

Original Article

Determination of the Attitudes of Nurses and Nursing Students towards Evidence-Based Nursing: A Cross Sectional Study

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Abstract

Objective: This research was planned in order to evaluate the attitudes of nurses and nursing students towards evidence-based nursing practices. Today, factors such as the management of information, the change in health care needs and preferences, and the prolongation of life have necessitated the use of evidence-based practices in nursing. This research was planned as a descriptive study.

Methods: This study was conducted with nurses and intern nursing students. Data were collected with the Introductory Information Form and the Evidence-based Nursing Attitude Questionnaire (EBNAQ). Data were analyzed by number, percentage, Mann-Whitney U test, Kruskal-Wallis test and t test.

Results: The mean score of EBNAQ was 61.25 ± 8.105 for nurses and 61.94 ± 7.763 for students; The difference between the scores of the two groups was not significant ($t = -.522$; $p = 0.602$). Sub-dimension mean scores of nurses and students were 29.19 ± 0.352 and 29.56 ± 0.524 for beliefs and expectations towards EBN, 15.60 ± 0.218 and 15.70 ± 0.371 for, intention of conduct towards EBN, 16.46 ± 0.233 and 16.68 ± 0.437 for feelings towards EBN, respectively. It was found that the place of duty, reading professional publications regularly, participation in scientific meetings, membership in professional associations, conducting research were crucial among the nurses, whereas gender factor affected the scores of EBNAQ in students ($p < .05$).

Conclusions: EBNAQ scores of students and nurses were found to be good and there was no difference between the mean scores of nurses and students. Although the level of Evidence-Based Practice (EBP) belief is high in nurses and students, the intention to practice is at a lower level. The EBP attitude of female nursing students is more positive than that of males. Reading professional publications regularly, participating in scientific meetings and in clinical research activities improve the evidence-based nursing practice attitude in nurses.

Keywords: Nurse; evidence-based nursing, student, attitude.

Introduction

Today, factors such as ever-changing health care needs and preferences, and prolonging life expectancy necessitated the use of EBP. Evidence-based practice is a problem-solving approach that provides access to the most up-to-date information available, considering patient needs while evaluating in the clinic,

increasing the quality of care, reducing the length of hospital stay and lowering the cost of patient care (Behague et al 2009; Karayagiz Muslu et al 2015; Karki et al 2015). The worldwide expansion of the EBP movement has brought new public health demands and the creation of evidence-based policies with it (Behague et al 2009; Karki et al 2015).

Evidence-based practice should be supported and encouraged, and nurses should be confident in these skills (Thiel, Ko & Turner 2019).

Evidence-Based Nursing, on the other hand, is the use of scientific evidence in nursing practice in order to provide the best care to patients (Dicenso, Ciliska & Guyatt 2015; Andrae, Aune & Braend 2016). EBN emerged due to the gap between research and traditional nursing practices carried out in the clinic. Evidence from studies with EBN in our country and around the world can be transferred to the health-care setting. Therefore, clinical results can be improved, care can be standardized, hospitalization times can be shortened, the quality of nursing care can be enhanced and the cost of care can be reduced (Schaefer & Welton 2018). EBP has also become a new alternative for nurses to gain autonomy and obtain the necessary authority. Despite the international emphasis on EBP and the studies documenting its value, it is known that the use of evidence in nursing practice is not sufficient (Adib-Hajbaghery 2009; Majid et al 2011; Melnyk & Fineout Overholt 2011; Karki et al 2015). Studies have shown that nurses' lack of knowledge and skills regarding the use of EBP, perceiving EBP as temporal, and seeing it as a workload lead nurses to not reflect evidence-based practices to the care they provide (Karayagiz Muslu et al 2015; Camargo et al 2018; Mena Tudela et al 2018).

Important points for reflecting EBN to practice include integrating EBP into the nursing education curriculum, developing students' critical approach skills towards research and creating a culture of scientific knowledge usage in practice (Evcimen & Iscan Ayyildiz 2019). However, previous studies reported that the attitudes and perceptions of the practitioners are important in reflecting the EBP in nursing (Estabrooks et al 2007). In the study of Dugan (2019), it is stated that nurses have good ability to analyze evidence. In two systematic reviews examining the use of research results in practice, it has been shown that the most important individual characteristic affecting research use is "attitude towards research" (Estabrooks et al 2003; Squires et al 2011).

In this study, it was aimed to evaluate the attitudes of both nurses and nursing students towards evidence-based nursing. The findings will provide data on the issues that need to be addressed in the development of an EBP culture in the clinic. For this purpose, the following questions were designed.

- What are the individual and professional characteristics of the nurses and students?
- Is there a difference between the scores of EBNAQ of the nurses and students?
- What are the factors affecting the scores of EBNAQ of the nurses and students?

Methods

Design: This research was planned as a descriptive and cross-sectional study to evaluate the attitudes of nurses and nursing students towards evidence-based nursing and the factors affecting it.

Population: The population of the research consisted of nurses working in a hospital of a foundation university and students studying at the School of Health Sciences. No criteria were determined for sample selection and all nurses working in surgical units were included in the study. The research was completed with 140 nurses working in the surgical wards, operating room and adult surgical intensive care units of the hospital, who agreed to participate in the study.

Among the students, the final year students (N=50) of the Nursing Department, which gave education with the classical curriculum in the Spring semester of the 2018-2019 academic year, constituted the study group. In the first three years of the education period at the school, basic sciences and theoretical and applied vocational courses are given. Internship program is administered in the 4th grade in the nursing curriculum. In both semesters, practice is carried out for a total of 24 hours, three days a week, and it is necessary to take 2 hours of theoretical intern courses and two elective courses per week. EBN is also included in the fourth grade lessons in the school curriculum. Furthermore, evidence-based applications are integrated into the content of all vocational courses starting from the first year. Since it takes time for the EBP philosophy to settle in students, it is expected that they will have developed an attitude on this subject during the internship period. Therefore, intern

students were taken into the sample and it was desired to compare their attitudes with the currently working nurses. Fifty of 58 fourth grade students were included in the research sample (participation rate 86.2%).

Both graduate nurses and senior nursing students who were nearing graduation were included in the study. Although these two groups constitute different categories, they are close to each other in terms of EBP. Among the students, those who were close to graduation were selected. This group will be expected to use EBPs in practice within a short period of time. On the other hand, when we look at the nurse population, it is observed that some of them have received EBP terminology in formal education, but those with many years of experience have received it inadequately. Thus, when both groups are examined, negative attitudes of students towards the curriculum and nurses' negative attitudes towards in-service training can be revealed.

Data Collection: The data were collected between May-June 2019 with the data collection form prepared by the researchers using the literature (Camargo et al 2018; Ruzafa Martinez, Lopez Iborra & Madrigal Torres 2011; Ruzafa Martinez et al 2013). In the first part of the data collection form, there were questions about Introductory Features. There were ten questions in the first part of the nurse form and seven questions in the student form. In the second part, "Evidence-Based Nursing Attitude Questionnaire (EBNAQ)" took place. This questionnaire was developed by Ruzafa-Martinez et al (2011), Turkish validity and reliability were evaluated by Ayhan, Kocaman & Bektas (2015). The questionnaire consisted of a total of 15 items and included three sub-dimensions: beliefs and expectations, intention to implement, and emotions. Eight of the scale items were positive (1st, 2nd, 5th, 7th, 9th, 11th, 13th and 14th items) and seven of them were negative (3rd, 4th, 6th, 8th, 10th, 12th and 15th items) statements. In the evaluation of the scale, negative items were coded in reverse. A minimum of 15 and a maximum of 75 points can be obtained from the scale. A high score on the scale indicates a positive attitude. In the validity and reliability study, the Cronbach α coefficient of the scale was $\alpha=0.90$ (Ayhan, Kocaman & Bektas 2015), our finding was $\alpha=0.877$ in this study.

Data Analysis: Data were evaluated using the SPSS 22.0 (IBM Inc., Armonk, NY, USA) package program. Number (n), percentage (%), mean and standard deviation (SD) were used as descriptive statistical methods. The conformity of the data to the normal distribution was evaluated with the Shapiro-Wilk test. The Mann-Whitney U test was used to compare the quantitative data between pairwise independent groups, since the data did not conform to the normal distribution. The Kruskal-Wallis test was used to compare the quantitative data between three and more independent groups, and the t-test was used to evaluate the difference between the mean of two independent groups. Statistical significance was considered at the $p < .05$ level for all variables.

Ethical Considerations: Before starting the study, the ethics committee- number 101 approval numbered 10840098-604.01.01-E.3642 and dated 30.01.2019 was obtained. The institutional permission was issued on February 15, 2019. Permission was obtained from the authors for the use of the questionnaire, written and verbal informed consent was obtained from the nurses and students who wanted to participate in the study.

Results

Identification of participants

The average age of the nurses was 25.85 ± 4.97 and the average age of the nursing students was 22.32 ± 1.46 . Women comprised of 74.3% of the nurses and 90% of the students, and 82.1% of the nurses had a bachelor's degree while 39.3% worked for 2-5 years. Of all the nurse participants, 64.3% worked in the ward, 12.1% worked in the operating room and 23.6% worked in the intensive care unit; 64.3% read professional publications regularly, 61.4% attended scientific meetings, 35% were members of professional associations, and 57.9% conducted research.

EBNAQ scores of nurses and interns

The average of total score obtained in EBNAQ was 61.25 ± 8.10 (37-75) for nurses and 61.94 ± 7.76 (45-75) for intern students. The difference between the average scores of the two groups was not statistically significant ($t=-.522$; $p=0.602$). When the EBNAQ sub-dimension scores are examined, "beliefs and

expectations towards EBN” sub-dimension average score was 29.19+0.35 in nurses and 29.56+0.52 in students.” Intention of conduct towards EBN” sub-dimension average score was 15.60+0.218 for nurses and 15.70+0.37 for students. The average scores of “feelings towards EBN” sub-dimension was 16.46+0.23 for nurses and 16.68+0.44 for students.

Factors affecting the EBNAQ of nurses and intern students

The scores of the nurses who read professional publications regularly were found to be statistically significantly higher than those who did not ($t=5.407$; $p=0.000$). Similarly, those who attended the scientific meeting had a higher score than those who did not ($t=6.502$; $p=0.000$). The scores of those who were members of professional

associations were found to be statistically significantly higher than those who were not members ($t=2.817$; $p=0.006$), and those who did research had a higher score than those who did not ($t= 5.935$; $p=0.000$). It was found that the other characteristics of the nurses did not affect the EBNAQ score.

It was founded that only the gender factor affected the EBNAQ scores of the students ($t=0.954$; $p=0.342$; $p<.05$). The mean score of the female students was higher than that of the males. It was noted that the departments where the students did their internship, reading professional publications regularly, participation in scientific meetings, and membership in professional associations did not have a statistically significant effect on the average score ($p >.05$).

Table 1. Identification of Participants

Characteristics	n	Nurse		Intern student	
		%	n	%	
Gender					
Female	104	74.3	45	90	
Male	36	25.7	5	10	
Average age (M and SS)	25.85	4.97	22.32	1.46	
Education level					
Associate Degree	10	7.1	-	0	
Bachelor's degree	115	82.1	50	100.0	
Master's degree	15	10.7	-	0	
Working duration in the profession					
0-1	47	33.6	50	100.0	
2-5	55	39.3	-	-	
6-10	19	13.6	-	-	
11+	18	12.9	-	-	
Working duration in this department					
0-1	71	50.7	50	100.0	
2-5	47	33.6	-	-	
6-10	15	10.7	-	-	
11+	7	5	-	-	
Department					
Inpatient clinic	90	64.3	22	44.0	

Operating room	17	12.1	13	26.0
Intensive Care Unit	33	23.6	15	30.0
Follow-up professional publications				
Yes	90	64.3	30	60.0
No	50	35.7	20	40.0
Participation in scientific meetings				
Yes	86	61.4	21	42.0
No	54	38.6	29	58.0
Membership in professional association				
Yes	49	35	6	12.0
No	91	65	44	88.0
Conducted research				
Yes	81	57.9	28	56.0
No	59	42.1	22	44.0

Table 2. Comparison of mean scores of EBNAQ of the nurses according to their definitive characteristics (N=140)

Variable	n	M	SD	min-max	analysis
Gender					
Male	36	60.3	8.65	44-75	t=0.954; p=0.342
Female	104	61.63	7.91	37-75	
Education level					
Associate Degree	10	60.70	11.25	37-75	KW=0.289; P= 0.591
Bachelor's degree	115	60.57	7.48	44-75	
Master's degree	15	66.80	8.80	45-75	
Working duration in the profession					
0-1	47	63.00	7.79	45-75	KW=7.292; P= 0.063
2-5	55	60.20	7.87	44-75	
6-10	19	57.89	7.64	37-70	
11+	18	63.27	9.21	45-75	
Working duration in this department					
0-1	71	61.32	7.99	45-75	KW=3.455; P=0.327
2-5	47	61.21	6.91	44-75	
6-10	15	58.60	10.91	37-75	
11+	7	66.42	9.07	52-75	
Department					
Inpatient clinic	90	60.12	7.66	37-75	KW=7.291; P=0.026

<i>Operating room</i>	17	60.70	9.80	45-75	
<i>Intensive Care Unit</i>	33	64.60	7.64	45-75	
Follow-up professional publications					
<i>Yes</i>	90	63.76	7.46	45-75	t=5.407; p=0.000
<i>No</i>	50	56.72	7.24	37-75	
Participation in scientific meetings					
<i>Yes</i>	86	64.35	6.96	45-75	t=6.502; p= 0.000
<i>No</i>	54	56.31	7.36	37-71	
Membership in professional association					
<i>Yes</i>	49	63.81	7.30	45-75	t=2.817; p=0.006
<i>No</i>	91	59.86	8.21	37-75	
Conducted research					
<i>Yes</i>	81	64.35	7.09	45-75	t=5.935; p= 0.000
<i>No</i>	59	56.98	7.48	37-73	

Table 3. Comparison of mean scores of EBNAQ of the intern students according to their definitive characteristics (N=50)

Variable	n	M	SD	min-max	analysis
Gender					
<i>Male</i>	5	51.00	8.15	45-65	U=28.500 Z=-2.722 P=0.006
<i>Female</i>	45	63.15	6.77	37-75	
Department					
<i>Inpatient clinic</i>	22	62.04	7.16	48-75	KW=1.286 P=0.831
<i>Operating room</i>	13	60.76	9.19	45-75	
<i>Intensive Care Unit</i>	15	62.80	7.71	46-75	
Follow-up professional publications					
<i>Yes</i>	30	62.80	8.08	45-75	U=255,00 Z=-.893 P= 0.372
<i>No</i>	20	60.65	7.25	48-75	
Participation in scientific meetings					
<i>Yes</i>	21	62.52	9.59	45-75	U= 269,00 Z= -.699 P=0.484
<i>No</i>	29	61.51	6.26	48-75	
Membership in professional association					
<i>Yes</i>	6	60.83	13.16	45-75	U=126,00 Z= -.179 P=0.858
<i>No</i>	44	62.09	6.95	46-75	
Conducted research					
<i>Yes</i>	28	62.46	8.75	45-75	U=283.00 Z=-.490 P= 0.624
<i>No</i>	22	61.27	6.43	48-75	

Discussion

The use of evidence-based nursing in practice contributes to increasing the quality of care, improving patient care outcomes, and enhancing nurse and patient satisfaction (Ayhan, Kocaman & Bektas 2015). By providing basic data with the determination of EBNAQ scores of nurses and interns, priority issues will be determined in the development of EBP culture in the clinic.

In this study, nurses' average EBNAQ score was 61.25 ± 8.10 . When the previous studies are reviewed, the average EBNAQ score of the nurses was 46.36 ± 3.95 in the study of Yilmaz, Duzgun & Dikmen (2019), 51.33 ± 5.18 in the study of Sadi Sen and Yurt (2021). Our study findings revealed that EBNAQ scores are slightly higher than previous studies, and it can be suggested that nurses have more positive attitudes. At the same time, our positive findings are in line with the findings of some researchers (Karakoc Kumsar, Polat & Afsar Dogrusoz 2020; Asi Karakas et al 2021). It was assumed that factors such as the status of the institution where the study was conducted, the effective conduct of on-the-job training, the encouragement of nurses to do research in the institution, and the fact that the research sample consisted of a young nurse population may have a role in the high scores of EBNAQ.

Determining nursing students' attitudes towards EBP is crucial in terms of early development of strategies for the use of EBP in clinical practice. Therefore, the first step to accelerate the EBP process is to evaluate the attitudes of nursing students towards EBP (Ayhan, Kocaman & Bektas 2015). In this study, the average EBNAQ score of nursing students was 61.94 ± 7.76 (45-75). Considering that the total score that can be obtained from the scale ranges from 15 to 75, it can be stated that the attitudes of nursing students towards EBP are at a good level. Studies also support this finding (Ryan 2016; Evcimen & Iscan Ayyildiz 2019). It was 61.65 ± 9.30 in the study of Evcimen & Iscan Ayyildiz (2019) and 60.7 ± 8.02 in the study of Basdas & Ozbey (2020), which is similar to our findings. It is reported that most of the students are aware of Evidence-Based Nursing Practices, they believe in its

importance and need it. Nursing students' attitudes towards EBN are at a good level; It is thought that it is due to the emphasis on EBP in nursing education in recent years, the discussion of scientific research in nursing courses and the encouragement of nursing students to participate in scientific activities. Versatile teaching strategies integrated with the clinic lead to positive developments in evidence-based practice knowledge, skills and attitudes (Young et al 2014).

When the EBNAQ sub-dimension scores of nurses and interns were examined, it was found that there was no statistically significant difference between the two groups in all sub-dimensions. In fact, what is expected is that the attitude of the nurses is higher than that of the interns. This finding suggests that the student population is as interested in EBP as the nurse clinicians during the education process. Although both groups had a high level of attitude in the dimension of "beliefs and expectations towards to EBN", it was observed that the same level could not be achieved in the dimension of "Intention of conduct towards EBN". Similar findings have been found in the literature (Bashar 2019; Yilmaz, Duzgun & Dikmen 2019; Sadi Sen & Yurt 2021). Scurlock Evans, Upton & Upton (2014) reported that evaluating beliefs and attitudes towards EBN alone cannot lead to a change in behavior towards EBP (Upton & Upton 2014; Scurlock Evans, Upton & Upton 2014). Intention is an important determinant in transforming behavior. In this study, it is thought that the low intention of nurses may be due to situations such as in-service training, leadership, participation in research, and not witnessing examples of good practice for EBN in the institution where they work.

There are many factors that can affect nurses' attitudes towards EBN. In our study, it was found that the place of duty of the nurses affected the EBNAQ score ($p < .05$). The average score of those working in the intensive care unit was found to be statistically higher than the score of those working in the operating room and surgical clinics ($p < .05$). However, in the study of Erisen, Yesildal & Akman Dombekci (2019), it was found that nurses working in internal

medicine-related departments had a more positive attitude than nurses working in intensive care units. Contrary to this study, in the study conducted by Yilmaz, Duzgun & Dikmen 2019 there was no difference between the EBNAQ average scores according to the units studied.

In our study, it was found that the research status of the nurses affected their EBN attitudes ($t=5.935$; $p=0.000$). As in our study, in Sadi Sen & Yurt (2021), the EBP attitude of nurses participating in research activities was found to be more positive. In the study of Erisen, Yesildal & Akman Dombekci (2019), it was reported that the participants who conducted scientific research had more positive feelings towards EBN and their intention to practice evidence-based nursing was higher than those who did not. In addition, the EBN feelings of those who participated in scientific meetings in nursing were found to be statistically significantly more positive than those who did not attend scientific meetings.

In our study, it was found that reading professional publications regularly ($t=5.407$; $p=0.000$), attending scientific meetings ($t=6.502$; $p=0.000$) and being a member of a professional association ($t=2.817$; $p=0.006$) affected EBN attitude level positively. In a study, it was reported that nurses who read professional publications regularly have a more positive EBN attitude, and that reading publications regularly positively affects the intention of conduct towards EBN (Yilmaz, Duzgun & Dikmen 2019). Since nurses who follow professional publications are more likely to reflect the results of research to the clinical field, it is expected that their attitudes towards evidence-based nursing are high.

In this study, it was found that other characteristics of nurses such as gender, education and working year did not affect the EBNAQ score. In the study conducted by Sadi Sen & Yurt (2021), it was found that the attitudes differ according to the level of education, and it was reported that the scores of those who did master's and doctorate degrees were higher than those who did not (Sadi Sen & Yurt 2021). Furthermore, as reported by Sadi Sen & Yurt (2021), the education level of nurses and in-service training have an impact on the EBNAQ score.

In addition, in our study, the EBNAQ score of those with a working past of more than 11 years was found to be lower than the other groups ($p < .05$). The fact that it becomes more difficult to keep up with innovative and different practices as the years of work in the profession increase has been accounted for this situation.

There are numerous factors that can affect nursing students' attitudes towards EBP. In our study, it was concluded that there was a significant difference between the students' EBNAQ mean scores according to gender, and that the mean score of female students was higher than that of male students ($p < .05$). Many studies also support this finding (Majid et al 2011; Squires et al 2011). It can be suggested that this is due to the fact that female students internalize the profession more, tend to be more curious, scrutinizing, responsible, and more willing to learn professional theory and practices compared to male students.

In the study of Evcimen & Iscan Ayyildiz (2019), it was found that students' attitudes towards evidence-based nursing were at a good level, and female students scored higher in scale total score and sub-dimensions than men. All nursing students, including male students, must have these characteristics in order to implement evidence-based practices in clinics and to create new evidence.

It was found that the factors of reading the professional publications regularly, participating in scientific meetings, having membership in professional associations and conducting research did not affect the average EBNAQ scores. Although these factors are effective in the nurse population, they are found to be ineffective in the student population. It is observed that very few of the students do all these things, it is not known how long they do, based on our observations, we can assume that they mostly joined the organization towards the last years of their education, started doing research, and started reading publications regularly. In the early years of studentship, students can be encouraged to do these. In a study conducted with 875 students from three different universities, the EBN competency scores of the students were similar. In that study, it was found that reading professional publications

regularly was associated with EBN competency. Nursing students from three faculties were found to have high EBN proficiency levels in terms of knowledge, skills and attitudes (Sanchez Garcia et al 2019).

In our study, it was seen that students could develop positive attitudes as much as nurses, which can be referred as an indicator of success for students. In a meta-analysis study conducted by Li, Cao & Zhu (2019), it was reported that EBN should be included in the curriculum for students and supported by continuing education for nurses. The student population in our study both takes EBN courses in the curriculum and conducts studies on EBN in all vocational courses. As the EBN movement expands, there is a growing need for health professional leaders and educators in each country to find, evaluate and apply the evidence. Leaders can guide students and clinicians to use evidence in their practice.

Conclusion: In our study, EBN attitude levels of nurses and students were found to be high, and no statistically significant difference was found between the average scores of nurses and intern students. Although the score of belief and expectation was high in both groups, it was determined that the score of intention to practice and emotions were lower. It was found that the place of duty, reading professional publications regularly, participation in scientific meetings, membership in professional associations, doing research in nurses, and gender in students had an impact on EBN attitude level. In this study, the average EBNAQ score among the nurses and students was found to be at a good level. The fact that intern students' EBN attitudes are as positive as nurses give hope that future nurses can improve these practices. The high scores of the nurses and students in the beliefs and expectations sub-dimension showed that they believed in evidence-based practices, however the fact that the intention to practice was not at the same level showed that belief in EBN did not create a behavioral change. It is seen that taking EBN course is beneficial in terms of developing positive attitudes in students. The reasons why male students' EBN attitude levels are lower than female students should be investigated. It can be

suggested that EBN course be included in the curriculum, to enable students to take part in scientific activities and to support them in this regard, to organize practical training for the development of research skills, and to organize EBN courses. It can be also suggested that nurses be encouraged and supported to conduct research, read professional publications regularly, participate in scientific activities, give special place to nurses with long tenures in on-the-job training, establish EBP committees in hospitals and train mentor nurses.

Limitations of the Study: This research was conducted with nurses working in a foundation university hospital and nursing department students studying at a health sciences school, and the data obtained is based on the self-report of nurses and students.

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