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The Evidence-Based Practice Competencies of Nursing Students

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ABSTRACT

The purpose of this research was to evaluate the evidence-based knowledge, skill and behavioral competencies of nursing students. The sample of this cross-sectional study consisted of 435 nursing students. The socio-demographic characteristics form and "The Evidence-based Practice Evaluation Competence Questionnaire" were used with regards to the data collection process. With regards to the evidence-based practice questionnaire which was applied to nursing students; the knowledge sub-dimension mean score was 18.6 ± 2.9, the skill sub-dimension mean score was 19.1 ± 2.9, the attitude sub-dimension mean score was 46.9 ± 6.7, and the total point average was found to be 84.7 ± 9.1. In comparing the descriptive features and the evidence-based practice scale; the knowledge sub-dimension who were aged 21-22, whose family income was higher than their expenses, vocational high school graduate and fourth-grade students'; the skills sub-dimension who were second-grade students'; the attitude sub-dimension who in women, single individuals, second-grade students and find their profession suited for their field of interests; the scale total score averages who in women, single individuals, second-grade students, and find their profession suited for their field of interests were found significantly higher ($p<0.05$). There is a positive and significant relationship between the skills and attitude sub-dimensions, and between the knowledge and attitude sub-dimensions ($p<0.001$). In this study, the sub-dimensions of knowledge, skills, attitude and the total score averages of the evidence-based practice scale were found to be above average in nursing students.

Key words: Evidence, Evidence-Based Practice, Nursing, Student Nurse.

Hemşirelik Öğrencilerinin Kanıt Temelli Uygulama Yetkinlikleri

ÖZ

Bu araştırmanın amacı, hemşirelik öğrencilerinin kanıta dayalı bilgi, beceri ve davranış yeterliliklerini değerlendirmektir. Kesitsel tipteki bu çalışmanın örneklemini 435 hemşirelik öğrencisi oluşturmuştur. Veri toplama sürecinde sosyo-demografik özellikler formu ve "Kanıta Dayalı Uygulama Yetkinlik Anketi" kullanılmıştır. Hemşirelik öğrencilerinde kanıta dayalı uygulama anketi, bilgi alt boyutu ortalama puanı 18,6 ± 2,9, beceri alt boyutu ortalama puanı 19,1 ± 2,9, davranış alt boyutu ortalama puanı 46,9 ± 6,7, toplam puan ortalaması 84,7 ± 9,1'dir. Tanımlayıcı özellikler ile kanıta dayalı uygulama ölçeğinin karşılaştırılmasında; 21-22 yaş aralığında, ailesinin geliri giderinden fazla olan, meslek lisesi mezunu ve dördüncü sınıf öğrencilerinin bilgi alt boyutu; ikinci sınıf öğrencilerinin beceri alt boyutu; kadın ve bekar bireylerde, ikinci sınıf öğrencilerinde ve mesleğini ilgi alanlarına uygun bulan bireylerde davranış alt boyutu; kadınlarda, bekar/bekar bireylerde, ikinci sınıf öğrencilerinde ve mesleğini ilgi alanına uygun bulan bireylerde ölçek toplam puan ortalamaları anlamlı olarak yüksek bulunmuştur ($p<0.05$). Beceri ve davranış alt boyutu, bilgi ve davranış alt boyutu arasında pozitif yönlü anlamlı bir ilişki vardır ($p<0,001$). Araştırmada hemşirelik öğrencilerinde kanıta dayalı uygulama ölçeğinin bilgi, beceri, davranış alt kümeleri ve toplam puan ortalamaları ortalamanın üzerinde bulunmuştur.

Anahtar kelimeler: Hemşirelik, Kanıt, Kanıta Dayalı Uygulama, Öğrenci Hemşire.

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INTRODUCTION

Evidence-based practice (EBP) is recognized as the key to healthcare quality (Alqahtani et al., 2020). Global trends in nursing education have shown a paradigm shift from traditional models to outcome or competency-based models. Nursing education institutions in various countries propose EBP as the core factor related to competency within the nursing practice. Therefore, efforts to increase the effectiveness of the EBP curriculum at the level of nursing undergraduate education are underway (Oh and Yang, 2019).

Students struggle to integrate evidence-based practice into the clinical setting, despite the development of their competence in evidence-based practice (Lam & Schubert, 2019). The World Health Organization Current Strategic Unit (2010) stated that improving outcomes for families and communities depends on whether nursing services are supported by EBP. (Hickman et al., 2018).

In the 1970s, the inception of acknowledging the nursing profession as a research-based profession in England increased the participation of nurses in research activities and enabled the usage of research data in patient care (Yurtsever and Altıok, 2006). The Millennium Development Goals set by the United Nations (UN) in 2000 have become a manifesto for nurses worldwide calling them to action. In Turkey, The Nursing Regulation which was enacted in 2010 states that "nurses should plan, apply, evaluate and monitor the given care based on evidence" (Republic of Turkey Ministry of Health, 2010). In 2012, the International Council of Nurses (ICN) designated the concept of "Bridging the Gap Between Research and Practice" as its theme of the year to emphasize the importance of EBP in healthcare services and assigned nurses a set of duties to achieve this goal. In order to carry out these duties and achieve these goals, it is recommended for the nurses to actively participate in the regulation process of health-related policies, to prepare health action plans nationally and internationally, and use the acquired evidence within the service of patient care (Republic of Turkey Ministry of Health, 2010).

WHO (2016) provides a framework for the development, implementation and evaluation of nursing in order to contribute towards the improvement of global health. In this framework, providing a trained, competent and motivating workforce; optimizing policy development, establishing and maintaining an effective leadership, management and governance and the importance of providing an effective evidence-based nursing care is emphasized in order to maximize the potential of nurses (Pickler, 2020). In this context, in order to show that nurses are currently solving a wide range of health problems and that they stand at the center of nursing practices, WHO declared the year 2020 as the year of "Nurses: A Leading Voice - Nursing for World Health" with the theme of "The Year of The Nurse"(Küçük et al., 2017).

Nursing undergraduates, the future healthcare professionals, have a fundamental driving role related to the integration and usage of EBP in healthcare. It is important to note that undergraduate nursing students learn about EBP and begin to apply it throughout the relevant course, continue to develop it by integrating their skills into lifelong learning processes and nursing care (Cardoso et al., 2021).

In order to increase the use of EBP in nursing care, necessary concepts and skills should be obtained by nurses at an early age in their careers (Ryan, 2016). Universities are the leading institutions in terms of providing EBP education and developing related skills. They are in the best position to provide the necessary knowledge, skills and attitudes which nurses need regarding evidence-based patient care. Researching students' EBP experiences in clinical practice and clinical projects in the undergraduate curriculum will contribute to the development and improvement of the EBP-based curriculum. Therefore, this study, which aims to evaluate the knowledge, skills and attitudes of nursing students towards EBP, will contribute to the development and to a better evaluation of EBP teaching as a part of nursing education in Turkey.

MATERIAL AND METHOD

Research Type, Universe and Sample

The universe of the research consisted of 747 students studying at Gaziantep University, Faculty of Health Sciences,

Department of Nursing in the 2016-2017 academic year. It was planned to include the entire population in the study, and the minimum sample size was not determined. Students who agreed to participate in the research and filled out the data collection tools completely were included in the study. Therefore, the sample comprised of a total of 435 students, 111 from the first year, 132 from the second year, 114 from the third year and 78 from the fourth year.

The Time and Place of the Study

The study was conducted between September 2016 and July 2017. The Nursing Department where the study was conducted has five professors, five assistant professors, two lecturers, and six research assistants at that time. There were no courses related to a specific EBP given to nursing students. These deficiencies are tried to overcome with the course of "Research and Biostatistics in Nursing". In addition, students are encouraged by their advisors to engage in scientific work and participate in various congresses and symposiums.

Data Collection

In the data collection stage, a 7 item descriptive questionnaire form (age, sex, marital status, grade, the economic situation of the family, graduated high school, suitability of the profession to personal interests) prepared by the researchers and The Evidence-based Practice Evaluation Competence Questionnaire which contained 25 items (EBP-COQ) were used.

The Evidence-based Practice Evaluation Competence Questionnaire (EBP-COQ): Developed by Martinez et al. (2013) and with its validity and credibility verified by Yıldız and Güngörmüş (2016), the EBP-COQ, has a 5-point Likert type design (Strongly disagree=1... Strongly agree=5) and consists of 25 items and 3 sub-dimensions. The minimum and maximum score distributions that can be obtained from the scale are within the range of 6-30 in the sub-dimensions of knowledge and skills, 13-65 in the sub-dimension of attitudes and within the range of 25-125 in total. Negative items are reversely scored. Questions 1 to 13 constitute the sub-set of attitudes while the questions 14-19 are comprised of the sub-dimension of skills, and finally, the questions 20-25 make up the sub-dimension of knowledge. High scores indicate that the evidence-based practice competencies of students are high. The internal consistency reliability coefficient of the scale is between 0.52 and 0.80 in the study of Martinez et al., and between 0.550 and 0.908 in the study of Yıldız and Güngörmüş (Ruzafa-Martinez et al., 2013; Yıldız & Güngörmüş, 2016). In this study, Cronbach-Alfa values were; for total score: 0.768, for sub-dimensions: 0.743 to 0.765.

Analysis of Data

The data obtained in the study has been analyzed via the SPSS 22.0 software. The data showed a normal distribution. The statistical analysis of the data was carried out by the usage of the frequency test, the independent sample t-test in paired groups and the ANOVA test in comparison of three or more groups. The Scheffe correction method was used for the p value in pairwise comparison between groups after the ANOVA test. Correlation analysis was performed between the sub-dimensions of the scale and the total score averages.

The Ethical Aspect of the Research

The appeal for the ethical approval of the study was made to the Gaziantep University Clinical Research Ethics Committee, and afterwards, the Ethics Committee Approval (Decision No: 2016/221 date: 15.08.2016) was obtained. The verbal consent was taken from the students who participated in the study.

RESULTS

When descriptive features and evidence-based practice scale sub-dimensions and total score were compared; It was determined that the knowledge sub-dimension mean score differed significantly by age groups and that the students aged "21-22" (19.2±2.6) had a high knowledge score mean. Similarly, it was determined that the knowledge sub-dimension mean score differed significantly according to the grade of the students, and further analysis showed that this difference was due to the "third grade" and "fourth grade" students, and the knowledge score averages of the "fourth grade" students (19.3±2.5) were the highest. There was also a significant difference between the economic status of the family and the knowledge sub-dimension. This difference stemmed from those who had their "family income to be higher than their expenses" and those who had "a family

income which was lower than their expenses", and those with "a family income which was higher than their expenses" had the highest average score (19.7±3.3). There is a significant difference between the knowledge sub-dimension of the scale and the high school from which the student graduated, and the difference was found between the graduates of "Science high school" and "Anatolian high school", "Anatolian high school" and "Vocational high school", and "Vocational high school" and "General high school". It was determined that "Vocational high school" graduates had the highest mean score (20.4±2.5). It was found that there was a significant difference between the suitability of the profession for the field of interest and the knowledge sub-dimension, with further analysis, it was identified that this difference was due to those who expressed the words of "not sure" and "not suitable", and those who said "not suitable" had a higher average score (19.2±2.7) ($p<0.05$) (Table1).

It was determined that there was a significant difference between the skill sub-dimension of the scale and the grade levels, which was based upon the "second grade" and "third grade" students, and the mean score of the "second grade" students (19.6±3.1) was high ($p<0.05$) (Table 1).

It was determined that there was a significant difference between the attitude sub-dimension of the scale and the sexes of the students which meant that the mean scores of the "female students" were higher (47.5±6.6). It was determined that there was a significant difference between the attitude sub-dimension of the scale and marital status, and that the mean scores of single students (47.0 ± 6.6) were found to be higher. A significant difference was found between the attitude sub-dimension and the classes, and it was stated that this difference was caused by the "first grade" and "second grade" students, and the "second grade" and "third grade" students, and the average of the "second grade" students was higher (48.5±5.9). It was determined that there was a significant difference between the suitability of the profession for the field of interest and the attitude sub-dimension. Upon further analysis, this difference was found to be due to those who made the statements of "not sure" and "suitable", and those who expressed "suitable", had a higher average score (47.9±6.9) ($p<0.05$) (Table 1).

It was found that there was a significant difference between the EBP-COQ scale total score average and the sex of students, and that the total mean score of "female students" (85.4±9.3) was found to be higher. It was stated that there was a significant difference between the mean total score and marital status, and the mean score of those who were "Single" (84.9±9.0) was higher. A significant difference was determined between the total mean score and the classes, and this difference was between "first grade" and "second grade", "second grade" and "third grade", "third grade" and "fourth grade" students, and "second grade students" students' mean scores (86.9±8.5) were found to be high. It was found that the significant difference between the suitability of the profession for the field of interest and the scale total mean score was due to those who stated "not sure" and "suitable", and those who expressed "suitable" had the highest total score (86.2±9.8) ($p<0.05$) (Table 1).

The findings of the study are as follows; weak level between skill and attitude sub-dimensions of EBP-COQ scale ($r = 0.292$), very weak level between knowledge and attitude ($r = 0.130$), moderate level between scale total score and knowledge sub-dimension ($r = 0.405$), scale total score and skill sub-dimension ($r = 0.523$), a very high level and positive correlation between scale total score and attitude sub-dimension ($r = 0.896$) ($p<0.01$) (Table 2).

In the study, the lowest EBP-COQ scale score was 52.0 ± 9.1, while the highest was 124.0 ± 9.1, and the average total score was 84.7 ± 9.1. According to the average score of the knowledge sub-dimension score of 18.6 ± 2.9, the skill sub-dimension score of 19.1 ± 2.9, and the attitude sub-dimension score of 46.9 ± 6.7, it was determined that the knowledge, skills and attitudes of nursing students regarding evidence-based practices were "above average".

DISCUSSION

To the best of our knowledge, there is no available study which evaluates the knowledge, skills and attitudes of nursing students about EBP by embodying them with a scale. The findings of this study were compared with other studies which were conducted with nurses and nursing students.

Table 1. Comparison of the EBP-COQ total and sub-dimensions with the socio-demographic characteristics of the students

Descriptive Characteristics			Total and sub-dimensions of the EBP-COQ (X±SD)			
		N-%	Knowledge	Skill	Attitude	Total
Age	**19-20 Age**	266-61.1	18.3±3.0	18.9±2.9	46.7±6.4	84.0±8.6
	21-22 Age	169-38.9	19.1±2.6	19.4±2.9	47.2±7.0	85.7±9.9
Statistical analysis			t=2.763	t=1.534	t=0.719	F=1.894
			p=0.006	p=0.126	p=0.473	**p=0.06**
Sex	**Female**	322-74.0	18.6±3.0	19.2±3.0	47.5±6.6	85.4±9.3
	Male	113-26.0	18.7±2.4	18.8±2.7	45.1±6.5	82.7±8.3
Statistical analysis			t=0.561	t=1.260	t=3.396	t=2.697
			p=0.575	p=0.208	**p=0.001**	**p=0.007**
Marital status	**Married**	6 -1.4	16.8±2.2	17.5±1.0	39.8±9.3	74.1±11.3
	Single	429-98.6	18.6±2.9	19.1±2.9	47.0±6.6	84.9±9.0
Statistical analysis			t=1.544	t=1.388	t=2.626	t=2.863
			p=0.123	p=0.166	**p=0.009**	**p=0.004**
Grade	**1 . years**	111-25.5	18.4±3.0	18.9±3.1	45.9±6.9	83.3±9.1
	2 .years	132-30.3	18.7±2.8	19.6±3.1	48.5±5.9	86.9±8.5
	3 . years	114-26.2	18.1±3.0	18.5±2.6	45.6±6.8	82.3±9.0
	4 . years	78-17.9	19.3±2.5	19.5±2.7	47.5±6.7	86.4±9.4
Statistical analysis			F=2.877	F=3.369	F=5.199	F=7.185
			p=0.036	**p=0.019**	**p=0.002**	**p=0.000**
The economic situation of the family	**Little**	149-34.3	18.2±2.7	19.1±2.9	46.8±6.4	84.3±8.5
	Equal	259-59.5	18.7±2.9	19.1±2.9	46.8±6.8	84.7±9.3
	Much	27 -6.2	19.7±3.3	19.3±3.3	47.7±7.4	86.8±10.7
Statistical analysis			F=3.173	F=0.052	F=0.230	F=0.873
			p=0.043	p=0.950	p=0.795	p=0.418

Graduated high school	**Science**	23-5.3	19.8±2.8	18.4±2.8	44.7±7.5	83.1±11.9
	Anatolian	307 -70.6	18.4±3.0	19.1±2.9	46.9±6.6	84.6±9.0
	Common	92-21.1	18.6±2.4	19.3±3.0	47.2±6.7	85.3±9.3
	Vocational	13-3.0	20.4±2.5	18.9±3.6	46.6±6.2	86.0±7.9
Statistical analysis			F=3.428	F=0.542	F=0.888	F=0.454
			p=0.017	p=0.654	p=0.447	p=0.715
Suitability of the profession to personal interests	**Not suitable**	57-13.1	19.2±2.7	19.0±2.9	45.8±6.0	84.2±7.8
	Not sure	184-42.3	18.2±2.8	18.9±2.7	46.1±6.5	83.3±8.6
	Suitable	194-44.6	18.8±2.9	19.3±3.2	47.9±6.9	86.2±9.8
Statistical analysis			F=4.352	F=1.013	F=4.201	F=4.869
			p=0.013	p=0.364	**p=0.016**	**p=0.008**

Table 2. Analysis of the correlation between EBP-COQ total and sub-dimensions point averages

Total and sub-dimension of the EBP-COQ	Knowledge	Skill	Attitude
Skill	r=0.310,p=0.514	-	-
Attitude	r=0.130 p=0.007	r=0.292 p=0.000	-
Total	r=0.405 p=0.000	r=0.523 p=0.000	r=0.896 p=0.000

In this study, the average score of nursing students on the sub-dimension of knowledge with regards to EBP was found to be "above average". In accordance with our data, Koota et al. (2019) also found the level of knowledge of emergency nurses regarding EBP above average. When we look at other studies, they emphasized that education is important in terms of encouraging nurses to engage in EBP, but they stated that nurses lack knowledge regarding how to conduct the relevant research and how to evaluate the results (Aydın et al., 2015; Emiroğlu et al., 2005). In a study where the effects of the EBP program over the competencies and perceived barriers of nurses were measured, it was reported that the knowledge and skills of the nurses were improved by about 40% after the program (Van der Goot et al., 2018). For developing EBP knowledge, small group studies, article reviews, criticism and conceptual understanding approaches are deemed important (Hickman et al., 2018). Therefore, in our study, it is thought that the fourth grade students have increased their EBP knowledge averages with the effect of more active participation in the pratices within the internship program.

It was determined that the nursing students' skill sub-dimensions score averages for EBP were above the average. In a study, nurses stated that their EBP skills were insufficient and that they did not use the best evidence in clinical practice (Saunders et al., 2016). In other studies where the nurses' EBP skills' were evaluated; it was stated that the nurses

had difficulty with regards to understanding the statistical analysis process of the researches, interpreting the results, accessing the research results and using these results/findings in the care (Aydın et al., 2015; Emiroğlu et al., 2005; Kelleci et al., 2008). In a study, the students stated that the development of their knowledge and skills which were related to the research depended on taking part in a research project and carrying out the study accompanied by a consultant (Akın & Ege 2008). Moreover, in another study where nursing students were exposed to the EBP course, it was stated that there was a significant improvement in the EBP skills of the students (DuGan, 2019). In this study, taking the research methods course in the second grade and participating in a research project was found to have a positive effect over the nursing students with regards to the related skills.

The mean score of the attitude sub-dimensions of nursing students was found to be "above average". Many studies have stated that – unlike our study – nurses' EBP attitude was below average and that they did not always perform their care in accordance with EBP (Kirk & Nilsen, 2016; Person et al., 2013; Sampson et al.,2014). It was found that 80.6% of the nurses in the study of Kelleci et al. (2008) and 82.8% of the midwives and nurses in the study of Aydın et al. (2015) that patient care and practices were based on evidence. In other studies which evaluated the attitude of nurses after the training on EBP, it was stated that there was an improvement in the EBP attitudes of nurses (DuGan, 2019). It is important for the information to be transformed into practice through continuous and guided EBP learning in both clinical and classroom settings (Iradukunda & Mayers, 2020). In this study, we see the positive effects of taking the research methods course by the nursing students and their involvement in a research project during their undergraduate education on EBP attitude.

When the descriptive features were compared with the sub-dimensions of knowledge, skills and attitudes, the score averages on the knowledge sub-dimension were found to be higher in the 21-22 age group, in vocational high school students and in students who come from families whose income is higher then their expenses. The majority of the students in the age bracket of 21-22 years and above are made up of fourth year students, while the second and third year students make up the minority. It is assumed that the knowledge levels of the students in this age group are high because of the fact that these students took a course on research methods. The higher level of knowledge of single students may be due to the fact that they are able to spend more time on their studies due to having fewer responsibilities in their private lives. Students who come from families whose income is higher than their expenses access learning materials and sources more easily; since having adequate financial means and not having to worry about money issues allow students to enjoy a more comfortable lifestyle as students spend more time on their studies. These factors are thought to affect the knowledge levels of students. The fact that the knowledge sub-dimension point average of vocational high school graduates was higher was a surprising and unexpected result of the study.

In the study conducted, we see that the average scores of fourth year students (19.3 ± 2.5) in the knowledge sub-dimension are higher and that the average scores of second year students in the sub-dimensions of skills (19.6 ± 3.1) and attitudes (48.5 ± 5.9) are higher in comparison to students from other groups. In a study conducted for nursing students, final year students think that it is important to do research in terms of nursing practices. It was determined that 52.8% of the students used the research results in practice and 22.2% of them were doing research (Akın & Ege, 2008). We believe that the reason why second year students have higher score averages in the sub-dimensions of skills and attitudes in comparison to fourth year students may be that the fourth year students spend more time at the clinic and they are more exposed to obstacles with regards to implementation of EBP and that they do not focus anywhere near as much as they should on work-oriented practices that bring about results and they avoid taking responsibility for evidence-based patient care, by choosing the easy way through preferring traditional-conventional clinical practices. In contrast, second year students are enthusiastic in terms of engaging in patient rounds, they are not yet aware of traditional practice and they are willing to apply theory to practice on account of their not having witnessed obstacles with regards to implementing EBP.

In the study, the average scores of female and single students

in the attitude sub-dimension were found to be higher. When the studies on male student nurses are reviewed, it is seen that the male students do not like the nursing profession and that they chose this profession merely because of post-graduation employment prospects, the majority seeing themselves becoming managers or academicians after graduation (Koç et al., 2020). We assume that the reason why the average scores of female students in the knowledge category are higher than those of male students is related to the male students' perceptions of the nursing profession.

In the survey, 44.6% stated that the profession matched their personal interests. The knowledge score averages of those not finding the nursing profession suited to their personal interests were found to be higher. However, the attitude sub-dimension scores and the total score averages were found to be higher for those who find the nursing profession suited to their occupational interests. A study by Özdelikara, Ağaçdiken and Aydın (2016) emphasized that students who voluntarily chose their profession were much more enthusiastic about their profession, they enjoyed a higher level of job satisfaction and they exhibited more professional attitudes, discovering their own talents and potentials. Based on these results, it can be inferred that the suitability of the chosen profession to one's field of interest is effective in providing evidence-based healthcare in a clinical setting, and that choosing a profession which matches one's personal interests matter in terms of professional development.

A significant difference was found between the total score average of the EBP-COQ and the "Female", "Single" and "Second grade" students. In the study, we can reach the conclusion that the "second grade", "single" and "female" students are more competent in EBP.

When we look at the correlations between the sub-dimensions of the EBP-COQ and the total mean scores; there was a positive relationship between skill and attitude, knowledge and attitude sub-dimensions and all sub-dimensions of the scale and total mean scores. Information positively affects EBP (Alqahtani et al., 2020). Similar to the findings of this study, it was stated that the nurses' having sufficient knowledge about the research positively affected their ability to use the research findings in practice. In addition, nurses who report that they have sufficient skills use research findings by transforming these findings into attitudes in patient care (Emiroğlu et al., 2005). In our study, it is emphasized that having sufficient knowledge and skills about the EBP increases the EBP attitude.

Evidence-based pratice competencies of nursing students were found to be "above average" in this study. As in other areas of the nursing department, it is necessary for the curriculum for research education to be designed in a way to involve both theory and practice (Oh EG & Yang, 2019). Another study, emphasized the need to provide research education with an integrated approach spanning four years at the undergraduate level in order to provide students with EBP skills. The ability of the first year student to access and use the literature; the ability of the second year student to develop the ability to access to the evidence in the literature related to clinical problems; the ability of the third year student who had clinical practice experience to ask questions about clinical problems, interpret evidence and use them in the clinic; and finally, the fourth year student is expected to be ready to obtain skills in critical reading and evaluating research reports and articles, interpreting their findings and putting them into practice (Burns & Foley, 2005). In a study, the areas where students felt partly sufficient was that of interpreting the research reports (70.8%), using their findings in clinical practice (65.3%) and conducting research (54.1%) (Akın & Ege, 2008). In the faculty where this study was conducted, students take the course of "Epidemiological Research Methods" in the first half of the second year and "Research and Biostatistics in Nursing" in the second half of their second year and while participating in a research project. At the university where the study was conducted, the students are regularly supervised by the department professors during their internships. They are encouraged to identify clinical problems, systematically review problems, interpret research findings, and put their findings into practice over time in the clinical setting. We assume the students' high EBP-COQ average scores may have resulted from these practices.

In the study, the knowledge, skills and attitudes of the nursing students regarding evidence-based pratice competencies were found as above the average. Universities, nurse leaders and policy makers have important roles in equipping nursing

students and even nurses with adequate knowledge, skills, and attitude regarding EBP. The innovative healthcare system requires a patient-centric care based on scientific evidence to achieve high-quality care and efficiency. The Institute of Medicine (IOM) highlights, EBP as one of the core competencies for healthcare providers, where 90% of all clinical evidence is based on scientific evidence (Institute of Medicine Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine, 2011). In our country, no such center exists in order to guide nursing students on EBP. Faculties and hospitals should cooperate in order to establish such a center. A working group which conducts scientific studies should be created and students should actively take responsibility in these groups. An internet program which will be accessible to the students should be created that includes the results of systematic research, and which will be able to present clinically specific practices in a practical way. Also, in order to increase the dissemination and prevalence of this information, it is important to print EBP journals which are updated periodically.

CONCLUSION

The findings of this study, which we think will contribute significantly to the literature, have been discussed with the evidence-based practice competencies of the nursing students, who are the future nurse candidates. Considering the results of the research; consultancy should be provided in order to support and encourage disadvantaged groups of students on knowledge, skills and attitude with regards to EBP. Theoretically and practically, courses in order to increase "EBP Competence" should be added to the undergraduate curriculum and should be extended over four years. The department professors should guide nursing students during the integration of EBP into nursing care and monitor how much of the clinical practices which were executed by the students had the quality of being evidence-based. It is also recommended that students should take part in research projects and participate in scientific activities in order to increase their EBP competence.

The results cannot be generalized to all students, since the study was conducted only with nursing students at one university. It is recommended that these findings regarding students' knowledge, skills and attitudes about EBP should be further validated by future studies which involve nursing students in different universities.

AUTHOR CONTRIBUTION

Study design: YA, ZG; Data Collection and Evaluation: YA, ZG; Drafting of the Article: YA; Proofreading and Corrections: YA, ZG.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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LIMITATION OF THE STUDY

Research results can only be generalized to the research universe.

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