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Attitudes and Perceived Barriers of Nurses Working in The Intensive Care Unit Towards Evidence-Based Nursing

Yoğun Bakım Ünitesinde Çalışan Hemşirelerin Kanıta Dayalı Hemşireliğe Yönelik Tutumları ve Algıladıkları Engeller

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Öz

Giriş ve Amaç: Kanıta dayalı hemşirelik, yoğun bakım ünitesinde yüksek kaliteli bakımın ana noktasıdır. Kanıta dayalı hemşirelik uygulamalarını ve engellerini analiz eden çalışmalar da kanıta dayalı bakımı desteklemek için kalite iyileştirmenin ayrılmaz bir parçasıdır. Bu çalışmada yoğun bakım ünitesinde çalışan hemşirelerin kanıta dayalı hemşireliğe yönelik tutumları ile algıladıkları engeller arasındaki ilişkinin belirlenmesi amaçlanmıştır.

Gereç ve Yöntemler: Tanımlayıcı ve ilişki arayıcı tipteki bu çalışmanın örneklemini bir şehir hastanesinin yoğun bakım ünitelerinde çalışan 129 hemşire oluşturmuştur. Veriler "Hemşire Bilgi Formu", "Kanıta Dayalı Hemşireliğe Yönelik Tutum Ölçeği" ve "Engeller Ölçeği" ile toplanmıştır. Verilerin analizi SPSS 27.0 programı kullanılarak yapılmıştır. Verilerin analizinde "Bağımsız Örneklem-t" testi, "Mann-Whitney U" testi, "ANOVA" testi, "Kruskall-Wallis H" testi ve "Spearman" korelasyon katsayısı kullanılmıştır. Veriler $p<0.05$ anlamlılık düzeyinde değerlendirilmiştir.

Bulgular: Hemşirelerin kanıta dayalı hemşireliğe yönelik tutum ölçeği puan ortalaması 61.93± 6.35 idi. Engeller ölçeği puan ortalaması 2.67± 0.52 idi. Araştırmaya katılan hemşirelerin çoğunun bilimsel etkinliklerden haberdar olduğu ve araştırma süreçlerine katıldığı belirlendi. Eğitim düzeyi lisans ve lisansüstü olan, araştırma süreçlerine katılmak isteyen, bilimsel organizasyonlara bildiri ile ve dinleyici olarak katılan hemşirelerin tutumlarının yüksek olduğu saptandı. Araştırmaya katılan hemşirelerin yüksek düzeyde engel algıladıkları ve kanıta dayalı hemşireliğe yönelik tutumları ile algıladıkları engeller arasında negatif yönde zayıf bir ilişki olduğu bulundu.

Sonuç: Yoğun bakım ünitelerinde çalışan hemşirelerin kanıta dayalı hemşireliğe yönelik olumlu tutumlar sergilemektedir. Kanıta dayalı hemşireliğe yönelik tutumları ile algıladıkları engeller arasında negatif yönde zayıf bir ilişki vardır.

Anahtar kelimeler: Hemşirelik, Kanıta dayalı bakım, Yoğun bakım, Yoğun bakım hemşireliği

Abstract

Aim; Evidence-based nursing is the main point of high-quality care in the intensive care unit. Studies analyzing evidence-based nursing practices and barriers are also integral to quality improvement to support evidence-based care. This study aimed to determine the relationship between the attitudes of nurses working in an intensive care unit towards evidence-based nursing and their perceived barriers.

Methods; This descriptive and correlational study was conducted with a sample of 129 nurses working in intensive care units of a city hospital / The sample of this descriptive and correlational study consisted of 129 nurses working in the intensive care units of a city hospital. The data were collected with the "Nurse Information

Form," "Attitude Towards Evidence-Based Nursing Scale," and "Barriers Scale". Data analysis was performed using the SPSS 27.0 program. In the data analysis, the “Independent Sample-t” test, “Mann-Whitney U” test, “ANOVA” test, “Kruskall-Wallis H” test and “Spearman correlation coefficient statistic” were used. Data were evaluated at $p<0.05$ significance level.
Results; The mean score on the nurses' attitude scale towards evidence-based nursing was 61.93± 6.35. The mean score of the Barriers Scale of the nurses participating was 2.67±0.52. Most of the nurses participating in the study were found to be aware of scientific activities and involved in research processes."It was found that nurses with undergraduate and graduate education levels, those who wanted to participate in research processes, and those who attended scientific organizations as presenters or listeners had higher attitude scores. It was also found that the nurses who participated in the study perceived a high level of barriers and there was a weak negative relationship between their attitudes towards evidence-based nursing and the barriers they perceived.
Conclusion;Nurses working in intensive care units exhibit positive attitudes towards evidence-based nursing.There is a weak negative relationship between their attitudes towards evidence-based nursing and the barriers they perceive.

Keywords: Nursing, Evidence-based care, Intensive care, Intensive care nursing

1. Introduction

Evidence-based practice (EBP) has become a requirement for all health professionals as developments in science and technology have increased the importance of translating research into practice [1]. Evidence-based practice is a problem-solving approach in which practitioners integrate the latest evidence into care after systematically searching for and critically appraising it, considering patients' preferences and values when making care-related decisions[2]. Research has shown that EBP improves patient outcomes and quality of care [3,4]. However, there is a gap between evidence generation and evidence translation into practice [5,6].

Nurses, as the largest group of healthcare professionals providing the majority of patient care, play a critical role in translating evidence into clinical practice. Evidence-based practice has been used in nursing research and practice since the 1990s. In subsequent years, interest has gradually grown and the concept of evidence-based nursing (EBN) has emerged by incorporation of evidence-based practice into nursing care [7]. When defining the roles and responsibilities of nurses in the Nursing Regulation published in our country in 2010, it was emphasised that nurses should plan their care based on evidence[8].

Intensive care units (ICU) are particularly important because they care for patients with a high risk of complications and mortality, and the care they provide is more complex and specialised than in other clinics [9]. Therefore, ICU nurses must have sufficient professional knowledge, experience, clinical competence and skills in working with complex equipment [10]. ICU nurses must make a clinical decision every five seconds in the ICU environment [11]. These decisions must be based on scientific evidence. To do this, nurses must follow the latest research and evidence to keep current and improve their professional competence [12]. Studies have shown that evidence-based nursing practice contributes significantly to the prevention of common complications such as pressure injuries [13] and infections [14,15] in the ICU and to the improvement of quality of care [3,16,17]. However, when we look at the current situation, we see a limited number of studies on the subject and that the transfer of evidence-based knowledge into practice by nurses, both nationally and internationally, is not at the desired level [5,6,18]. Looking at the studies conducted in Turkey, there is a limited number of studies investigating the attitudes of ICU nurses towards evidence-based nursing. Therefore, this study was designed to determine the attitudes and barriers of ICU nurses towards evidence-based nursing. The study sought answers to the following questions:

- What are the attitudes of ICU nurses towards evidence-based care?
- What barriers to the use of research do ICU nurses perceive?
- What factors are associated with the attitudes of ICU nurses towards evidence-based nursing?
- Is there a relationship between the attitudes of ICU nurses towards evidence-based nursing and the barriers they perceive?

2. Methods

2.1. Research Design

This research was carried out as a descriptive study.

2.2. Study population and sample

The study population consists of intensive care nurses working in a city hospital. There are 91 ICU

beds and 162 ICU nurses. The sample size is 126, calculated based on the mean score of the Scale of Attitude Towards Evidence-Based Nursing in the study conducted by Dikmen et al. (2018) [19]. in the G*Power 3.1.9.7 programme, with a significance level of 0.05, an effect size of 0.504 and 80% power. Considering the losses that might occur during the study, an attempt was made to reach all nurses. A total of 129 nurses who agreed to participate were included in the study. All of the targeted sample was reached. Inclusion Criteria: Working in the ICU for at least one year. Exclusion criteria: Those working in the intensive care unit on temporary duty.

2.3. Instruments

Study data were collected using the Nurse Information Form, the Attitudes Towards Evidence-Based Nursing Scale (ATEBNS) and the Barriers Scale (BS).

2.3.1. Nurse Information Form: The researchers developed this form in line with the literature [1,3,6,7] and it consists of 17 questions. The questionnaire includes questions regarding age, educational level, gender, marital status, professional working hours, hours worked in intensive care, intensive care unit experience, possession of an intensive care certificate, foreign language proficiency, participation in research-related courses after graduation, attendance at scientific meetings, willingness and status to engage in scientific research, and types of participation in scientific activities.

2.3.2. Attitude Towards Evidence-Based Nursing Scale (ATEBNS): This scale (ATEBNS) was developed by Ruzafa-Martinez et al. (2011). The Turkish validity and reliability of the scale was conducted by Ayhan in 2013 [20]. The scale consists of 15 items and three sub-dimensions. Eight items are positive and seven items are negative. The negative items are reversed and have a five-point Likert type. The lowest score on the scale is 15 and the highest is 75. The scale has no cut-off point and a scale score close to 75 indicates a positive attitude towards EBN. The reliability coefficient of the scale is α=.90. The reliability coefficients of the sub-dimensions are belief sub-dimension α=.86, intention to implement sub-dimension α=.69, emotions sub-dimension α=.71 [20]. In this study, it was found that Cronbach α: 0.826, belief sub-dimension α: 0.874, implementation intention sub-dimension α: 0.638 and emotions sub-dimension α: 0.649.

2.3.3. Barriers Scale (BS): The validity and reliability study of the scale developed by Sandra Funk (1991) was conducted by Yava et al. (2007). The scale consists of four sub-dimensions as nurse, practice, research and presentation. The research status of nurses and their perceived barriers were investigated according to their sociodemographic characteristics in the nurse sub-dimension. In the implementation sub-dimension, barriers encountered by the team, management, or institution while using evidence-based nursing (EBN) were examined. The research sub-dimension focused on nurses' perceptions of the barriers faced during the research phase in utilizing EBN. Finally, the presentation sub-dimension addressed the barriers perceived by nurses regarding the use and outcomes of research. The Cronbach alpha coefficient of the scale was found to be 0.87, with the nurse sub-dimension cronbach alpha coefficient0.80, the implementation sub-dimension cronbach alpha coefficient0.80, the research sub-dimension cronbach alpha coefficient 0.72 and the presentation sub-dimension cronbach alpha coefficient 0.65. Nurses' perceptions of barriers increased as the scale score averages increased [21]. In this study, the Cronbach alpha coefficient of the overall scale was 0.858, while the coefficients for the sub-dimensions were 0.75, 0.67, 0.70, and 0.63, respectively

2.4. Data Collection: Before the implementation of the study, the researcher explained the purpose of the study to the nurses and informed them. The data were collected by face-to-face interview.

2.5. Statistical Analysis

The data obtained from the study were analyzed using the Statistical Package for the Social Version 27.0 (SPSS) package programme. The suitability of the data to normal distribution was tested. "Independent Samples-t" test (t-table value) statistics were used to compare two independent groups in the data conforming to normal distribution. "Mann-Whitney U" test (Z-table value) statistics were used to compare two independent groups with measurement values in the data that did not have a normal distribution. "ANOVA" test (F-table value) statistics were used to compare three or more independent groups in data with normal distribution. "Kruskall-Wallis H" test (χ2-table value) statistics were used to compare three or more independent groups that do not have a normal distribution. "Spearman" correlation coefficient was used to examine the relationship between two quantitative variables that do not have a normal distribution. The results were expressed as mean±standard deviation, number and percentage.

2.6. Ethical Approval

Institutional permission and ethics committee approval were obtained from the hospital where the research was conducted (03/25.02.2022). The study was conducted in following the tenets of the Declaration of Helsinki. The purpose of the study, how the data would be collected, and how their personal information would be kept confidential were explained to the nurses who volunteered to

participate in the study. Data were collected with their written and verbal consent.

3. Results and Discussion

3.1. Results

Table 1. Distribution of individual and professional characteristics of nurses (n:129)

		N	%
Gender	Female	99	76.7
	Male	30	23.3
Marital Status	Single	101	78.3
	Married	28	21.7
Education Level	High School	14	10.9
	Associate Degree	12	9.3
	Undergraduate	90	69.8
	Master's Degree	13	10.1
Intensive Care Unit	Anesthesiaand reanimation ICU	50	38.8
	Internal Medicine ICU	16	12.4
	Cardiovascular Surgery ICU	9	7.0
	Coronary ICU	15	11.6
	Surgical ICU	12	9.3
	Neonatal ICU	16	12.4
	Pediatric ICU	11	8.5
Intensive Care Nursing Certificate	Holding a certificate	23	17.8
	Lacking a certificate	106	82.2
	mean	**sd**	**Min-Max**
Age	27.10	4.25	22-47
In Intensive Care Working Time	3.88	3.21	1-20
Years of Working In The Profession	4.79	3.90	1-27

The mean age of 129 nurses who participated in the study was 27.10±4.25. Among them, 76.7% were female, 78.3% were single, and 69.8% held a bachelor's degree. The mean number of years in the profession was 4.79± 3.90, while the mean number of years working in intensive care was 3.88± 3.21. Among the participants, 38.8% worked in an Anesthesiology and Reanimation ICU, and 82.2% did not hold an intensive care certificate(Table 1).

Table 2. Distribution of nurses' characteristics related to scientific and research activities (n:129)

		n	%
Foreign language level	Good	16	12.4
	Moderate	56	43.4
	Basic	57	44.2
Status of Taking Research Courses at the Postgraduate Level	Yes	22	17.1
	No	107	82.9
Awareness of Scientific Activities	I am aware	72	55.8
	I'm not aware	57	44.2
Previous Participation in Research Processes	Participated	54	41.9
	Did not participate	75	58.1
Willingness to take part in scientific research	Yes	79	61.2
	No	50	38.8
Participation in scientific activities	Participated	96	74.4
	Did not participate	33	25.6

Mode of participation in scientific activity	Paper Presentation	9	7.0
	Listener	113	87.6
	Officer	7	5.4

Findings showed that 44.2% of the nurses reported having a low level of foreign language proficiency,, 55.8% were aware of scientific activities, 61.2% expressed a desire to take part in scientific research, 74.4% participated in such activities, and 87.6% participated as a listener. It was determined that 82.9% of the nurses did not take a research course, 58.1% had not participated in a scientific research process before (Table 2).

Table 3. Mean Scores of Nurses' Attitude Towards Evidence-Based Nursing Scale and Barriers Scale

	Mean	Sd	Min-max	Cronbach's α
Attitude Towards Evidence-Based Nursing Scale	61.93	6.35	44-73 (15-75)*	0.826
Belief Sub-dimension	29.39	4.05	17-35 (7-35)*	0.874
Implementation Intention Sub-dimension	15.00	1.80	9-19 (4-20)*	0.638
Emotions Subscale	17.54	2.03	9-20 (4-20)*	0.649
Barriers Scale	2.67	0.52	1.53-3.94 (1-5)*	0.858
Nurse Subscale	2.49	0.70	1-4.75 (1-5)*	0.750
Application Sub-dimension	2.92	0.59	1-4.13 (1-5)*	0.675
Research Sub-dimension	2.84	0.87	1.17-5 (1-5)*	0.706
Presentation Sub-dimension	2.44	0.56	1-4.13 (1-5)*	0.634

* Minimum and maximum scores that can be obtained from the scale

The mean score of the Attitude Towards Evidence-Based Nursing Scale of the nurses participating in the study was 61.93±6.35. The mean score of the Belief subscale was 29.39±4.05, the mean score of the Intention to Practice subscale was 15.00±1.80, and the mean score of the Emotions subscale was 17.54±2.03. The mean score of the Barriers Scale of the nurses participating was 2.67±0.52, the mean score of the Nurse sub-dimension of the scale was 2.49±0.70, the mean score of the Implementation sub-dimension was 2.92±0.59, the mean score of the Research sub-dimension was 2.84±0.87 and the mean score of the Presentation sub-dimension was 2.44±0.56 (Table 3)

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Table 4. Comparison of the Mean Scores of the Scale of Attitude Towards Evidence-Based Nursing According to the Descriptive Characteristics of Nurses

		Belief	**Implementation intention**	**Emotions**	**Total**
	Mean±sd	Mean±sd	Mean±sd	Mean±sd	Mean±sd
Age 27.10±4.25					
r p		-0.001 0.988	0.129 0.145	0.087 0.330	0.036 0.684
Gender					
Female		29.51±3.92	15.04±1.78	17.69±1.98	62.23±5.96
Male		29±4.5	14.87±1.87	17.07±2.16	60.93±7.53
Z / t		Z=-0.275	Z=-0.501	Z=-1.364	t=-0.709
p		0.783	0.616	0.172	0.478

Marital Status					
Single		29.42±4	14.91±1.82	17.53±2.12	61.86±6.41
Married		29.29±4.28	15.32±1.7	17.57±1.71	62.18±6.23
Z / t		Z=-0.109	Z=-1.051	Z=-0.108	t=-0.086
p		0.913	0.293	0.914	0.932
Education Level					
High School[a]		26.5±4.52	13.86±2.18	16.86±1.92	57.21±6.70
Associate Degree[b]		30.5±3.55	15.33±1.61	17.17±3.01	63.00±4.47
Undergraduate[c]		29.66±4.04	15.06±1.72	17.59±1.98	62.30±6.57
Master's Degree[d]		29.62±2.93	15.54±1.71	18.31±1.18	63.46±3.57
χ^2 / F		χ^2=5.778	χ^2=5.508	χ^2=3.636	F=3.196
p		0.123	0.138	0.304	**0.026** a<c,d
Intrensive Care Unit					
Anesthesia and reanimation ICU[a]		28.90±3.83	15.06±1.54	17.32±1.97	61.28±5.98
Internal Medicine ICU[b]		28.50±3.90	14.19±1.87	18.19±1.56	60.88±5.91
Cardiovascular Surgery ICU[c]		33.44±2.65	16.78±1.72	17±3.46	67.22±5.78
Coronary ICU[d]		29.47±4.09	14.4±1.88	17.87±1.73	61.73±6.72
Surgical ICU[e]		27.42±4.91	14.42±2.39	16.33±2.27	58.17±8.63
Neonatal ICU[f]		31.37±3.76	15.19±1.47	18.31±1.7	64.87±4.84
Pediatric ICU[f]		28.73±3.07	15.64±1.5	17.82±1.54	62.18±4.67
χ^2 / F		χ^2=18.134	χ^2=13.784	χ^2=8.796	F=2.678
P		**0.006** e,b,a<c	**0.032** a<c	0.185	**0.018** e<c

Table 4 (continued). Comparison of the Mean Scores of the Scale of Attitude Towards Evidence-Based Nursing According to the Descriptive Characteristics of Nurses

		Belief	**Implementation intention**	**Emotions**	**Total**
	Mean±sd	Mean±sd	Mean±sd	Mean±sd	Mean±sd
Intensive Care Nursing Certificate					
Certified		29.7±3.55	15.35±1.43	17.22±2.39	62.26±4.92
Not certified		29.32±4.16	14.92±1.87	17.61±1.95	61.86±6.64
Z / t		Z=-0.316	Z=-0.844	Z=-0.42	t=0.274
p		0.752	0.398	0.674	0.784
Years of Experience Professional	3.88±3.21				
r		-0.034	0.051	0.029	-0.042
p		0.701	0.567	0.741	0.640
Years of Work in ICU	4.79±3.90				
r		0.053	0.014	0.066	0.058
p		0.054	0.877	0.454	0.513
Foreign Languange Level					
Good		29.69±3.36	15.13±1.71	17.94±1.73	62.75±4.7
Moderate		30.21±3.86	15.27±1.8	17.75±1.85	63.23±5.95
Basic		28.49±4.27	14.7±1.8	17.23±2.26	60.42±6.88
χ^2 / F		χ^2=5.640	χ^2=2.988	χ^2=1.674	F=3.010
p		0.060	0.224	0.433	0.053

Taking a Postgrauate Research Course					
Yes		29.91±3.89	15.36±1.81	17.59±2.26	62.86±6.67
No		29.28±4.09	14.93±1.79	17.53±2	61.74±6.3
Z / t		Z=-0.372	Z=-1.012	Z=-0.412	t=0.756
p		0.710	0.312	0.680	0.451
Awareness of Scientific Activities					
I am aware		29.82±3.72	15.22±1.6	17.46±1.98	62.5±5.32
I am not aware		28.84±4.39	14.72±2	17.65±2.12	61.21±7.44
Z / t		Z=-1.263	Z=-1.249	Z=-0.621	t=1.104
p		0.206	0.212	0.534	0.272
Previous Participation In Scientific Research					
Participated		29.37±3.58	15.28±1.65	17.5±1.78	62.15±5.59
Did not participate		29.4±4.38	14.8±1.88	17.57±2.21	61.77±6.88
Z / t		Z=-0.399	Z=-1.689	Z=-0.397	t=0.329
p		0.690	0.091	0.692	0.742
Willingness to Take Part In Scientific Research					
Yes		30.57±3.54	15.44±1.58	17.89±2.05	63.90±5.29
No		27.52±4.12	14.3±1.91	17.00±1.91	58.82±6.68
Z / t		Z=-4.017	Z=-3.282	Z=-2.914	t=4.788
p		**0.000**	**0.001**	**0.004**	**0.000**
Participation in scientific activities					
Participated		29.45±3.79	15.06±1.77	17.5±2.01	62.01±5.82
Did not participate		29.21±4.78	14.82±1.89	17.67±2.13	61.7±7.79
Z / t		Z=-0.16	Z=-0.82	Z=-0.55	t=0.212
p		0.873	0.412	0.582	0.833
Mode of Participation In Scientific Activity					
Paper Presentation [a]		31.56±3.17	15.67±1.73	18.44±1.59	65.67±4.74
Listener[b]		29.38±4.12	14.96±1.8	17.52±2.06	61.86±6.43
Officer[c]		26.71±2.0	14.86±1.95	16.71±1.89	58.29±4.75
χ^2 / F		χ^2=7.077	χ^2=1.511	χ^2=3.201	F=6.456
p		**0.029** c<a,b	0.470	0.202	**0.040** c<a,b

ICU: Intensive Care Unit, "Independent Samples-t" test (t-table value) statistics were used to compare two independent groups for normally distributed data. "Mann-Whitney U" test (Z-table value) statistics were used for the comparison of two independent groups with measurement values in non-normally distributed data. "ANOVA" test (F-table value) statistics were used in the comparison of three or more independent groups in data with normal distribution. "Kruskall-Wallis H" test (χ2-table value) statistics were used in the comparison of three or more independent groups that do not have normal distribution.

A comparison of the attitude towards evidence based nursing according to the descriptive characteristics of the nurses participating in our study is presented in Table 4. Analysis by educational level revealed that high school graduates had significantly lower attitudes toward evidence-based nursing compared to those with undergraduate or graduate education. (p=0.026). The mean scores of the belief sub-dimension of nurses working in cardiovascular surgery intensive care were significantly higher than those working in postoperative intensive care, internal medicine, anesthesiology, and reanimation intensive care units (p<.05). Nurses who wanted to take part in scientific research had a significantly higher total score and all sub-dimension scores of the ATEBNS (p<.05). Nurses who participated in scientific events either as a presenter or an attendee had a significantly higher total score and all sub-dimension scores (p<.05). No statistically significant correlation was found between the score of the ATEBNS and other variables (p>.05) (Table 4).

There was a weakly significant negative correlation between the barriers and attitude towards evidence based nursing (p<.05). Additionally, a weak but statistically significant negative correlation was found between the nurse sub-dimension and the scores of the total score, belief, implementation intention and emotions sub-dimension of the Attitudes Towards Evidence-Based Nursing Scale (p<.05). There was a moderately negative relationship between the barriers and attitude towards evidence based nursing (p<.05) (Table 5).

Table 5. Findings Related to the Relationship Between the Barriers Scale Score and the Attitude Towards Evidence-Based Nursing Scale Score

			BS				
			Nurse	Application	Research	Presentation	Total
ATEBNS	Belief	r	-0.241	-0.083	-0.098	-0.132	-0.176
		p	**0.006**	0.348	0.271	0.137	**0.047**
	Intention to Implement	r	-0.181	-0.127	-0.078	-0.135	-0.151
		p	**0.040**	0.152	0.381	0.127	0.087
	Emotions	r	-0.217	-0.031	-0.006	0.018	-0.060
		p	**0.013**	0.723	0.950	0.840	0.498
	Total	r	-0.287	-0.140	-0.086	-0.109	-0.186
		p	**0.001**	0.114	0.335	0.218	**0.035**

BS: Barriers Scale, ATEBNS: Attitude Towards Evidence-Based Nursing Scale. Spearman's correlation coefficient was used to analyze the relationship between two quantitative variables that do not have a normal distribution

3.2.1. Discussion

Intensive care units, where nurses care for high-risk patients, are high-risk units. Interventional procedures are common, and mortality and morbidity rates are high [22,23]. Therefore, it is essential to base ICU nursing care on evidence-based practice. This study, which assessed the attitudes of ICU nurses towards evidence-based nursing, found that they had high attitudinal scores towards evidence-based nursing. Most of the nurses who participated in the study said they were aware of scientific activities and participated in research processes. This finding may be effective in nurses' positive attitudes towards evidence-based nursing. When reviewing the literature, studies show that intensive care nurses' attitudes towards evidence-based nursing are moderate [24] and high [24,25]. With a positive attitude, nurses may be more willing to use evidence in their practice and more sensitive to the barriers they encounter. There are three sub-dimensions including beliefs, expectations, practice and emotions in the ATEBNS. When the results of our study were analysed, it was found that the highest mean sub-dimension score was in the belief sub-dimension. In previous studies, similar to our research, the belief sub-dimension score was higher than the other sub-dimension scores [26,27,28]. The belief sub-dimension expresses nurses' beliefs about the benefits of using evidence-based nursing in clinical trials. Nurses' beliefs about evidence-based practice are effective in integrating evidence into care. A high attitude on the belief sub-dimension indicates that nurses are willing to integrate evidence-based practice into their care [29,30]. In this study, the intention to practice and feelings sub-dimensions were also high. In this sense, the ICU nurses participating in the study may be ready to incorporate evidence-based practice recommendations into their care. As a result of our study, it was found that the mean score of nurses with a bachelor's degree and higher education was higher than that of nurses with a high school education. Other studies, which support the results of our research, have found that the score on the ATEBNS increases as the level of education increases [24,25,28,31]. Menekli et al. (2021) found that nurses' attitudes towards undergraduate and higher education levels were higher [28]. Another study of intensive care nurses also found that evidence-based nursing practice increased with higher levels of education [25]. Research and evidence-based nursing courses at undergraduate and postgraduate level influence attitudes. However, some undergraduate programmes allow students to gain experience in conducting research. Graduate students are involved in research process because they must complete their education with a thesis or project. Being involved in the research process may also influence attitudes towards evidence-based nursing.

This study found that nurses perceived a high level of barriers to using research evidence. Similar studies have shown that nurses perceive high barriers to using research evidence [6,32,33]. The different

results from the studies may be due to the differences in the institutions in which nurses work (facilities, support, diversity of roles and authorities, etc.) and the fact that these studies were carried out with samples of nurses working in different units. According to this study, nurses scored highest on the implementation and presentation sub-dimension of the barriers scale. A high score on the implementation sub-dimension refers to barriers faced by nurses from the institution/team and managers. This dimension includes workload, time constraints, lack of support from team members and lack of belief in the effectiveness of research findings in practice. The presentation sub-dimension refers to the barriers nurses perceive in accessing and interpreting research evidence. This barrier is interpreted as many nurses' lack of experience in searching databases, understanding scientific language, lack of critical skills and synthesising literature. Similarly, other studies have reported that the main barriers perceived by nurses are lack of team support [34, 35], workload [34], lack of time [18,26, 34,35] and lack of information [35]. In a study conducted in Turkey, nurses' barriers to using research were identified as not having enough time to read research, not feeling empowered to change practice, not having enough time to implement new ideas, and that research is usually published in a foreign language [36]. Similarly, in a study conducted by Cebeci et al (2019), the barriers perceived by nurses were identified as not having enough time to read research, not having enough time to implement new ideas, and nurses not seeing themselves as having enough power [37].

A weak negative relationship was found between the barriers and the attitudes towards evidence-based nursing scale. Accordingly, as nurses' perceived barriers to using research evidence increase, their attitudes towards evidence-based nursing decrease. A review of the literature found that a limited number of studies examined the relationship between the ATEBNS and BS. In the study conducted by Odabaşoğlu et al (2021), which supports our research findings, it was found that as the score of the ATEBNS increased, the perceived barriers to using research evidence in practice decreased [38]. As a result of the data obtained, it was seen that there was a negative and weakly significant relationship between the mean scores of the nurse sub-dimension of the ESL and the mean scores of the beliefs, intention to practice, emotions and total sub-dimension scores of the ATEBNS. The nurse sub-dimension includes barriers to nurse characteristics, research skills and awareness. The result obtained in this direction is interpreted to mean that as nurses' skills and awareness of research processes increase, their attitudes towards evidence-based nursing will also be positive. Improving nurses' skills and awareness of research processes is also possible through their active participation in these processes. In support of this proposition, our study found that nurses who wanted to participate in scientific research and those who attended scientific meetings as presenters and listeners had higher attitudes towards evidence-based nursing. In the study of Doğan et al. (2019), it was found that there was a significant relationship between nurses' attitudes towards evidence-based nursing and their participation in scientific meetings with papers, engaging in professional publications and conducting research [39]. Similarly, Dikmen et al.'s (2018) study of ICU nurses, found that nurses who completed scientific studies, followed evidence-based practices and scientific journals had higher attitudes towards evidence-based nursing [19].

3.2.2. Study Limitations

The study has some limitations. Firstly, the participants' responses to the data collection tools were based on their opinions. Finally, the study is limited to the sample of nurses working in the hospital where the research was conducted and the findings cannot be generalised to the whole country

4.Conclusions

This study found that nurses' attitudes toward evidence-based nursing were generally positive, despite the high level of perceived barriers to the use of research. It was found that the highest perceived barrier to the using scientific research in nursing practice was related to practice barriers. However, it was found that attitudes towards evidence-based nursing were related to perceived barriers for nurses. Nurses with undergraduate or postgraduate education who expressed a desire to conduct research and participated in scientific activities—either as presenters or attendees—demonstrated significantly more positive attitudes toward evidence-based nursing.

Future studies can increase the generalisability of the findings by expanding the study to include nurses in different hospitals and countries. Training and support programs can be developed to reduce nurses' barriers to evidence-based practice. Future research can be conducted with experimental designs that evaluate the effect of such intervention programs and examine how reducing barriers affects attitudes.

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6. References

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