Original Article

Does Attitude towards Evidence-Based Nursing affect Holistic Nursing Competence?

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Abstract

Background: It is important to determine the factors affecting nursing competence, which ensures that care is carried out safely and in accordance with ethical principles.
Objective: This study was carried out to examine the effect of nurses' attitudes towards evidence-based nursing on their holistic nursing competence.
Methodology: The sample of this descriptive study consists of 112 nurses working across Turkey.
Results: It was determined that nurses' attitudes towards evidence-based nursing changed significantly by their educational levels, their knowledge of evidence-based practices, and their status of following the scientific researches. Nurses' holistic nursing competencies were found to vary significantly by working year, educational level, level of knowledge about evidence-based practices, and status of following the scientific researches. It was found that there was a positive significant relationship between Attitude Towards Evidence-Based Nursing and Holistic Nursing Competence.
Conclusions: Nurses' attitudes towards evidence-based nursing positively affect their holistic nursing competencies. This study revealed that when the nurses base their nursing practices in the clinic on evidence, this shall become effective in enhancing competence levels.

Key words: Attitude, competence, evidence-based nursing, holistic nursing.

Introduction

Nurses set an important part of the clinical health workforce in health systems around the world. Nurses, who play many important roles in the protection and promotion of health, have a high potential to improve the quality of healthcare services (Flodgren et al., 2012). Today, to increase the quality of health care services, more attention is paid to the issues such as decision-making based on scientific knowledge and integrating evidence-based practices (EBP) into the care process (Farokhzadian, Khajouei & Ahmadian, 2015).

EBP is a problem-solving approach that aims to integrate the best evidence from current research with clinical expertise and patient preferences. Thanks to EBP, scientific research results are integrated into nursing practice, the gap between theory, research, and practice is bridged and patient outcomes are improved. EBP in nursing has some benefits such as patient-centered care, improvement in clinical decisions, increased confidence in clinical decision making, and keeping the information updated. Nurses are expected to plan, implement, and evaluate the care on an evidence basis (Al-Busaidi et al., 2019; Kilicli et al., 2019; Belita et al., 2020). In countries such as the UK, Netherlands, Canada, and the USA, the EBP competence in graduate nurses is considered as a standard area of competence (Senyuva, 2016).

Nursing competence that takes place within the occupational standards is the ability to integrate the knowledge, skills, abilities, and judgment required to carry out care safely and in accordance with ethical principles, and to perform the task under different conditions. Competent nurses are nurses who are aware of the positive and negative

aspects of current and potential events and conditions and have the ability to plan in line with specified goals (Takase & Teraoka, 2011; Aydin & Hicdurmaz, 2019). Holistic nursing practices are generally defined as taking a "mind-body-spirit-emotion-environment" approach to the practice of traditional nursing. According this approach, an individual is recognized and treated as a whole individual rather than a sick individual (Mariona, 2013). Nurses with holistic nursing competence (HNC) perform their practices by being aware of their personal characteristics, values, attitudes, knowledge and skills, and professional responsibilities. Today, in the light of scientific innovations and technological developments in health services, nurses are expected to serve the patient group whose expectations are increasing, to work together with different disciplines, and to facilitate the coordination of a wide range of services. Nurses' fitness to this changing structure, on the other hand, is being correlated with their levels of competence (Takase & Teraoka, 2011; Liu & Aungsuroch, 2018; Aydin & Hiçdurmaz, 2019).

Although there are studies examining evidence-based nursing (EBN)attitudes (Dikmen et al., 2018; Al-Busaidi et al., 2019; Kilicli et al., 2019) and their competence levels (Faraji et al., 2019; Leonardsen, Bjerkenes & Rutherford, 2019; Willman, Bjuresäter & Nilsson, 2020) in Turkey and in the world, no study was found in the literature that investigates the effect of EBN on nurse competence. This study, therefore, aims to examine the effect of nurses' attitudes towards EBN on HNC. For this purpose, answers to the following questions were sought:

1. What are the attitude levels of the nurses towards EBN and what are the affecting factors?
2. What are the HNC levels of the nurses and what are the affecting factors?
3. Do nurses' attitudes towards EBN affect HNC?

Method

Research Design and Sample: This research is a descriptive study. The population of the study consists of nurses who works at clinics throughout Turkey and who have knowledge about the EBN. For the sample size, the mean scores in a similar study on EBN were used (Ulas Karaahmetoglu & Kaçan Softa, 2018). In the analysis, the sample size was found as 128 by using 80% power, Type 1 error 0.05, and effect level d=0.40. During the data collection process, a total of 140 questionnaires were returned. 28 nurses stated that they did not have information about EBP and these nurses were not included in the study. The research was completed with 87.5% power and the participation of 112 nurses.

Inclusion and Exclusion Criteria: Nurses, who work as a clinic nurse, have knowledge of EBP, and agree to participate in the study, were included in the research. Nurses who do not have any information about EBP were excluded from the study. The status of nurses' having knowledge about EBP was evaluated with question "Do you have information about EBP?", the question at the beginning of the online questionnaire. Those who responded this question as "no" were asked to end the questionnaire without responding the items.

Data collection: The data were collected between June and September 2020 by sending the online questionnaire to the nurses. Participants filled in the questionnaire using a computer or smartphone that can open a website link. A letter of invitation including information on purpose, anonymity and privacy issues was sent to the participants along with the online questionnaire. Participants who completed the questionnaire were deemed to give their consent to participate in the study.

The Descriptive Information Form, the Evidence-Based Nursing Attitude Questionnaire (EBNAQ), and the Holistic Nursing Competence Scale (HNCS) were used to collect data.

Descriptive Information Form: This form was created by the researchers and consists of 7 questions about the descriptive features of the nurses and evidence-related information.

Evidence-Based Nursing Attitude Questionnaire (EBNAQ): The Turkish validity and reliability study of the scale, which was developed to determine the attitude towards the EBN, was performed by Ayhan**,** Kocaman and Bektas (2015). The Cronbach's α reliability coefficient of the scale, and sub-scales were found to be 0.90 and 0,86; 0,69; and 0,71, respectively. This 15-item scale consists of three sub-scales. The lowest score that can be obtained from the 5-point Likert-type scale is 15 and the highest score is 75. The scale has no cut-off point. A high score on the scale indicates that the attitude towards EBN is positive. The sub-scale "Beliefs and Expectations About EBN" covers the items related to nurses' beliefs and expectations towards the benefits of EBN in clinical practices. The sub-scale "EBP Intention" consists of items with regard to participants' behavior or intention of EBP, perceived obstacles and use of the time allocated for workload and education for EBN. The sub-scale "Sentiments on

EBN" consists of items about the level of importance placed on EBN, benefits of the use of EBN in clinical practices and sentiments of nurses on the subject (Ayhan, Kocaman & Bektas 2015).

Holistic Nursing Competence Scale (HNCS): This scale was developed to determinate the HNC and adapted into Turkish society by Aydin and Hicdurmaz (2019). This 7-point Likert-type scale comprises two parts, five sub-scales and 36 items in total. The lowest score that can be obtained from the scale is 36 points, while the highest score 252 points. The first part contains only the "General Aptitude" sub-scale of the HNCS, which consists of questions related to general behaviors as a person rather than as a nurse. The second part measures the competence as a nurse and consists of the remaining four sub-scales of the HNCS, which are as follows: "Staff Education and Management", "Ethically Oriented Practice", "Nursing Care in Team" and "Professional Development". The scale does not contain any cut-off point. The total HNCS score is ascertained from the simple addition of the sub-scale scores. The higher the sub-scale score, the higher the increase in the overall HNC of the nurses (Aydin & Hiçdurmaz, 2019).

Data Analysis: SPSS 21.0 program was used to analyze the data. Number, percentage, mean, standard deviation, median and interquartile range, the Mann-Whitney U test, the Kruskal-Wallis test, the Spearman's correlation analysis was used for data analysis. Statistical significance value was accepted as $p \leq 0.05$.

Ethical Approval: For the research, a written consent (decision number: 15386878-044) was obtained from the ethics committee at the researchers' university. Prior to the data collection process, a letter of invitation containing information about the purpose, anonymity, and privacy was sent to the participants in the online environment and they were informed that participation in the study was based on voluntariness. The research was conducted in accordance with the principles of the Declaration of Helsinki.

Results

The mean age of the nurses was 32.36±8.50 years and their mean working years was 10.78±9.06 years. Of the nurses, 76.79% were graduate, 28.57% work in internal medicine and 24.10% in pandemic/intensive care clinics. 64.28% of the nurses stated that they have adequate knowledge of EBP, while 61.60% of them mentioned that they partially follow the scientific researches. It was determined that the most common methods used by nurses for guidance in clinical practices were verbal exchange of information with their colleagues and in-service trainings (Table 1).

Although not shown in the table, nurses' mean scores of EBNAQ in the sub-scale "Beliefs and Expectations About EBN", the sub-scale "EBP Intention", and the sub-scale "Sentiments on EBN" were 28.87±4.58; 15.80±2.49; and 61.44±8.19, respectively. Nurses' mean scores of HNCS in the sub-scale "General Aptitude", the sub-scale "Staff Education and Management", the sub-scale "Ethically Oriented Practice", the sub-scale "Nursing Care in Team", and the sub-scale "Professional Development" were 5.38±1.02; 4.82±1.82; 5.98±1.51; 5.37±1.13; and 5.37±0.68, respectively, while total score of HNCS was 5.60± 1.07.

Table 2 shows the comparison of nurses' descriptive features and their attitudes towards EBN. There was no statistically significant difference between the sub-scale scores and total scores of EBNAQ and nurses' age and working years ($p>0.05$).

It was found that there was a significant difference between the sub-scale scores and total scores of EBNAQ and educational backgrounds.

In paired analyzes conducted to determine the group that makes the difference, it was found that the mean scores of the nurses who had a postgraduate education were higher than those who had a high school and graduate-level education ($p \leq 0.05$).

It was found that nurses who have adequate knowledge of EBP had significantly higher scores in the sub-scale scores and total scores of EBNAQ ($p \leq 0.05$).

There was a significant difference between the status of following the scientific researches and the sub-scale and total scores of EBNAQ. In the paired comparison made, it was found that nurses who follow the scientific research had a better attitude towards EBN in all sub-scales except for the sub-scale "Beliefs and Expectations About EBN" ($p \leq 0.05$).

Table 3 shows the comparison of nurses' descriptive features and HNC scores. There was no statistical difference between age and nurses' the sub-scale and total scores of HNCS ($p>0.05$).

It was seen that there was a statistically significant difference between nurses' working years and

their scores of sub-scale "General Aptitude". In the paired analyses made, it was found that general aptitude levels of nurses with 13-25 years of working were higher than those with 1-12 years of working, while nurses with 26-37 years of working had higher general aptitude levels than those with 13-25 years of working ($p \leq 0.05$).

There was a significant difference between nurses' educational background and their scores of sub-scales "General Aptitude", "Staff Education and Management", "Professional Development" and their total scores. In paired comparisons conducted to determine the group that makes the difference, mean scores of nurses who had a high school-level education were found to be significantly lower than those who had a graduate and postgraduate-level education ($p \leq 0.05$).

Nurses who had adequate knowledge of EBP were found to have significantly higher scores in the sub-scale and total scores of HNCS ($p \leq 0.05$).

It was seen that there was a statistically significant difference between nurses' status of following the scientific research and sub-scale and total scores of HNCS. In the paired comparisons made, nurses who follow the scientific research were found to have significantly higher scale scores than those who do not follow and partially follow the scientific research in question ($p \leq 0.05$).

Table 4 shows the correlation analysis results indicating the correlation between attitude towards EBN and HNC. It was found that there was a significant positive correlation between all sub-scales and total means scores of EBNAQ and all sub-scales and total scores of HNCS. It was determined that there was a significant positive relationship above the medium-level between HNCS "General Aptitude" scores and ENBAQ total scores, "Beliefs and Expectations About EBN" and "EBP Intention" sub-scale scores; while there was a significant positive relationship above the medium-level between HNCS total scores and "Beliefs and Expectations About EBN" sub-scale scores and EBN total scores ($p \leq 0.001$).

Table1. Distribution of Nurses by Their Descriptive Features (N=112)

Descriptive Features	n (%)
Age	
20-31 years	59 (52.70)
32-43 years	38 (33.90)
44-55 years	15 (13.40)
Working year	
1-12 yıl	72 (64.28)
13-25 yıl	29 (25.89)
26-37 yıl	11 (9.83)
Educational Background	
High School/Undergraduate	12 (10.71)
Graduate	86 (76.79)
Postgraduate	14 (12.50)
The Clinic Where S/He Works	
Internal Medicine	32 (28.57)
Pandemic/intensive care clinic	24 (24.10)
Surgery clinic	18 (16.07)
Emergency	15 (13.40)
Other clinics	20 (17.86)
Knowledge level of EBP	
Adequate	72 (64.28)
Partially adequate	40 (35.72)
Following scientific research/evidence related to your profession	
Yes	25 (22.32)
No	18 (16.07)
Partial	69 (61.60)
The methods and guidelines you use in your nursing practices*	
Verbal exchange of information with my colleagues	87 (77.67)
In-service trainings	86 (76.78)

Scientific research results	49 (43.75)
Course and certification programs	49 (43.75)
Clinical nursing guidelines	43 (38.39)
Personal experiences and knowledge	42 (37.50)

*n was doubled. Abbreviation: EBP, evidence-based practice

Table 2. Comparison of Nurses' Descriptive Features and EBNAQ (N=112)

Variables	EBNAQ			
	Beliefs/Expectations about EBN	EBP Intention	Sentiments on EBN	EBNAQ Total Score
	Median (Q1-Q3)	**Median (Q1-Q3)**	**Median (Q1-Q3)**	**Median (Q1-Q3)**
Age				
20-31 years	28.00(26.00-32.00)	16.00 (14.00-17.00)	16.00 (16.00-19.00)	60.00 (56.00-68.00)
32-43 years	28.50(27.00-34.00)	16.00 (15.00-17.25)	16.00 (15.75-18.00)	60.50(57.00-71.00)
44-55 years	30.00(28.00-35.00)	15.00 (15.00-20.00)	17.00 (16.00-20.00)	62.00 (59.00-73.00)
p	0.454	0.833	0.547	0.395
Working years				
1-12 years	28.50(26.00-34.00)	16.00 (14.00-17.00)	16.00 (16.00-19.00)	60.00 (57.00-68.00)
13-25 years	28.00 (27.00-30.00)	15.00 (15.00-17.00)	16.00 (15.00-18.00)	60.00 (57.00-64.00)
26-37 years	30.00 (28.00-35.00)	18.00 (15.00-20.00)	17.00 (16.00-20.00)	63.00 (60.00-75.00)
p	0.365	0.130	0.189	0.118
Educational Background				
High School [a]	27.00(26.25-28.00)	15.00(12.5-16.00)	16.00(12.25-16.75)	58.50(52.75-61.00)
Graduate [b]	28.00(26.75-31.25)	16.00(14.75-17.25)	16.00(15.75-19.00)	60.00(57.00-67.00)
Postgraduate [c]	34.50(29.75-35.00)	17.00(15.00-20.00)	19.5(16.75-20.00)	70.00(64.00-72.75)
p	**0.001 a-c p=0.001 b-c p=0.001**	**0.036 a-c p=0.013**	**0.002 a-c p=0.001 b-c p=0.004**	**0.002 a-c p=0.001 b-c p=0.003**
Knowledge level of NBP				
Adequate	29.50(27.75-34.25)	16.00(15.00-18.00)	17.00(16.00-20.00)	62.00(59.00-71.00)
Partially adequate	28.00(23.75-29.00)	15.00(13.00-16.00)	16.00(13.75-16.00)	57.50(52.75-60.25)
p	**0.001**	**<0.001**	**<0.001**	**<0.001**
Status of Following the Scientific Researches				
Yes [a]	31.00(28.50-35.00)	17.00(16.00-19.50)	18.00(16.50-20.00)	66.00(60.50-72.50)
No [b]	28.00(24.75-34.25)	14.00(13.00-16.25)	16.00(14.75-18.25)	57.50(54.75-67.25)
Partially [c]	28.00(26.00-30.00)	15.00(15.00-17.00)	16.00(15.00-18.00)	60.00(57.00-65.00)
p	**0.007 a-c p=0.005**	**0.001 a-b p=0.001 a-c p=0.001**	**0.003 a-b 0.004 a-c p=0.002**	**0.002 a-b p=0.005 a-c p=0.001**

Abbreviations: EBN, evidence-based nursing; EBNAQ, Evidence-Based Nursing Attitude Questionnaire; EBP, Evidence-Based Practice.

Table 3. Comparison of Descriptive Features of Nurses and HNCS (N=112)

Variables	HNCS					
	General Aptitude	Staff Education and Management	Ethically Oriented Practice	Nursing Care in Team	Professional Development	HNCS Total Score
	Median (Q1-Q3)	**Median (Q1-Q3)**	**Median (Q1-Q3)**	**Median (Q1-Q3)**	**Median (Q1-Q3)**	**Median (Q1-Q3)**
Age						
20-31 years	5.28(4.71-6.00)	4.28(3.85-5.42)	5.44(4.11-6.44)	5.28(4.14-6.14)	5.25(4.25-6.00)	5.03(4.25-5.92)
32-43 years	5.28(4.53-6.10)	5.14(4.00-6.00)	5.77(5.00-6.44)	4.85(5.71-6.42)	5.37(4.50-6.50)	5.33(4.75-6.19)
44-55 years	5.71(5.00-6.85)	4.85(4.28-5.85)	5.77(4.38-7.00)	5.00(4.71-6.71)	5.50(5.00-7.00)	5.21(4.79-6.36)
p	0.414	0.095	0.255	0.416	0.369	0.268
Working year						
1-12 years	5.42(4.71-6.25)	4.57(3.85-5.57)	5.50(4.47-6.44)	5.42(4.46-6.10)	5.25(4.50-6.00)	5.20(4.51-5.97)
13-25 years	5.00(4.42-5.71)	4.57(4.00-6.00)	5.50(4.88-6.44)	5.28(4.85-6.42)	5.50(4.50-6.50)	4.82(4.74-6.10)
26-37 years	6.42(5.64-7.00)	5.85(4.78-6.14)	5.77(4.38-7.00)	5.57(4.57-6.92)	5.50(5.00-7.00)	5.60(5.07-6.68)
p	**0.018 a-b p=0.004 b-c p=0.007**	0.195	0.623	0.721	0.369	0.356
Educational background						
High School [a]	4.78(3.64-5.32)	3.85(3.50-4.46)	4.72(4.00-5.55)	4.78(3.96-5.39)	5.00(4.31-5.69)	4.58(3.89-5.25)
Graduate [b]	5.28(4.71-6.17)	4.78(4.00-5.85)	5.72(4.77-6.44)	5.50(4.57-6.32)	5.25(4.50-6.25)	5.23(4.64-6.00)
Postgraduate [c]	5.85(4.96-6.89)	5.71(3.96-6.42)	6.22(4.94-7.00)	6.00(4.96-7.00)	6.37(4.75-7.00)	6.11(4.70-6.87)
p	**0.012 a-b p=0.001 a-c p=0.002**	**0.018 a-b p=0.001 a-c p=0.003**	0,94	0.059	**0.006 a-c p=0.007**	**0.013 a-b p=0.001 a-c p=0.002**
Knowledge level of EBP						
Adequate	5.71(4.85-6.57)	5.28(4.21-6.00)	5.88(5.00-6.58)	5.85(5.00-6.60)	6.00(4.68-6.75)	5.65(4.76-6.42)
Partially adequate	5.00(4.39-5.46)	4.14(3.82-5.00)	6.77(4.00-5.77)	4.71(4.14-5.60)	5.00(4.00-5.75)	4.75(4.22-5.27)
p	**0.001**	**0.001**	**0.001**	**0.003**	**0.003**	**0.001**
Status of Following the Scientific Researches						
Yes [a]	6.00(5.35-7.00)	5.85(4.92-6.28)	5.22(6.44-7.00)	6.42(5.42-7.00)	6.00(5.75-7.00)	6.23(5.39-6.85)
No [b]	5.00(4.82-5.60)	4.07(3.85-4.89)	4.94(4.00-5.94)	4.85(4.25-5.60)	4.87(4.25-5.31)	4.78(4.24-5.27)
Partially [c]	5.14(4.64-6.00)	4.57(3.85-5.71)	5.55(4.77-6.27)	5.28(4.57-6.14)	5.00(4.25-6.00)	5.07(4.52-5.92)
p	**0.006 a-b p=0.012 a-c p=0.006**	**<0.001 a-b p=0.007 a-c p=0.004**	**0.005 a-b p=0.014 a-c p=0.020**	**<0.001 a-b p=0.047 a-c p=0.023**	**<0.001 a-b p=0.001 a-c p=0.041**	**<0.001 a-b p=0.007 a-c p=0.013**

Abbreviations: HNC, holistic nursing competence; HNCS, Holistic Nursing Competence Scale; EBP, evidence-based practice.

Table 4. The Correlation between EBNAQ and HNCS

HNCS		EBNAQ			
		Beliefs and Expectations About EBN	EBP Intention	Sentiments on EBN	EBNAQ Total Score
General Aptitude	r	0.586	0.564	0.497	0.647
	p	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
Staff Education and Management	r	0.457	0.402	0.355	0.483
	p	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
Ethically Oriented Practice	r	0.434	0.253	0.238	0.390
	p	**< 0.001**	**0.007**	**0.012**	**< 0.001**
Nursing Care in Team	r	0.470	0.357	0.312	0.464
	p	**< 0.001**	**< 0.001**	**0.001**	**< 0.001**
Professional Development	r	0.455	0.382	0.295	0.458
	p	**< 0.001**	**< 0.001**	**0.002**	**< 0.001**
HNCS Total Score	r	0.536	0.427	0.374	0.541
	p	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**

r = Spearman's Correlation Analysis Abbreviations: HNCS, Holistic Nursing Competence Scale; EBN, Evidence-Based Nursing; EBNAQ, Evidence-Based Nursing Attitude Questionnaire; EBP, Evidence-Based Practice.

Discussion

Attitude Towards the EBN, and the Affecting Factors: This study was carried out to examine the effect of nurses' attitudes towards EBN on their HNC. In studies in the literature examining the nurses' attitudes towards EBN (Dikmen et al., 2018; Li, Cao & Zhu, 2019; Ozga et al., 2019) it was found that nurses have positive or negative attitudes. As a result of this research, it was found that nurses' attitudes towards EBN were positive. But despite the positive attitude, it was observed that information exchanges with colleagues and in-service trainings guided the clinical practice of nurses rather than research results. Similarly, there are also studies revealing that despite nurses' positive attitudes towards EBN, the rates of EBN were low (Pereira, Pellaux & Verloo, 2018; Al-Busaidi et al., 2019; Kilicli et al., 2019). In their study carried out with nurse practitioners, Park**,** Ahn and Park (2015) determined that the attitude towards EBN was at a medium-level but the intention to use research was high, while Ozga et al. (2019) found that nurses regard the use of research results as worthless but clinical experiences more valuable in the decision-making process. The results of our study have revealed the gap between the use of EBP and research and nursing practices in Turkey.

As a result of this research, the attitudes of nurses who had a postgraduate-level education towards EBN were found to be more positive than the nurses who had a high school and graduate-level education. In addition to the studies with similar results (Park Ahn & Park, 2015; AbuRuz et al., 2017; Kilicli et al., 2019) there are also studies showing that education level does not affect attitude (Khajouei & Ahmadian, 2015; Dikmen et al., 2018; Farokhzadian, Pereira, Pellaux & Verloo, 2018). Ammouri et al. (2014) found that nurses with bachelor's degrees had more positive attitudes towards EBN than those with diploma degrees, while Patelarou et al. (2016) mentioned that nurses who were graduates had more positive attitudes. An increase in the education level means a longer education period and during this process, nurses' knowledge, skills, attitudes, and curiosity about evidence increase (Park Ahn & Park, 2015). The fact that nurses who had a graduate-level education have more knowledge and experience in research methodology and practice as required by the curriculum and they can interpret the evidence positively affect their attitudes towards EBN (AbuRuz et al., 2017; Kilicli et al., 2019).

Nurses with adequate knowledge of EBP were found to have more positive attitudes towards EBN. In addition to the studies with similar results (Patelarou et al., 2016; Kilicli et al., 2019), the study of Pereira, Pellaux and Verloo (2018) revealed that knowledge does not affect attitude. In this study, it is thought that nurses who have adequate knowledge of EBP consider evidence more important for improving patient care outcomes and therefore have a more positive attitude towards EBN.

In this study, it was found that the attitudes of nurses who follow the scientific researches towards EBN were more positive. In the literature, there are studies with similar results (Ayhan, Kocaman & Bektaş 2015; Dikmen et al., 2018). Continuously updated scientific research results support the evidence. For this reason, it is an expected result that nurses who follow scientific researches have a positive attitude towards EBN. The results of our study have shown the positive effects of having knowledge thanks to the educational level and by following the researches on this subject in integrating knowledge proven by scientific research results into nursing practices.

HNC and Affecting Factors: The competence levels of nurses significantly affect patient care quality, nurse/patient satisfaction, the nursing profession, nursing education, and, in particular, the development of clinical nursing (Nobahar, 2016). As a result of this research examining HNC, it was found that the competence levels of nurses are above average, that is, nurses consider themselves competent.

In the literature, in addition to the studies in which the competence levels of nurses were high (Adib Hajbaghery & Eshraghi Arani, 2018; Elhami et al., 2018; Faraji et al., 2019) there are also studies in which the competence levels of nurses are at a medium-level (Mirlashari et al., 2016; Karami, Farokhzadian & Foroughameri, 2017; Jing et al., 2019).

In this study, it was found that as the experience of nurses increased, their HNC levels in the "General Aptitude" sub-scale increased. The sub-scale "General Aptitude" of HNC includes nurses' personal characteristics and critical thinking skills (Takase & Teraoka, 2011), thus, it is thought that nurses evaluate and manage events more objectively with their increasing experience. There are studies in the literature showing that working year and competence are positively related (Takase, 2013; Sasatani & Matsuda, 2014; Flinkman et al., 2017) while Leonardsen, Bjerkenes and Rutherford (2019) determined that the working year does not affect competence. Karami, Farokhzadian and Foroughameri (2017) found that nurses' with a working year over 15 years competence levels were higher; while in their study where they evaluated the competence levels of newly graduated nurses, Willman, Bjuresäter and Nilsson (2020) identified that nurses' competence levels in all sub-scales except the critical thinking sub-scale increased in time in the first 15 months.

In this research, nurses who had a high school-level education were found to have lower levels of "General Aptitude", "Staff Education and Management", "Professional Development" sub-scales and total HNC compared to nurses who had a graduate and postgraduate-level education. No relationship was found between educational background and competence in the study of Sasatani and Matsuda (2014), while Flinkman et al. (2017) determined that higher education and competence had a positive correlation. It can be said that increasing education level makes nurses more advantageous in terms of knowledge, skills, and experience, and thus, nurses feel more competent.

In this study, it was found that the HNC levels of nurses who have adequate knowledge of EBP were higher. Knowledge is one of the main components of EBP. EBPs, on the other hand, are applications that are based on current data and that provide patient-centered service, ensure the development of clinical decisions, accountability, and keeping information up-to-date (Zhou et al., 2016; Al-Busaidi et al., 2019). Therefore, it is a foregone conclusion that the knowledge of evidence that improves the quality of care and nursing practice increases competence.

In this study, it was found that the competence levels of nurses who follow scientific researches were higher. A similar result was obtained in the study of Sasatani and Matsuda (2014), while a positive correlation was found between participation in training programs and competence (in the study of Flinkman et al (2017)), and between on-site learning and competence (in the study of Takase et al. (2015)). Professional activities that offer advanced knowledge and skills such as following scientific research, training courses, and academic conferences enable nurses to follow up-to-date information (Takase et al., 2015).

Attitude Towards EBN and Its Relationship with HNC: EBPs, which are the cornerstone of quality and safe patient care, are seen as a core competency area that nurses should master (Al-Busaidi et al., 2019). In this study, it was determined that there is a positive and significant relationship between the attitude towards EBN and HNC and that nurses who have a positive attitude towards EBN are more competent. In their research where they compared the competencies of nurses graduated from a problem-based nursing program and a non-problem-based nursing program; Applin et al., (2011) determined that there was no significant difference in competence between the two groups, but the increase in competence of nurses who graduated from problem-based nursing programs was associated with EBP. Madarshahian, Hassanabadi and Khazayi (2012) stated that clinical competence can be increased with evidence-based education.

Limitations of The Study: The rate of participation in the study to be 87.5% as the 12.5% of the nurses do not have knowledge about EBP were the limitation of our study. Another limitation of our study was the presence of differentiations between nursing practices and EBP and research literature, in Turkey. Further nursing practices-based studies are required to test whether EBPs increase the HNC.

Conclusion: As a result of the research, it was determined that nurses' attitudes towards EBN were generally positive, and that nurses with postgraduate education, adequate knowledge of evidence, and following scientific researches were higher attitude levels. In terms of HNC on the other hand, it was identified that nurses perceive themselves competent and the working year, a postgraduate-level education, adequate knowledge of evidence, and to follow scientific research provide advantages for competence. Besides, a significant positive correlation was found between the attitude towards EBN and HNC. The results of this research have shown the importance of postgraduate education opportunities, nurses' knowledge and awareness of EBP, and improvement of the situations that prevent EBPs from being integrated into the clinic, for increasing the competence levels of nurses.

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