBB-0352). Prior to the study, institutional permission was acquired from the hospital. Verbal information regarding the study was provided to the participating nurses. The nurses who consented to participate in the trial gave written informed consent.

## RESULTS

The study's sample of nurses had a mean age of  $31.1 \pm 7.1$  years, 73.2% female, and 52.4% married. Seventy-eight percent of the nurses held a bachelor's degree, 39 percent had worked in critical care for one to five years, and 43.9% said they were employed in a third-level intensive care unit. (Table 1).

**Table 1. Socio-demographic characteristics of nurses (N=82)**

		Mean(SD)	Min-Max
<b>Age (years)</b>		31.1±7.1	20-45
<b>Years of working in the profession</b>		8.5±6.3	1-24
		<b>n</b>	<b>%</b>
<b>Gender</b>	Female	60	73.2
	Male	22	26.8
<b>Marital status</b>	Married	43	52.4
	Single	39	47.6
<b>Education level</b>	Secondary education	13	15.9
	Bachelor's degree	64	78.0
	Master's degree	5	6.1
<b>Tenure in intensive care</b>	Less than 1 year	8	9.8
	1-5 year	32	39.0
	6-10 year	19	23.2
	11 years and over	23	28.0
<b>Intensive care unit type</b>	1st level ICU	29	35.4
	2nd level ICU	17	20.7
	3rd level ICU	36	43.9
<b>Total</b>		82	100

\*ICU: Intensive care unit n: Number of individuals SD: Standard Deviation Min: Minimum value. Max: Maximum value  
%: Percent Mean: Average

Table 2 shows the mean total scores of the nurses included in the study, the mean scores of the sub-dimensions, and the mean scores of the (EBNAQ). The average score for the nurses was  $61.5 \pm 9.2$ ; for the "Beliefs and Expectations Towards Evidence-Based Nursing" sub-dimension, it was  $29.6 \pm 4.4$ ; for the "Evidence-Based Practice Intention" sub-dimension, it was  $15.3 \pm 3.1$ ; and for the "Emotions Related to Evidence-Based Nursing" sub-dimension, it was  $16.6 \pm 3.1$ . The NDMI mean score was  $95 \pm 12.6$  (Table 2).

**Table 2. Mean scores of the Evidence-Based Nursing Attitude Questionnaire and Nurse Decision-Making Instrument (N=82)**

Scale and sub-dimensions	Mean(SD)	Min	Max
Beliefs and expectations towards evidence-based nursing sub-dimension	29.6±4.4	17	35
Evidence-based practice intention sub-dimension	15.3±3.1	8	20
Emotions related to evidence-based nursing sub-dimension	16.6±3.1	8	20
Total score of the attitude towards evidence-based nursing scale	61.5±9.2	41	75
Total score of the nurse decision-making scale	95±12.6	48	120

Mean: Average SD: Standard Deviation Min: Minimum value Max: Maximum value

There is no statistically significant difference between marital status, education level, and working time in the intensive care unit regarding attitude towards evidence-based nursing scale and sub-dimension scores ( $p > .05$ ). There is a statistically significant difference between genders in terms of the intention sub-dimension

scores of the intention subscale ( $P < .05$ ). Accordingly, women’s intention sub-dimension score is higher than men’s. There is a statistically significant difference between the intensive care units in terms of emotions sub-dimension score ( $P < .05$ ). Accordingly, the emotions sub-dimension score of the employees working in the 3<sup>rd</sup> step is higher than those working in the first step (Table 3).

**Table 3. Examination of the relationship between demographic variables and the EBNAQ and Its Sub-Dimensions (N=82)**

		Beliefs and expectations sub-dimension	Intention sub-dimension	Emotions sub-dimension	EBNAQ score total
	n	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)
<b>Gender</b>					
Female	60	30.1±4.3	15.8a±2.9	16.8±3.3	62.8±9.2
Male	22	28.3±4.3	13.8b±3.1	16±2.5	58.2±8.5
t/p		1.654/.102	2.604/.011*	.970/.335	1.994/.050
<b>Marital status</b>					
Married	43	29±4.3	15.1±2.7	16.3±3.2	60.5±9
Single	39	30.3±4.4	15.4±3.5	17±2.9	62.7±9.5
t/p		1.323/.189	-0.358/.721	-.971/.335	-1.078/.284
<b>Education level</b>					
Secondary education	13	28.3±5.5	14.3±4.1	16.2±3.5	58.9±12.1
Bachelor's degree and above	69	29.8±4.1	15.4±2.9	16.7±3	62±8.6
t/p		.916/.375	-.985/.341	-.518/.606	-.896/.385
<b>Working time in intensive care</b>					
Less than 5 years	40	30±4.4	15±3.3	16.4±3.2	61.5±9.7
6-10 years	19				
11 years and over	23	29.8±4.5	15.4±3.5	17.2±3.3	62.5±10.3
F/p		28.7±4.2	15.6±2.3	16.4±2.9	60.8±7.8
F/p		.658/.520	.223/.800	.393/.676	.171/.843
<b>Intensive care unit worked in</b>					
1 <sup>st</sup> level ICU <sup>a</sup> **	29	28.6±4.8	15.1±3.1	15.4b±3.8	59.2±10.3
2 <sup>nd</sup> level ICU <sup>b</sup> ***	17	30.1±4.5	15±4.0	17±2.1	62.1±9.6
3 <sup>rd</sup> level ICU <sup>c</sup> ****	36	30.1±3.9	15.6±2.7	17.4a±2.5	63.1±8
F/p		1.031/.362	.305/.738	3.551/.033*	1.522/.225

\*a, b: shows mean differences between groups (a: highest mean, b: lowest mean) \*F: One-way ANOVA test, t: Independent sample t test,  $P < .05$  \*\*ICU<sup>a</sup>:1st step intensive care \*\*\*ICU<sup>b</sup>:2nd step intensive care \*\*\*\*:3<sup>rd</sup> step intensive care

A statistically significant relationship was found between the total score of the attitude towards evidence-based nursing scale and all sub-dimension scores ( $P < .01$ ). In addition, a statistically significant positive relationship was found between the total score of the scale of attitudes towards evidence-based nursing and the total scores of the nursing decision-making scale ( $r=.468, P < .01$ ) (Table 4).

**Table 4. Examination of the relationship between the Evidence-Based Nursing Attitude Questionnaire and Nurse Decision-Making Instrument and Their Sub-Dimensions**

		NDMI** total score	EBNAQ*** total score	Emotions sub- dimension	Intention sub- dimension	Beliefs and expectations sub-dimension
Beliefs and expectations subdimension	r	.439	.902	.518	.74	1
	p	.00*	.00*	.00*	.00*	
Intention sub- dimension	r	.299	.896	.608	1	
	p	.06*	.00*	.00*		
Emotion sub- dimension	r	.467	.791	1		
	p	.00*	.00*			
Evidence-based nursing attitude questionnaire	r	.468	1			
	p	.00*				

\*r: Pearson correlation coefficient,  $P < .05$  \*\* NDMI: Nurse Decision-Making Instrument \*\*\* EBNAQ: Evidence-Based Nursing Attitude Questionnaire

## DISCUSSION

In a good nursing practice, nurses should support their care with evidence-based interventions and developing technology. They should transfer the strengthened care to practice with an adequate clinical decision-making process.<sup>18</sup> Thus, as a consequence of the research we carried out to ascertain the connection between the views of nurses employed in critical care units regarding evidence-based nursing and their ability to make decisions, it was found that the mean total score of the EBNAQ was  $61.5 \pm 9.2$  and the mean score of the NDMI was  $95 \pm 12$ . Considering that the scores obtained from the EBNAQ are between 15 and 75, it can be said that nurses' attitudes towards evidence-based nursing are at a high level.<sup>7</sup> The mean total score of the EBNAQ was  $43.5 \pm 3$  in the study by Menekli and Korkmaz with internal medicine nurses and  $57.1 \pm 8.2$  in the study by Yılmaz et al. with surgical nurses, according to research conducted in our nation.<sup>6,7</sup> When compared with these studies, it is seen that the nurses in our study have more positive attitudes toward evidence-based nursing. This positive difference is thought to be due to the fact that the nurses in our study worked in intensive care. Intensive care units are clinics where multiple critical, complex nursing practices are performed simultaneously, and evidence-based practices are essential in these practices.<sup>19</sup> This situation is thought to positively affect nurses' attitudes towards evidence-based nursing.

In our study, the mean score of the beliefs and expectations sub-dimension of the EBNAQ was  $29.6 \pm 4.4$ . In a study conducted by Menekli and Korkmaz with internal medicine nurses, the mean score of the beliefs and expectations sub-dimension of the EBNAQ was  $23.1 \pm 2$ . In another study conducted by Şen and Yurt with nurses, the mean score of the beliefs and expectations sub-dimension of the EBNAQ was  $30.5 \pm 4.3$ .<sup>6,20</sup> In our study, the mean score of the intention sub-dimension of the EBNAQ intention subscale was  $15.3 \pm 3.1$ , and the intention sub-dimension score of women was higher than that of men. The reason for this is thought to be that the nursing profession is defined by the roles and duties of women, and socially, care practices arising from women's maternal compassion are associated with nursing.<sup>21</sup> The intention sub-dimension reflects nurses' behaviors or intentions to implement evidence-based practices. Intention is an essential determinant in transforming into behavior. In the study by Şen and Yurt, the mean score of the intention sub-dimension of the EBNAQ was found to be at a moderate level of  $12.6 \pm 2.6$ .<sup>20</sup> In this sense, parallel results were obtained with the literature in our current study.

In our study, the mean score of the emotions sub-dimension of the EBNAQ was found to be  $16.6 \pm 3.1$ , and the emotions sub-dimension score of the employees working in the third step was higher than those working in the first step. In the study conducted by Şen and Yurt, the mean score of the emotions sub-dimension of the EBNAQ was found to be at a moderate level of  $8.1 \pm 3.7$ , and in the study of Daştan and Hintistan, it was found to be



15.2±3.5.<sup>4,20</sup> The mean score of the emotions subscale was thought to be higher in our study than in similar studies because it was conducted with intensive care nurses. Intensive care units are clinics where critically ill patients with poor general conditions are in the majority, patients have a long hospitalization period, and healthcare professionals, especially nurses, are emotionally affected.<sup>22</sup> Similarly, the emotions subscale score of the employees working at the 3rd level was found to be higher than those working at the first level. Step 3 intensive care units are the highest level units where patients with severe trauma are treated and followed up, multiple organ failure, and many supportive therapies are given together, unlike Step 1 and 2 intensive care units.<sup>23,24</sup> The emotion subscale score was thought to be higher among Step 3 intensive care nurses because the general condition of patients in this clinic is worse, and mortality rates are higher.<sup>25-27</sup>

In our study, the mean score of the NDMI was 95±12, and it was concluded that nurses made intuitive decisions with the score obtained. Although the nurses' attitudes towards evidence-based nursing are at a good level, their intuitive decision-making suggests that nurses use their past knowledge and experience in the decision-making process. The fact that 51.2% of the nurses in our study had five years or more of intensive care experience and the mean age was 31.1±7.1 years supports this. Experience, one of the most critical factors affecting the nurse's decision-making process, increases nurses' self-confidence and enables them to recognize and handle the patient. According to Benner, the technical and rule-based approach in the novice (inexperienced) nurse and the intensive clinical knowledge that supports intuitive decision-making in the expert (working five years or more) nurse can change nursing goals and processes.<sup>28,29</sup> Experience increases clinical decision-making abilities and supports accurate, well-interpreted detection and interpretation of patient-related stimuli, strengthening intuitive decision-making. In analytical decision-making, a specific situation is analyzed systematically, while in intuitive decision-making, past knowledge and experience are used. In this respect, intuitive decision-making has advantages such as fast information processing, simultaneous use of clues, and rapid data evaluation at the perceptual level.<sup>29</sup>

### Study Limitations

This investigation was carried out in a state hospital's intensive care units. Thus, the study's results cannot be generalized to all intensive care nurses. In future studies, it is recommended that more nurses be reached in more than one hospital.

### CONCLUSION

This study concluded that intensive care nurses had positive attitudes toward evidence-based practices and made decisions based on intuition. In the study, it was also determined that attitudes toward evidence-based practices positively affected decision-making skills.

In line with these results, there is a need for individual and institutional support to improve nurses' evidence-based practice competencies and increase the use of evidence-based practice in their practices. It would be helpful for intensive care nurses to participate in postgraduate education, congresses, symposiums, and courses organized by professional organizations to improve their analytical decision-making skills. It is also recommended that health institutions organize regular programs for in-service training, improve the opportunities for nurses to conduct research, and encourage their participation in scientific meetings.

**Ethics Committee Approval:** Ethics committee approval was obtained from the Social and Human Sciences Ethics Committee of Bartın University for this study (Ethics committee decision no: 2022-SBB-0352, Date: 28.07.2022).

**Informed Consent:** Written informed consent was obtained from the nurses who participated in this study.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept – M.Y., S.A.; Design – M.Y., S.Ç.; Supervision – S.Ç., E.K., S.A.; Resources – M.Y., S.Ç., E.K., S.A., Ö.U.; Materials – M.Y., Ö.U.; Data Collection and/or Processing – M.Y., Ö.U.; Analysis and/or

Interpretation – M.Y., Ö.U.; Literature Search – M.Y., Ö.U.; Writing Manuscript – M.Y., S.Ç., E.K., S.A., Ö.U.; Critical Review – S.Ç., E.K., S.A.; Other – M.Y., S.Ç., E.K., S.A., Ö.U.

**Declaration of Interests:** The authors have no conflicts of interest to declare.

**Funding:** The authors declare that they received no financial support for this study.

**Etik Komite Onayı:** Bu çalışma için Bartın Üniversitenin Sosyal ve Beşerî Bilimler Etik Kurulu'ndan etik kurul onayı alınmıştır (Etik kurul karar no: 2022-SBB-0352, Tarih: 28.07.2022).

**Bilgilendirilmiş Onam:** Bu çalışmaya katılan hemşirelerden yazılı bilgilendirilmiş onam alınmıştır.

**Hakem Değerlendirmesi:** Dış bağımsız.

**Yazar Katkıları:** Konsept – M.Y., S.A.; Tasarım – M.Y., S.Ç.; Süpervizyon – S.Ç., E.K., S.A.; Kaynaklar – M.Y., S.Ç., E.K., S.A., Ö.U.; Materyaller – M.Y., Ö.U.; Veri Toplama ve/veya İşleme – M.Y., Ö.U.; Analiz ve/veya Yorumlama – M.Y., Ö.U.; Literatür Tarama – M.Y., Ö.U.; Makale Yazımı – M.Y., S.Ç., E.K., S.A., Ö.U.; Eleştirel İnceleme – S.Ç., E.K., S.A.; Diğer – M.Y., S.Ç., E.K., S.A., Ö.U.

**Çıkar Çatışması:** Yazarlar çıkar çatışması bildirmemişlerdir.

**Finansal Destek:** Yazarlar bu çalışmanın herhangi bir finansal destek almadığını beyan etmişlerdir.

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