JERN Journal of Education and Research in Nursing

Original Article
DOI:10.14744/jern.2023.52223
J Educ Res Nurs. 2024;21(1):72-77

The Relationship between Nursing Students' Attitudes Toward Evidence-Based Nursing and Their Critical Thinking Dispositions

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Abstract

Background: Critical thinking disposition is significant for nurses to carry out their care practices in line with accurate and up-to-date evidence.

Aim: The purpose of this study is to determine nursing students' attitudes toward evidence-based nursing and their critical thinking dispositions and to examine the relationship between them.

Methods: A descriptive correlational design was used in the study. The sample of the study consisted of a total of 163 2nd, 3rd, and 4th-year nursing students at a university in Türkiye. Data collection tools included a student information form, the evidence-based nursing attitude questionnaire (EBNAQ), and the critical thinking disposition scale (CTDS). Data were collected online through Google Forms and analyzed using descriptive, correlational, and linear regression analyses.

Results: The students' CTDS scores were 198.77 ± 39.71 and EBNAQ scores were 61.83 ± 9.78. It was determined that nursing students' attitudes toward evidence-based nursing and their critical thinking dispositions were at a high level and that there was a significant positive relationship between the students' attitudes toward evidence-based practice and their critical thinking dispositions ($r=0.595$, $P=0.001$). It was found that gender, school year, and critical thinking dispositions predicted students' attitudes toward evidence-based practice.

Conclusion: Evidence-based practice and critical thinking skills, which form the basis of clinical decision-making and quality care delivery, should be developed throughout nursing education and be imparted to nursing students. It is necessary to develop comprehensive teaching strategies and integrate them into the undergraduate program to help nursing students develop their critical thinking dispositions and attitudes toward evidence-based practice.

Keywords: Attitudes, Critical Thinking, Evidence-Based Practice, Nursing Students

Introduction

Nurses comprise a large group of the healthcare team and significantly affect the quality of care. Implementing evidence-based nursing care practices in delivering quality healthcare services is highly important.[1,2] Evidence-based implementation of nursing care practices is very important in obtaining the best care outcomes and increasing the quality of care, bringing innovation to care, achieving nurse/patient satisfaction, increasing professional autonomy and motivation, providing cost-effective care, and contributing to patient safety.[3-6] In recent years, it has been emphasized in national and international health policies that practices for quality and cost-effective health-care services should be based on evidence.[7,8]

Evidence-based practices include the process of systematical examination of research results, critical evaluation of the evidence obtained by considering the preferences of the individual, and deciding on the most appropriate evidence for clinical experience.[9,10] Therefore, nurses should have critical thinking skills, which are important in analyzing research results and deciding on the most appropriate evidence, to implement evidence-based practices.[9,11-13] Critical thinking in nursing affects the quality of care and helps nurses to make clinical decisions and reach appropriate evidence for care practices. At the same time, it significantly impacts professional development, the development of nursing practice, professionalism, and autonomy in the profession.[14-17] Critical thinking is an important skill in transferring the theoretical knowledge gained in nursing education into practice.[18]

This research was presented as an oral presentation at 6th International Academic Student Studies Congress on 23-24 April, 2022.

Cite this article as: Erden Melikoğlu S, Köktürk Dalcalı B, Dedeoğlu Demir B. The relationship between nursing students' attitudes toward evidence-based nursing and their critical thinking dispositions. *J Educ Res Nurs.* 2024;21(1):72-77.

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Received: April 29, 2022
Accepted: December 01, 2023
Publication Date: March 1, 2024

Among the studies examining the attitudes toward evidence-based practice in nursing students, it was determined that the attitudes of the students were high in the study of Erol et al.,[19] and it was moderate in the study of Akutay et al.[20] Among the studies carried out to determine the critical thinking dispositions of nursing students, Yıldırım and Çatal's[21] study found that students' critical thinking dispositions were low, and in the study of Taşçı et al.,[22] students' critical thinking dispositions were moderate. The development of students' critical thinking skills will be reflected in the quality of nursing care to be given in the clinical field, patient satisfaction, and the evidence-based implementation of nursing practices.[17] In this context, it is very important to determine strategies that will improve critical thinking skills during undergraduate education and to educate students on how to access current evidence and how to critically evaluate evidence. As can be seen in the literature, research into the relationship between evidence-based practice and critical thinking disposition in nursing students is limited.[10,12,23-25] It is thought that the results of the study will form a basis for planning the necessary strategies by evaluating nursing students' attitudes toward evidence-based practice and their critical thinking disposition and revealing the relationship between them.

Aim of the Study

The study was conducted to determine nursing students' attitudes toward evidence-based nursing and their critical thinking dispositions and to examine the relationship between them.

Research Questions

- What is the level of attitude toward evidence-based nursing among nursing students?
- What is the level of critical thinking disposition among nursing students?
- Is there a relationship between nursing students' attitudes toward evidence-based nursing and their critical thinking dispositions?
- What are the factors that predict nursing students' attitudes toward evidence-based nursing?
- Is critical thinking disposition one of the predictors of evidence-based practice?

Methods

Study Design

A descriptive correlational research design was used in the study.

Population and Sample of the Study

The population of the study consisted of a total of 177 2nd, 3rd, and 4th-year students from the Nursing Department of the Faculty of Health Sciences of a university in the spring semester of the 2020–2021 academic year. In the study, the entire population was targeted, so no sampling procedure was implemented. All the students who could be reached and volunteered to participate were included in the study, resulting in a completion with 163 nursing students and a sample representing 94% of the population.

Data Collection Tools

The study data were collected using a student information form, the evidence-based nursing attitude questionnaire (EBNAQ), and the critical thinking disposition scale (CTDS).

The Student Information Form

This form was developed by the researchers in line with the literature and included eight questions about students' age, gender, school year, the status of choosing the profession willingly, the status of receiving education about evidence-based practices in nursing and critical thinking, level of knowledge about evidence-based guidelines, and status of participating in scientific meetings.[26,27]

The Evidence-Based Nursing Attitude Questionnaire

This questionnaire was developed by Ruzafa-Martinez et al. to determine attitudes toward evidence-based nursing. The Turkish validity and reliability study of the scale was conducted by Ayhan et al.[28] The scale consists of a total of 15 items, including eight positive and seven negative statements, and three sub-dimensions (beliefs and expectations, intention of conduct, feelings toward evidence-based nursing). In evaluating the scale, items with negative expressions are reverse coded. A minimum of 15 and a maximum of 75 points can be obtained from this 5-point Likert-type scale. The scale does not have a cutoff point; a high score on the scale indicates a positive attitude toward evidence-based nursing. Cronbach's alpha coefficient of the scale was found as 0.90 in the validity and reliability study by Ayhan et al.,[28] and it was found 0.89 in this study.

The Critical Thinking Disposition Scale

This scale was developed by Semerci[29] as the "Critical Thinking Scale," but as critical thinking has various dimensions, the single structure of the scale was considered as a limitation. Later, the scale was revised and developed by Semerci,[29] and its name was changed to "Critical Thinking Disposition Scale." The scale comprises 49 items and five sub-dimensions (metacognition, flexibility, systematicity, tenacity-patience, and open-mindedness). The range of scores that can be obtained from this 5-point Likert-type scale varies between 49 and 245. As the total score on the scale, which has no cutoff point, increases, the tendency toward critical thinking also increases.[29] Cronbach's alpha coefficient of the scale was found as 0.96, and it was determined as 0.99 in this study.

Data Collection

Data were collected from nursing students between June and July 2021 of the spring semester through an online questionnaire. The online questionnaire, which was created on Google forms, was shared with the students outside of class hours. The students were informed about the research, and their informed consents were obtained by Google Forms. The questionnaire filling time took 5–8 min. The study was completed with 163 nursing students who agreed to participate in the research voluntarily.

Ethical Considerations

Before data collection, the approval of the İstanbul Arel University Ethics Committee (Approval Number: E-69396709-050.01.04-173984, Decision No: 13, Date: 18.06.2021) and the institutional permission of the Nursing Department of the Faculty of Health Sciences, where the study would be conducted, were obtained. The research was conducted in accordance with the principles of the Declaration of Helsinki. Scale permission was obtained from the researchers who made the scale a reality and reliability. Online data security is ensured that access is open only to researchers and by entering a security code.

Data Analysis

The NCSS (Number Cruncher Statistical System, Kaysville, Utah, USA) software was used for statistical analysis. Descriptive statistical methods (mean, standard deviation, median, frequency, percentages, and minimum and maximum values) were used to analyze the study data. The normality of the quantitative data was tested with the Shapiro–Wilk test and graphical examinations. Spearman correlation analysis was employed to evaluate the relationships between quantitative variables. Linear regression analysis was conducted to examine factors affecting the total score obtained from the attitudes toward Evidence-Based Nursing Questionnaire. Statistical significance was accepted as $P < 0.05$.

Results

The mean age of the nursing students in the study was 21.87 ± 2.55 years, 75.5% of them were female, 42.3% were 2nd-year students, 83.4% were found to have chosen the profession willingly, 43.6% had received education on evidence-based practices in nursing and critical thinking, 51.5% knew evidence-based guidelines used in planning care, and 71.8% had attended scientific meetings related to nursing (Table 1).

The mean score of the students from the overall EBNAQ was 61.83 ± 9.78, and the mean scores from the sub-dimensions were as follows: 29.15 ± 5.66, the beliefs and expectations toward evidence-based nursing sub-dimension; 15.81 ± 2.93, the intention of conduct sub-dimension; and 16.87 ± 3.56, the feelings sub-dimension (Table 2).

The mean score of the students from the overall CTDS was 198.77 ± 39.71, and the mean scores from the sub-dimensions were as follows: 12.44 ± 2.57, the open-mindedness sub-dimension; 53.75 ± 10.55, the systematicity sub-dimension; 53.75 ± 10.55, the flexibility sub-dimension; 31.61 ± 6.74, the tenacity-patience sub-dimension; and 56.64 ± 11.91, the meta-cognition sub-dimension (Table 2).

A moderate, positive, and statistically significant relationship was found between nursing students' scores from the overall EBNAQ and their scores from the overall CTDS ($r=0.595$, $P=0.001$) and its sub-dimensions, namely, open-mindedness ($r=0.577$, $P=0.001$), systematicity ($r=0.580$, $P=0.001$), flexibility ($r=0.582$ $P=0.001$), tenacity-patience ($r=0.516$, $P=0.001$), and metacognition ($r=0.548$ $P=0.001$) (Table 3).

Linear regression analysis was conducted to examine factors affecting the total score obtained from the EBNAQ. The overall score from the EBNAQ was included in the model as the dependent variable, while gender and school-year variables, which were found to be associated with the total score of the EBNAQ in univariate analyses, and the overall score of the CTDS were included in the model as independent variables. The model obtained as a result of the analysis was statistically significant, and the total score of the CTDS included in the model, female gender, and being a 4th-year student explained 46% in the variance in the total EBNAQ score (F [4, 158]=33.643, $P < 0.001$, R2=0.460). It was determined that a one-point increase in the overall CTDS score increased the overall EBNAQ score by 0.147 points (Beta [95% GA]=0.147 [0.118, 0.176], $P < 0.001$). The scores of female students were 5.757 points greater than the scores of male students (Beta [95% GA]=5.757 [3.098, 8,416], $P < 0.001$). The scores of 4th-year students were determined to be 4.779 points greater (Beta [95% GA]=4.779 [2.212, 7.347], $P < 0.001$) (Table 4).

Table 1. Descriptive characteristics of students (n=163)

Variable	Min.-Max.	Mean±SD
Mean age	18–35	21.87±2.55
	n	**%**
Gender		
Female	123	75.5
Male	40	24.5
School year		
2nd	69	42.3
3rd	34	20.9
4th	60	36.8
Choice of the profession		
Willingly	136	83.4
Unwillingly	27	16.6
Status of receiving education on evidence-based practice		
Yes	71	43.6
No	92	56.4
Status of receiving education on critical thinking		
Yes	71	43.6
No	92	56.4
Knowledge of evidence-based guidelines used in planning nursing care		
Yes	84	51.5
No	79	48.5
Participation in scientific meetings related to nursing		
Yes	117	71.8
No	46	28.2

Discussion

Evidence-based nursing practices increase the quality of care and provide cost-effective care delivery.[30] Determining the attitudes of nursing students toward evidence-based practice is very important in terms of the early development of strategies that will help them gain the necessary competencies to integrate evidence into practice. Nursing students need to have critical thinking skills to analyze and interpret scientific information and decide what the most up-to-date evidence is. Critical thinking disposition, which is an indispensable part of quality nursing care, is an important factor in supporting evidence-based nursing.[10,13]

It was seen that nursing students' attitudes and beliefs toward evidence-based nursing, their intention to implement evidence-based practices, and their feelings about the benefits of using evidence-based knowledge in practice were at a high level. In similar studies conducted in Türkiye, it was determined that the attitudes of nursing students toward evidence-based nursing were at a high level, which supports our study findings.[4,26,31,32] The high level of students'

Table 2. Distribution of mean scores from the overall and sub-dimensions of the evidence-based nursing attitude questionnaire and the critical thinking disposition scale (n=163)

The scales and sub-dimensions	Min.-Max.	Mean±SD
Overall EBNAQ score	41–75	61.83±9.78
Beliefs and expectations toward the evidence-based nursing	7–35	29.15±5.66
The intention of conduct toward the evidence-based nursing	8–20	15.81±2.93
The feelings toward the evidence-based nursing	4–20	16.87±3.56
Overall CTDS score	49–245	198.77±39.71
Open-mindedness	3–15	12.44±2.57
Systematicity	13–65	53.75±10.55
Flexibility	11–55	53.75±10.55
Tenacity-patience	8–40	31.61±6.74
Metacognition	14–70	56.64±11.91

Table 3. The relationship between the evidence-based nursing attitude questionnaire and critical thinking disposition scale (n=163)

The evidence-based nursing attitude questionnaire	
The critical thinking disposition scale	**Total score**
Open-mindedness	
r	0.577
P	**0.001****
Systematicity	
r	0.580
P	**0.001****
Flexibility	
r	0.582
P	**0.001****
Tenacity-patience	
R	0.516
P	**0.001****
Metacognition	
r	0.548
P	**0.001****
Overall score	
r	0.595
P	**0.001****

r= Spearman's correlation coefficient ***P*<0.01

Table 4. Determination of the factors affecting the overall EBNAQ score by linear regression analysis

Variables	Beta (95% confidence interval)	t	*P*
Constant	25.989 (19.626. 32.353)	8.066	<0.001*
CTDS	0.147 (0.118. 0.176)	10.060	<0.001*
Gender (female)	5.757 (3.098. 8.416)	4.276	<0.001*
School year (3)	2.222 (-0.852. 5.295)	1.428	0.155
School year (4)	4.779 (2.212. 7.347)	3.676	<0.001*

Dependent variable=overall EBNAQ score F(4. 158)=33.643. *P*<0.001 R^2=0.460
**P*<0.05. EBNAQ: Evidence-based nursing attitude questionnaire

attitudes toward evidence-based nursing is thought to stem from the awareness raised by the Nursing Regulation[33] that was put into practice in Türkiye in 2010, which suggested that nursing care should be planned and implemented based on evidence and that evidence-based nursing should be included in the nursing curriculum and scientific programs. In similar studies conducted abroad on this topic, it was determined that the knowledge, attitudes, and behaviors of nursing students about evidence-based practice were at a high level, which supports our study findings.[12,34,35] In recent years, it is thought that awareness about evidence-based practice has increased with the emphasis by national and international health policies and nursing institutions that quality care can be given in line with the most up-to-date evidence. Students' interest in evidence-based nursing and their high-level attitudes toward it will enable nursing care to be carried out based on scientific knowledge, far from traditional practices, thereby improving patient outcomes and increasing the quality of care.

In our study, it was observed that nursing students had a high level of critical thinking disposition. Only one study conducted with nursing students using the same scale was found in the literature. It was observed that the mean scores of the students in our study from the CTDS were higher than those in the study by Uyanık and Tanrıverdi.[36] However, in the results of international and national research using different scales to determine the critical thinking dispositions of nursing students, the students were found to have moderate or low levels of critical thinking dispositions.[15,27,37-39] It is thought that critical thinking disposition, which is an important factor in clinical decision-making and providing quality care, is a basic skill that should be developed in nursing students.

It was seen that as nursing students' critical thinking dispositions increase, their attitudes toward evidence-based nursing also improve. At the same time, it was established that the factors predicting students' attitudes toward evidence-based nursing included critical thinking disposition, education level, and gender. No study was found on this subject in Türkiye. In a study conducted by Kim et al.[12] in Korea with senior nursing students, it was found that there was a relationship between students' knowledge on and attitudes and behaviors toward evidence-based practice and their critical thinking disposition. In the study, critical thinking disposition predicted knowledge, attitudes, and behaviors toward evidence-based practice, but variables such as age and gender did not.[12] In their study with nursing students, Choi et al.[23] determined that there was

a positive and significant relationship between students' attitudes toward evidence-based practice and critical thinking dispositions. These findings support our study findings. Some of the examples of studies conducted with nurses on this subject were as follows. Taşçı[25] conducted a study with nurses working in surgical clinics and reported a relationship between critical thinking disposition and attitudes toward evidence-based nursing. Kim and Lee[24] found that there was a positive relationship between nurses' evidence-based practice competency and their critical thinking dispositions. Kim et al.[10] found there was a significant positive relationship between nurses' evidence-based knowledge, attitudes, and behaviors and their critical thinking dispositions. The findings of these studies conducted with nurses are also consistent with our research findings.[10,24,25]

It has been reported in the literature that there is a positive relationship between evidence-based practice and critical thinking disposition. It is argued that critical thinking disposition is necessary for evidence-based practice since the latter involves examining research results systematically, evaluating the evidence obtained critically, and deciding on the most appropriate evidence.[9-13] Our study findings support the findings in the literature and draw attention to the importance of developing critical thinking skills and gaining attitudes toward evidence-based practice in nursing education. It is believed that when nursing students gain these skills, they will be good consumers of research, decide on the best evidence obtained from research, and thus contribute to the delivery of quality care.

Limitations

The study is limited to students who began studying in the 2020–2021 education year at the Nursing Department of the Faculty of Health Sciences in Türkiye. The results cannot be generalized to all nursing students. Causality could be explained to a limited extent due to the descriptive and correlational design of the study.

Conclusion

The study revealed that nursing students exhibited high levels of attitudes towards evidence-based nursing, and as their critical thinking dispositions increased, their attitudes toward evidence-based nursing improved. Furthermore, critical thinking disposition, female gender, and being a 4th-year student were variables that significantly predicted students' attitudes toward evidence-based practice.

Evidence-based practice and critical thinking skills, which form the basis of clinical decision-making and quality care delivery, should be developed throughout nursing education and imparted to nursing students. To increase nursing students' critical thinking dispositions and their knowledge on, attitudes toward, and awareness about evidence-based nursing practices, they should be supported in terms of using teaching methods that will improve critical thinking skills in the education process, participation in scientific activities, development of research skills, following research results, and integrating the latest evidence into clinical practice. Moreover, it is recommended to investigate factors affecting students' attitudes toward evidence-based practice comprehensively in a larger sample group.

Ethics Committee Approval: The approval of the İstanbul Arel University Ethics Committee (Approval Number: E-69396709-050.01.04-173984, Decision No: 13, Date: 18.06.2021) was obtained for this study.

Informed Consent: The students were informed about the research, and their informed consents were obtained by Google Forms.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – S.E.M., B.K.D., B.D.D.; Design – S.E.M., B.K.D., B.D.D.; Supervision – S.E.M., B.K.D.; Fundings – S.E.M., B.K.D., B.D.D.; Materials – S.E.M., B.K.D., B.D.D.; Analysis and/or Interpretation – S.E.M., B.K.D., B.D.D.; Literature Review – S.E.M.; Writing – S.E.M., B.K.D., B.D.D.; Critical Review – S.E.M., B.K.D., B.D.D.

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

Funding: The authors declared that this study has received no financial support.

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