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Knowledge, attitudes, and behaviors of nursing students toward evidence-based nursing

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Abstract

This descriptive and cross-sectional study aims to examine the knowledge, attitudes, and behaviors of nursing students toward evidence-based nursing. The study was carried out between March 1 and March 15, 2023, with the participation of 196 students who were studying in the nursing department of the Faculty of Health Sciences of a university and volunteered to participate. The data were collected by using the questionnaire form prepared by the researchers in line with the literature and the Knowledge, Attitudes, and Behaviors of Students in Evidence-Based Nursing Scale. Arithmetic mean, standard deviation, median and frequency (percent) values, independent sample t-test, Mann-Whitney U test, Kruskal-Walli's test, and Spearman correlation analysis were used to evaluate the data. In this study, it was determined that the knowledge, attitudes, and behaviors of nursing students toward evidence-based nursing were not at the desired level. In line with the findings, it is recommended that evidence-based nursing should be included more in the nursing education curriculum.

Keywords: Attitude; behavior; evidence; knowledge; nursing; student.

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1. Introduction

To give patients the greatest care possible, evidence-based nursing (EBN) bases its practice on knowledge of patient care [1-3]. EBN strives to offer the best care possible to satisfy the requirements of patients and their families. When making clinical decisions, EBN emphasizes looking for recent data, considering the requirements and preferences of the individual while making clinical evaluations, and using a problem-solving approach [2,4]. Evidence-based nursing, according to reports [2,5], grew out of the disconnect between conventional nursing care techniques used in clinics and the research done to enhance care.

The quality of nursing care can be raised by using the findings of research done both in Turkey and throughout the world in evidence-based nursing care. Individuals' hospital stays can be cut short and medical expenses can be minimized [2, 6,7]. Although it is claimed that the use of evidence in nursing practices is insufficient, nurses are willing to adopt evidence-based practice in the healthcare setting [8]. There is a claim that nurses are lacking in the areas of literature reviews, evidence assessments, critical analyses of research findings, and clinical application of research findings [9] . The literature on this subject, however, emphasizes how few nurses have the opportunity to discuss the research in an academic setting, how few opportunities there are for them to apply the research's findings in a clinical setting, and how little time they have to do so [10,11].

Before they graduate, nursing students must be equipped with the knowledge and abilities to study literature, assess evidence, critically evaluate research, and use research findings in clinical practice [5,12]. The ability to critically assess research will be developed through determining the knowledge, attitudes, and behaviors of student nurses about evidence-based nursing, structuring pertinent course material, teaching the use of evidence, and examining the literature [13].

1.1. Purpose of the study

The purpose of this study was to evaluate the knowledge, attitudes, and actions of nursing students regarding evidence-based nursing. The following questions were answered in this study:

- At what level are student nurses' knowledge, attitudes, and behaviors towards evidence-based nursing?
- What variables affect nursing students' understanding of, attitudes toward, and behaviors related to evidence-based nursing?

2. Materials and Methods

Students enrolled in a university's nursing program participated in this descriptive survey between March 1 and March 15, 2023.

2.1. Participants

The study employed the non-probability sampling technique. On the days that the research data were collected, the data collection forms were given out to the students in class. Data collection was finished with 196 students because five students only completed part of the survey. Male or female students who were 18 years old and older and were willing to take part in the study were enrolled. The study participation rate was 97.51%.

2.2. Data collection tools

A 12-question questionnaire form was used in the study to gather information about the sociodemographic characteristics and beliefs of nursing students regarding evidence-based nursing as well as the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale. The students provided verbal informed consent and participated voluntarily in the study.

2.2.1. Knowledge, Attitude, and Behaviors of Nursing Students Towards Evidence-Based Nursing Scale

The scale was designed by Jonhston et al. [14] to assess the understanding of, attitudes toward, and behaviors related to evidence-based practice of medical students at Hong Kong University. In 2010, Brown et al. modified the scale for nursing students. Karayağız Muslu et al. [15] confirmed the scale's reliability and validity. There are 26 items on this Likert-type scale, and there are four sub-dimensions: "Knowledge," "Attitude," "Future Use," and "Application." The scale's overall score is not calculated. Instead, the total score obtained from the sub-dimensions of the scale is averaged [14-16].

2.2. Data collection and ethics

Nursing students were interviewed face-to-face to gather the data. The students were informed that it was totally up to them whether or not to take part in the study, that their names would not appear on the questionnaire, and that the information gathered would only be utilized as part of the research. In about 15 minutes, the data collection process was completed.

2.3. Data analysis

The SPSS 21.0 package program was used to analyze the research data in a computer setting. Using Kolmogorov Smirnov, the normality test of the quantitative data was investigated. The data were evaluated using percentage calculations, independent sample t-tests, Kruskal Wallis tests, and Mann-Whitney U tests. Frequency, percentage, median, minimum, and maximum numbers were used to present the results. The threshold for significance was set at 0.05.

3. Results

In Table I, the sociodemographic details of the study participants' backgrounds and their opinions on evidence-based nursing are illustrated.

TABLE I
DISTRIBUTION OF THOUGHTS OF STUDENTS ON SOCIODEMOGRAPHIC AND EVIDENCE-BASED NURSING (N=196)

Characteristics			
Age	$\bar{X}$±SS* 21,20±2,21	Median (min-max) ** 21(18-40)	
		N	%
Gender	Female	164	83,7
	Male	32	16,3
Classroom	Grade 1	33	16,8
	Grade 2	31	15,8
	Grade 3	49	25,0
	Grade 4	83	42,3
Income status	Income less than expenditure	40	20,4
	Income equal to expenditure	138	70,4
	Income more than expenditure	18	9,2
Taking a scientific research course	Yes	81	41,3
	No	115	58,7
Following a journal related to nursing	Yes	21	10,7
	No	175	89,3
Knowing the definition of evidence-based nursing	Yes	148	75,5
	No	48	24,5
Knowing about the literature review	Yes	136	69,4
	No	60	30,6
Databases used when searching the literature ***	Google Scholar	194	99,0
	PubMed	87	44,4
	Cochrane	13	6,6

	Elsevierssciencedirect	11	5,6
	Ulakbilim	22	11,2
	Medline	11	5,6
	Magazines	43	21,9
	Other	10	5,1
Participation in congresses, symposiums, etc. related to nursing	Yes	131	66,8
	No	65	33,2
Reported barriers to evidence-based nursing ***	Not knowing how to review the literature	140	71,4
	Insufficient foreign language skills	141	71,9
	Work intensity	102	52,0
	Lack of staff	55	28,1
	Not knowing how to transfer research to the clinic	102	52,0
	Lack of support from the organization	74	37,8
	Nurses are isolated from the academic environment to discuss research	77	39,3
Reflections on the Benefits of Evidence-based Nursing in Practice ***	Improves the quality of care	182	92,9
	Makes care visible	136	69,4
	Increases professional satisfaction of my nurses	147	75,0
	Allows time management	104	53,1
	Minimizes medical errors	151	77,0
	Contributes to the professionalization of nurses	166	84,7
	I don't know	4	2,0

* Mean ± Standard deviation= $\bar{X}$±SD, **Median (Minimum - Maximum) ***Since there were multiple responses, the number N=196 exceeds the sample size.

In this study, it was determined that 83.7% of the students were female, 75.5% knew what evidence-based nursing was, 66.8% attended scientific gatherings like congresses and symposia, 89.3% did not read any professional nursing journals, 92.9% said that evidence-based nursing benefits included "increasing the quality of nursing care," and 71.9% cited "lack of foreign language skills" as a hindrance to evidence-based nursing. The pupils' average age was 21.20±2.21 years (Table I).

The mean scores obtained from the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale for the sub-dimensions and Cronbach's Alpha reliability coefficients are shown in Table II. The mean score from the Knowledge, Attitude, and Behaviors of Nursing Students Towards Evidence-Based Nursing Scale was 24.89±4.29 for the Knowledge subdimension, 24.04±7.06 for Attitude, 41.25±6.27 for Future Use, and 13.87±4.77 for Implementation (Table II).

The Cronbach's Alpha reliability coefficient for the Knowledge subdimension of the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale was 0.92, the Cronbach's Alpha reliability coefficient for the Attitude subdimension was 0.87, the Cronbach's Alpha reliability coefficient for the Future Use subdimension was 0.83 and the Cronbach's Alpha reliability coefficient for the Implementation subdimension was 0.86 (Table II).

TABLE II

SUBSCALE SCORE AVERAGES AND CRONBACH'S ALPHA RELIABILITY COEFFICIENTS FOR KNOWLEDGE, ATTITUDE, AND BEHAVIORS OF NURSING STUDENTS TOWARDS EVIDENCE-BASED NURSING SCALE

Sub Dimensions	**X̄± SD***	**Cronbach's Alpha reliability coefficient**
Information	24.89±4.29	0.92
Attitude	24.04±7.06	0.87
Future Use	41.25±6.27	0.83
Implementation	13.87±4.77	0.86

The comparison of the sub-dimension scores from the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale with some sociodemographic characteristics of the students and their thoughts about evidence-based nursing is presented in Table 3. The sub-dimension scores from the scale varied according to students' grades (p<0.034, χ2=8.667; p<0.000, χ2=19.595), taking a scientific research course (p<0.004, U=-2.865; p<0,000, U=-3,806; p<0,011, U=-2,527) attending scientific meetings such as congresses and symposiums, knowing the definition of evidence-based nursing (p<0,000, U= -4,769; p<0.006, U= -2,771), conducting literature review (p<0.003, U= -2,995) and following nursing journals (p<0.003, U= -2,996) (Table III).

TABLE III

COMPARISON OF SCORES FROM THE KNOWLEDGE, ATTITUDE, AND BEHAVIORS OF NURSING STUDENTS TOWARDS EVIDENCE-BASED NURSING SCALE WITH SOME SOCIODEMOGRAPHIC CHARACTERISTICS AND STUDENTS' THOUGHTS ON EVIDENCE-BASED NURSING

Characteristics		**Knowledge subdimension**	**Attitude subdimension**	**Future use subdimension**	**Implementation subdimension**
		X̄*±SD	***X̄*±SD***	***X̄*±SD***	***X̄*±SD***
Gender					
	Female	24,95±4,42	24,41±7,00	41,58±6,13	13,60±4,45
	Male	24,62±3,65	22,15±7,20	39,53±6,80	15,25±6,07
	test value	U=-,736	U=-1,773	t= 1,702	U=-1,320
	p-value	p=0,462	p=0,076	p=0,090	p=0,187
Grade					
	Grade 1	23,27±4,28	19,30±7,71	40,48±8,02	13,81±6,15
	Grade 2	23,87±5,06	23,51±7,32	41,58±5,42	12,83±4,50
	Grade 3	25,63±4,40	24,77±5,90	41,30±7,08	14,00±5,24
	Grade 4	25,49±3,72	25,69±6,57	41,39±5,29	14,21±3,92
	test value	**χ2=8,667**	**χ2=19,595**	χ2=,466	χ2=4,147
	p-value	**p<0,034**	**p<0,000**	p=0,926	p=0,246
Income status					
	Income less than expenditure	24,95±4,72	24,02±6,37	42,17±6,62	14,30±5,61
	Income equal to expenditure	24,92±4,27	24,26±7,11	41,16±6,22	13,84±4,64
	Income more than expenditure	24,61±3,66	22,38±8,24	39,83±5,88	13,16±3,88
	test value	χ2=,233	χ2=,1,189	χ2=,2,893	χ2=,456
	p-value	p=0,890	p=0,552	p=0,235	p=0,796
Taking a course on scientific research					
	Yes	25,97±3,78	26,27±6,26	42,23±5,41	14,48±3,92
	No	24,13±4,49	22,47±7,20	40,55±6,75	13,45±5,27
	test value	**U= -2,865**	**U= -3,806**	U= -1,517	**U=-2,527**

	p-value	**p<0,004**	**p<0,000**	p=0,129	**p<0,011**
Following a journal on nursing					
	Yes	24,38±3,59	22,47±8,29	41,76±5,89	16,28±4,05
	No	24,96±4,38	24,23±6,90	41,18±6,33	13,58±4,78
	test value	U=-,583	U= -1,107	U= -,024	**U= -2,996**
	p-value	p=0,560	p=0,268	p=0,980	**p<0,003**
Knowing the definition of evidence-based nursing					
	Yes	25,12±4,14	25,29±6,98	42,02±5,96	14,01±4,42
	No	24,18±4,72	20,20±5,88	38,87±6,66	13,45±5,76
	test value	U= -1,006	**U= -4,769**	**U= -2,771**	U= -1,348
	p-value	p=0,314	**p<0,000**	**p<0,006**	p=0,178
Knowing about literature research					
	Yes	25,13±4,04	25,03±6,90	41,50±5,92	13,94±4,35
	No	24,36±4,82	21,80±6,97	40,68±7,01	13,71±5,66
	test value	U= -,924	**U= -2,995**	t=0,839	U= -,911
	p-value	p=0,356	**p<0,003**	p=0,402	p=0,362
Participation in congresses, symposiums, etc. related to nursing					
	Yes	25,12±4,23	24,64±7,16	41,89±5,66	14,25±4,68
	No	24,43±4,42	22,83±6,64	39,95±7,23	13,12±4,91
	test value	U= -1,058	**U= -2,253**	t= 1,893	U= -1,541
	p-value	p=0,290	**p<0,024**	p=0,061	p=0,123

U: Mann-Whitney U test statistic. $\chi 2$: Kruskal Wallis test statistic. t: Independent sample t-test. *Mean ± Standard deviation= $\overline{X}$±SD. **Median (Minimum - Maximum).

4. Discussion

The results of this study, which was carried out to ascertain the knowledge, attitudes, and behaviors of students enrolled in a university's nursing program toward evidence-based nursing, were discussed in the literature.

In this study, the mean scores obtained from the Knowledge, Attitude, Future Use, and Implementation subscales of the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale were 24.89±4.29, 24.04±7.06, 41.25±6.27 and 13.87±4.77. According to a study by Çelik et al. [17], the mean score obtained from the Knowledge subscale of the "Knowledge, Attitudes, and Behaviors of Students in Evidence-Based Nursing Scale" was 22.14±4.78, Attitude subscale was 24.10±5.80, Future Use subscale was 37.49±7.56, and Implementation subscale was 16.69±5.86. These results are consistent with the findings of the study. In a study by Kalkım and Sağkal Midilli [18], the mean score from the Knowledge subscale was 24.10±4.04, the mean score from the Attitude subscale was 20.55±6.22, the mean score from the Future Use subscale was 40.41±5.75, and the mean score from the Implementation subscale was 17.14±5.18. It is believed that nursing students will be inspired to implement evidence-based practices in their careers once they have acquired the necessary competencies, such as literature review, critical thinking, applying research findings to practice, etc., during the education and training process [5].

According to the study's findings, it was found that the mean scores from the sub-dimensions of the scale varied depending on the characteristics of the students, such as their grades, whether they took scientific research courses, whether they went to scientific gatherings like congresses and symposiums, whether they were familiar with the definition of evidence-based nursing, whether they could conduct literature searches, and whether they had subscribed to nursing journals (Table 3). In a study by Kalkım and Sağkal Midilli [18], it was reported that the mean scores from the sub-dimension of the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale Midville differed according to the student's gender, taking an evidence-based nursing course, difficulty in accessing evidence, willingness to take part in research, attending a scientific meeting, and following

a scientific journal. According to the findings of Çelik et al. [17], there was a statistically significant difference in the mean scores from the sub-dimension of the Knowledge, Attitude, and Behaviors of Nursing Students towards Evidence-Based Nursing Scale depending on what grade students were in, taking courses on evidence-based nursing at the university, participating in evidence-based nursing education outside the university and requiring evidence-based nursing knowledge in professional practice. Even though the studies conducted resulted in different mean scores from the sub-dimension of the Knowledge, Attitudes, and Behaviors of Nursing Students on the Evidence-Based Nursing scale, it is believed that it is crucial to raise students' knowledge and awareness of the educational process they are receiving.

5. Conclusion

This study found that nursing students did not have the appropriate level of knowledge, attitudes, or actions regarding evidence-based nursing. Additionally, it was discovered that, depending on the characteristics of the students, such as grade, participation in scientific research courses, attendance at scientific gatherings like congresses and symposiums, knowledge of the definition of evidence-based nursing, proficiency with conducting literature research and following nursing journals, the sub-dimension scores obtained from the scale varied (p 0.05).

Third-grade students, those who took scientific research courses, participated in scientific gatherings like congresses and symposiums, knew what evidence-based nursing was, were able to scan the literature, and followed nursing journals all had higher sub-dimension scores on the scale. According to the study's findings, it is advised to include more evidence-based nursing topics in the nursing education curriculum, to raise students' knowledge and awareness of the topic, and to ensure their participation in academic events like symposiums and congresses.

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