

Nursing Students' Evidence Based Practices Competencies and Affecting Factors: A Cross-Sectional Study

Hemşirelik Öğrencilerinin Kanıta Dayalı Uygulama Yeterlilikleri ve Etkileyen Faktörler: Kesitsel Bir Çalışma

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ABSTRACT Objective: The study aimed to examining nursing students' knowledge, skill and attitude competencies regarding evidence-based practices and the related factors affecting this. **Material and Methods:** The cross-sectional study's participants consisted of 445 student nurses from three government universities in the north of Türkiye in the academic year 2020-2021. Data were collected with "Participant Information Form" and "Evidence-Based Practice Evaluation Competence Questionnaire" from students via email or social media. Descriptive statistics, Pearson and Spearman correlation, t-test, Mann-Whitney U, analysis of variance and Kruskal-Wallis test were used to evaluate the data. **Results:** The total mean score of the nursing students on the Evidence-Based Practice Evaluation Competence Questionnaire was determined as 87.97±10.11, and the students' evidence-based practice competency was above a medium level. It was determined that the knowledge, skill and attitude sub-dimensions and total scale scores of the students who obtained information from the internet or books, from their colleagues or from their own experiences were high. It was found that most of the students thought that evidence-based practice would increase care quality, trust in the nursing profession, work satisfaction and professionalism, reduce clinical errors to a minimum and create a legal basis. **Conclusion:** It was established that nursing students had an above average level of knowledge, skill and attitude competencies regarding evidence-based practice. It was found that there was a relationship between students receiving training or information about evidence-based practices from anywhere and their knowledge, skills and attitude competencies. It is recommended that studies should be conducted aimed at developing students', who are future nurses, knowledge, skills and attitude on evidence-based practice competency.

ÖZET Amaç: Bu çalışma, hemşirelik öğrencilerinin kanıta dayalı uygulamaya yönelik bilgi, beceri ve tutum yetkinliklerini ve bunları etkileyen ilişkili faktörleri incelemek amacıyla yapıldı. **Gereç ve Yöntemler:** Kesitsel tipteki çalışmanın katılımcılarını, 2020-2021 eğitim-öğretim yılında Türkiye'nin kuzeyindeki üç devlet üniversitesinden 445 öğrenci hemşire oluşturdu. Veriler, öğrencilerden "Katılımcı Bilgi Formu" ve "Kanıta Dayalı Uygulama Değerlendirme Yetkinliği Ölçeği" ile e-posta veya sosyal medya aracılığıyla toplandı. Verilerin değerlendirilmesinde tanımlayıcı istatistikler, Pearson ve Spearman korelasyonu, t-testi, Mann-Whitney U, varyans analizi ve Kruskal-Wallis testi kullanıldı. **Bulgular:** Hemşirelik öğrencilerinin Kanıta Dayalı Uygulama Değerlendirme Yetkinliği Ölçeği toplam puan ortalaması 87,97±10,11 ile öğrencilerinin orta düzeyin üzerinde kanıta dayalı uygulamaya yetkinliğine sahip oldukları belirlendi. İnternette veya kitaplardan bilgi almış olan, meslektaşlarından ya da kendi deneyimlerinden faydalanan öğrencilerin bilgi, beceri ve tutum alt boyutları ile toplam ölçek puanlarının yüksek olduğu saptandı. Öğrencilerin büyük çoğunluğu kanıt temelli hemşirelik uygulamalarının; bakım kalitesini, hemşirelik mesleğine olan güveni, iş doyumunu ve profesyonelleşmeyi artıracaklarını, klinik hataların en aza indirilmesini ve yasal dayanak oluşturacaklarını düşündükleri belirlendi. **Sonuç:** Hemşirelik öğrencilerinin kanıta dayalı uygulamaya ilişkin bilgi, beceri ve tutum yeterliliklerinin ortalamasının üzerinde olduğu belirlendi. Kanıta dayalı uygulamalara ilişkin herhangi bir yerden eğitim veya bilgi alan öğrencilerin bilgi, beceri ve tutum yeterlilikleri arasında bir ilişki olduğu bulundu. Geleceğin hemşireleri olan öğrencilerin kanıta dayalı uygulamaya yeterliliğine ilişkin bilgi, beceri ve tutumlarını geliştirmeye yönelik çalışmaların yapılması önerilmektedir.

Keywords: Evidence-based practice;
nursing; nursing students

Anahtar Kelimeler: Kanıta dayalı uygulama;
hemşirelik; hemşirelik öğrencileri

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Evidence-based nursing practice (EBP) means bringing implementing and evaluating effective interventions in nursing which are in line with the scientific principles of nursing.¹ EBP is stated as an important standard in the provision of the best and most effective approach for nursing practices.^{2,3} It is also defined as a decision making process for patient care using the best evidence available together with the patient's own values and preferences to provide guidance in patient care.^{4,5} The development of EBPs is of great importance from the viewpoint of the profession for improving the safety and quality of health services.⁶ The use of EBPs in the health care system provides an opportunity for an increase in the quality of care services, an improvement in health outcomes, and an increase in nurses' satisfaction levels.⁷ To safely implement the health service roles of nurses, EBP competency is necessary.^{6,8}

In Türkiye, nursing care has been guaranteed with the regulation "Nurses will plan, implement, assess and check nursing care based on evidence".⁹ Integration of practices in the nursing curriculum must also be assured.^{9,10} In order to be able to develop an EBP curriculum and effective strategies, it is necessary to have a good understanding of the state of students' knowledge, skills, attitude and use of EBP.¹¹

There are national and international studies examining the knowledge, skills, behavior or attitudes, awareness, and competencies and affecting factors relating to evidence-based nursing practices.¹²⁻¹⁸ It is of great importance for nursing students to understand the importance of EBP, for it to be developed, and to rectify deficiencies in this area by evaluating students' knowledge, skills and attitudes on the topic of EBP. However, except for a few studies in Türkiye, there are no adequate studies investigating the EBP competence of nursing students.^{18,19} Therefore, this study was conducted with the aim of examining the EBP competencies of nursing students, formed from their knowledge, skills and attitudes and factors affecting this.

MATERIAL AND METHODS

DESIGN AND PARTICIPANTS

The study was designed as a cross-sectional design. The population of the study was made up of first,

second, third and fourth year students studying at the nursing departments of three government universities located in the north of Türkiye in the academic year 2020-2021 (n=900). The sample size was determined as at least 363 students, with a 99% confidence interval and 80% population representation capability (OpenEpi version 3, Atlanta, GA, USA, www.openepi.com, which is available for public use). The research was completed with 445 students, who were selected from the population by the non-probability random sampling method, and who participated willingly and voluntarily in the study. The inclusion criteria were being a nursing students, voluntarily and willingly participating in the study, not having a health problem that would prevent participation in the study, having access to the internet and actively using social media networks.

INSTRUMENTS

Participants' Information Form: On this information form, prepared by the researchers to determine the personal characteristics of the participants, questions were asked on their age, gender, marital status, year of study, knowledge and education on EBPs, their sources of information on EBP, and the contributions of EBPs to the nursing profession.^{5,10,19}

Evidence-Based Practice Evaluation Competence Questionnaire (EBP-COQ): This scale, developed by Ruzafa-Martinez et al., examines EBP competency.¹⁰ Validity and reliability of the Turkish version were tested by Yıldız and Güngörmüş.²⁰ The scale is of five-way Likert type (1=strongly disagree, 5=strongly agree), and includes 25 items. It covers the three areas of EBP knowledge, skill and attitude. The lowest and highest possible scores are 25 and 125. Negative items on the scale are scored in reverse. A high score on the scale indicates a good self-assessment of EBP competencies. The internal consistency reliability coefficient is 0.92 for the original scale.¹⁰ In this study, the internal consistency level of the scale was found to be 0.94. Cronbach's alpha coefficient was found to be 0.798.

DATA COLLECTION METHOD

In order to conduct the study, informed consent was obtained from the students who met the inclusion cri-

teria, and data collection was performed online between February and April 2021. The structured questionnaire forms, created on Google Forms (Google, USA), were sent to the students by email or social media networks, and the students were asked to complete them.

ETHICAL ASPECT OF THE RESEARCH

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects were approved by the Amasya University Ethics Committee (date: January 22, 2021, no: E-2270). An informed consent, which states that the purpose and benefits of the study, their role in the study, their information will be kept confidential, and that the principle of volunteering is taken care of in participating in the study, was obtained from all subjects just before the completion of the questionnaire. The students who accepted to participate in the study saw the Informed Consent Form as the first page when they clicked on the link, and after giving their approval to the form, they reached the data collection forms. Participants who did not agree to participate in the study or did not want their data to be used after participating were excluded from the study.

DATA ANALYSIS

The program R version 2.15.3 (R Core Team, 2021. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria) was used for statistical analysis. Descriptive statistics (percentage, frequency, average), Pearson and Spearman correlation, t-test, Mann-Whitney U, analysis of variance and Kruskal-Wallis test were used to evaluate the data. In evaluating variables showing normal distribution between two groups, the independent groups t test was used, in evaluating between more than two groups, one-way variance analysis was used, and if significance was observed, the Bonferroni test was used to determine the source of the significance. In evaluating variables which did not show normal distribution between two groups, the Mann-Whitney test was used; in evaluating between more than two groups, the Kruskal-Wallis test was used, and when significance was observed, the Dunn-Bonferroni was used to deter-

mine the source of the significance. In determining the level of correlation between quantitative variables, Pearson and Spearman analysis was used. In determining the levels of internal consistency of the scale, the Cronbach alpha coefficient was used. Statistical significance was taken as $p < 0.05$.

RESULTS

The mean age of the participants was 20.77 ± 1.64 years, and 80% were female (Table 1).

It was found that the mean scores on the EBP-COQ sub-dimensions were 50.88 ± 6.72 for attitude, 19.15 ± 3.33 for skill, and 17.94 ± 4.00 for knowledge, and for the scale as a whole the mean score was 87.97 ± 10.11 (Table 2).

No statistically significant difference was found in EBP-COQ sub-dimension and total scores according to the gender of the participants ($p > 0.05$). The sub-dimension of attitude of the females was higher than that of the males, but their score on the sub-di-

TABLE 1: Descriptive characteristics.

| | Minimum-Maximum | $\bar{X} \pm SD$ |
|--|-----------------|------------------|
| Age | 18-29 | 20.77 ± 1.64 |
| Years in the profession | 1-10 | 2.05 ± 2.17 |
| | n | % |
| Gender | | |
| Female | 356 | 80.0 |
| Male | 89 | 20.0 |
| Year of study | | |
| 1 st year | 109 | 24.5 |
| 2 nd year | 101 | 22.7 |
| 3 rd year | 110 | 24.7 |
| 4 th year | 125 | 28.1 |
| Place of residence | | |
| Provincial capital | 218 | 49.0 |
| Small town | 145 | 32.6 |
| Village | 82 | 18.4 |
| Are there other health workers in your family? | | |
| No | 13 | 70.3 |
| Mother | 6 | 1.3 |
| Father | 5 | 1.1 |
| Brother/sister | 49 | 11.0 |
| Other | 72 | 16.2 |
| Are you working as a nurse now? | | |
| Yes | 19 | 4.3 |
| No | 426 | 95.7 |

SD: Standard deviation.

TABLE 2: Participants' Evidence-Based Practice Evaluation Competence Questionnaire sub-dimension and total scores.

| | Possible range | Minimum-Maximum (Median) | $\bar{X}\pm SD$ | $\bar{X}\pm SD$ (Out of 5) | Internal consistency |
|-----------|----------------|--------------------------|-----------------|----------------------------|----------------------|
| Attitude | 13-65 | 28-65 (52) | 50.88±6.72 | 3.91±0.52 | 0.885 |
| Skill | 6-30 | 6-30 (18) | 19.15±3.33 | 3.19±0.56 | 0.822 |
| Knowledge | 6-30 | 6-30 (18) | 17.94±4.00 | 2.99±0.67 | 0.864 |
| Total | 25-125 | 53-123 (89) | 87.97±10.11 | 3.52±0.40 | 0.937 |

SD: Standard deviation

mension of knowledge was lower ($p=0.005$ and $p=0.017$ respectively). A statistically significant difference was found in EBP-COQ sub-dimension scores of attitude and skill according to the participants' year of study ($p=0.009$ and $p=0.001$ respectively) (Table 3).

The attitude and skill sub-dimension scores and the total scale scores of participants who thought that the theoretical knowledge which they had obtained was adequate for professional practice ($p=0.004$, $p<0.001$ and $p<0.001$ respectively) and of those who thought that evidence was important in nursing practices were found to be higher. The EBP-COQ attitude, skill and knowledge sub-dimension scores and total scale scores of those who had previously had education on EBPs were found to be higher ($p<0.001$, $p<0.001$, $p=0.006$ and $p<0.001$ respectively). The EBP-COQ attitude, skill and knowledge sub-dimension scores and scale total scores of those who got their information from the internet or from books were found to be higher ($p<0.001$, $p<0.001$, $p<0.001$ and $p<0.001$ respectively). The attitude and skills sub-dimension scores and the total scale scores of participants whose source of knowledge was specialists was found to be higher ($p=0.035$, $p=0.001$ and $p=0.007$ respectively) (Table 4).

The attitude and skill sub-dimension and scale total scores of those who thought that all workers should be informed on EBP and that they should be included in care ($p<0.001$, $p=0.014$ and $p=0.002$ respectively), those who thought that research results should be used in practice with the use of critical thinking skill ($p<0.001$, $p<0.001$ and $p<0.001$ respectively), and those who thought that place must be given in in-service training to the importance of the effect of EBP on treatment and care were found to be higher (Table 5).

DISCUSSION

It was found that the mean total EBP-COQ score of the nursing students was 87.97 ± 10.11 . This figure was found to be 89.78 in a study with nursing students by Yıldız and Güngörmüş, 99.43 in a study with nurses by Jeong et al., 83.00 in a study by Chrisnawati et al., 84.7 in a study with nursing students by Ateşeyan and Güngörmüş, 83.75 in a study with nursing students by Aslan and Pekince.^{12,18-21} It is thought that this variability is related to the year of the studies, different sample groups, the sample group having obtained information on EBP from different sources, and the way the research was conducted.

It was found that the mean scores on the EBP-COQ sub-dimensions of knowledge, skill and attitude were 17.94 ± 4.00 , 19.15 ± 3.33 and 50.88 ± 6.72 respectively. In parallel with these results, they were found to be, respectively, 21.57 ± 3.65 , 24.05 ± 3.8 and 53.81 ± 6.30 by Jeong et al., 21.54 ± 2.15 , 20.22 ± 3.46 and 41.22 ± 4 by Chrisnawati et al., and 18.63 ± 3.29 , 19.70 ± 3.67 and 48.87 ± 7.54 by Aslan and Pekince.^{12,18,21} Because a range of 13-65 expresses attitude on the EBP-COQ, it can be said that in our study, students' competency attitudes were high, and their knowledge and skill sub-dimensions were at a medium level. It has been concluded in international studies that nurses who have a positive attitude to EBP are more likely to practice it.^{4,5,22} Also, the attitude sub-dimension and total scale scores were found to be high for those who thought that evidence was important in nursing practice and that theoretical knowledge was sufficient for professional practices, and for those whose source of information was experts in the field, their experiences and their colleagues. It is thought that the use of these sources of information by students, the increase in awareness re-

TABLE 3: Comparison of participants' Evidence-Based Practice Evaluation Competence Questionnaire sub-dimension and total scores by descriptive characteristics.

| | Attitude | Skill | Knowledge | Total |
|--|------------------------------|------------------------------|------------------------------|------------------------------|
| Age | | | | |
| r | 0.063 | 0.112 | 0.001 | 0.079 |
| p value | 0.184 | 0.018* | 0.986 | 0.096 |
| | $\bar{X}\pm SD$ | $\bar{X}\pm SD$ | $\bar{X}\pm SD$ | $\bar{X}\pm SD$ |
| Gender | | | | |
| Female | 51.33±6.53 | 19.22±3.42 | 17.71±4.08 | 88.26±10.1 |
| Male | 49.08±7.18 | 18.9±2.93 | 18.84±3.56 | 86.82±10.12 |
| t | 2.855 | 0.882 | -2.400 | 1.204 |
| p value | 0.005* | 0.379 | 0.017* | 0.229 |
| Year of study | | | | |
| 1 st year | 49.32±6.56 | 19.03±2.47 | 17.69±4.16 | 86.04±8.97 |
| 2 nd year | 51.22±6.59 | 18.68±3.28 | 18.46±3.77 | 88.36±9.41 |
| 3 rd year | 50.56±6.53 | 18.6±3.69 | 16.97±3.96 | 86.14±10.33 |
| 4 th year | 52.26±6.88 | 20.13±3.51 | 18.58±3.94 | 90.97±10.73 |
| F | 3.946 | 5.465 | 4.003 | 6.483 |
| p value | 0.009* | 0.001* | 0.008* | <0.001* |
| | Median (Minimum, Maximum) | Median (Minimum, Maximum) | Median (Minimum, Maximum) | Median (Minimum, Maximum) |
| Are the any other health workers in your family? | | | | |
| No | 52 (46, 55) | 18 (18, 21) | 18 (15, 20) | 88 (81, 93) |
| Mother | 49.5 (46, 50) | 19 (18, 20) | 20.5 (20, 21) | 90 (84, 91) |
| Father | 44 (39, 48) | 18 (17, 18) | 18 (18, 20) | 75 (75, 81) |
| Brother/sister | 53 (48, 54) | 18 (18, 20) | 19 (16, 21) | 90 (83, 93) |
| Other | 53 (47, 56.5) | 18 (18, 20) | 18 (16, 21) | 92 (82.5, 95.5) |
| χ^2 | 6.742 | 5.194 | 4.818 | 6.138 |
| p value | 0.150 | 0.268 | 0.306 | 0.189 |
| Are you currently working as a nurse? | | | | |
| Yes | 53 (46, 59) | 20 (18, 25) | 20 (18, 23) | 91 (84, 107) |
| No | 52 (46, 55) | 18 (18, 20) | 18 (16, 20) | 88 (81, 93) |
| z | -1.105 | -2.365 | -2.464 | -1.970 |
| p value | 0.269 | 0.018* | 0.014* | 0.049* |

*p<0.05; r: Pearson correlation coefficient; †Independent groups t-test; ‡One-way variance analysis; §Kruskal-Wallis test, results presented as median (first quarter, third quarter); ¶Mann-Whitney U test, results presented as median (first quarter, third quarter); SD: Standard deviation.

cently of the importance of EBPs in patient care, and the emphasis given to this topic in degree education have contributed to the development of an attitude to EBP.

It is seen in the literature that factors such as age, gender, education, year of study, and accessing the internet and journals affect students' knowledge, skill and attitude regarding EBP.²³⁻²⁵ In the present study, it was concluded that things like age, year of study, working as a nurse, thinking that evidence is important in nursing practices, not having obtained any information on EBP, or having received information on

EBP from the internet, books or school classes related knowledge, skill or attitude. Also, examining the factor of gender, it was found that the attitude sub-dimension scores of female students were higher than those of males, but their knowledge sub-dimension scores were lower. In contrast, it was found in a study by Labrague et al. that the knowledge sub-dimension scores of female nursing students was higher than that of males.²⁵ It was found in this study that the attitude sub-dimension scores of fourth-year students were higher than those of first-year students, and their skill sub-dimension scores were higher than those of third-

TABLE 4: Correlation between students' Evidence-Based Practice Evaluation Competence Questionnaire scores and various factors.

| Characteristic | Attitude | Skill | Knowledge | Total |
|---|--|--|--|--|
| | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) |
| Do you think that the theoretical knowledge which you have received is enough for professional practices? | | | | |
| Yes | 51.75±6.02 | 19.68±3.38 | 18.16±3.97 | 89.59±9.62 |
| No | 49.87±7.34 | 18.54±3.17 | 17.67±4.03 | 86.08±10.35 |
| t | 2.925 | 3.646 | 1.287 | 3.697 |
| p value | 0.004* | <0.001* | 0.199 | <0.001* |
| Is evidence important in nursing practices? | | | | |
| Yes | 52 (46, 55) | 18 (18, 21) | 18 (16, 21) | 89 (82, 94) |
| No | 47 (43, 49) | 18 (18, 19) | 18 (16, 20) | 84 (75, 87) |
| z | -2.321 | -0.623 | -0.098 | -1.819 |
| p value | 0.020* | 0.533 | 0.922 | 0.069 |
| Have you previously had education on evidence-based practices? | | | | |
| No | 49.39±6.71 | 18.51±2.66 | 17.36±4.08 | 85.27±8.96 |
| Yes | 52.14±6.48 | 19.69±3.72 | 18.42±3.88 | 90.24±10.47 |
| t | -2.423 | 0.339 | -1.566 | -2.417 |
| p value | 0.016* | 0.735 | 0.118 | 0.016* |
| I have previously got information on evidence-based practices from the internet | | | | |
| Yes | 52.1±6 | 19.88±3.13 | 18.85±3.42 | 90.83±9.48 |
| No | 49.74±7.16 | 18.47±3.37 | 17.07±4.31 | 85.28±9.96 |
| t | 3.775 | 4.571 | 4.830 | 6.013 |
| p value | <0.001* | <0.001* | <0.001* | <0.001* |
| I have previously got information on evidence-based practices from books | | | | |
| Yes | 52.45±6.07 | 19.78±3.41 | 18.7±3.84 | 90.93±9.89 |
| No | 49.16±6.98 | 18.47±3.1 | 17.1±4.01 | 84.72±9.34 |
| t | 5.296 | 4.241 | 4.296 | 6.794 |
| p value | <0.001* | <0.001* | <0.001* | <0.001* |
| I have previously got information on evidence-based practices from school classes | | | | |
| Yes | 51.93±6.41 | 19.44±3.49 | 18.18±3.89 | 89.54±10.17 |
| No | 48.54±6.83 | 18.52±2.85 | 17.39±4.2 | 84.45±9.06 |
| t | 5.039 | 2.917 | 1.914 | 5.033 |
| p value | <0.001* | 0.004* | 0.056 | <0.001* |
| My source of information on nursing practices is my colleagues' knowledge | | | | |
| Yes | 51.98±6.25 | 19.62±3.33 | 18.39±3.98 | 89.99±9.65 |
| No | 48.84±7.09 | 18.27±3.16 | 17.08±3.92 | 84.19±9.89 |
| t | 4.808 | 4.226 | 3.325 | 5.989 |
| p value | <0.001* | <0.001* | 0.001* | <0.001* |
| My source of information on nursing practices is the internet | | | | |
| Yes | 50.98±6.67 | 19.19±3.35 | 18.03±3.86 | 88.2±10.01 |
| No | 50±7.14 | 18.82±3.14 | 17.11±5.07 | 85.93±10.85 |
| t | 0.930 | 0.702 | 1.177 | 1.430 |
| p value | 0.353 | 0.483 | 0.245 | 0.154 |
| My source of information on nursing practices is research | | | | |
| Yes | 51.07±6.74 | 19.32±3.48 | 18.1±3.91 | 88.49±10.15 |
| No | 49.81±6.56 | 18.19±2.13 | 17.04±4.43 | 85.04±9.41 |
| t | 1.425 | 3.579 | 1.987 | 2.589 |
| p value | 0.155 | <0.001* | 0.048* | 0.010* |
| My source of information on nursing practices is experts in the field | | | | |
| Yes | 51.33±6.85 | 19.45±3.63 | 17.99±4.13 | 88.76±10.61 |
| No | 49.87±6.31 | 18.47±2.38 | 17.81±3.69 | 86.16±8.62 |
| t | 2.114 | 3.353 | 0.425 | 2.730 |
| p value | 0.035* | 0.001* | 0.671 | 0.007* |

TABLE 4: Correlation between students' Evidence-Based Practice Evaluation Competence Questionnaire scores and various factors (continued).

| Characteristic | Attitude | Skill | Knowledge | Total |
|---|--|--|--|--|
| | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) |
| Do you know how to scan the literature to access research results? | | | | |
| Yes | 52.25±6.51 | 20.24±3.44 | 18.83±3.92 | 91.31±10.25 |
| No | 49.57±6.67 | 18.11±2.87 | 17.08±3.9 | 84.77±8.88 |
| ^a t | 4.279 | 7.080 | 4.698 | 7.210 |
| p value | <0.001* | <0.001* | <0.001* | <0.001* |
| Do you think that evidence-based practices make patient care easier or support it? | | | | |
| Yes | 52 (47-55) | 18 (18-21) | 18 (16-21) | 89 (82-94) |
| No | 44 (39-51) | 18 (18-21) | 19 (18-20) | 84 (75-87) |
| ^d z | -3.553 | -0.062 | -0.298 | -2.531 |
| p value | <0.001* | 0.951 | 0.766 | 0.011* |
| Do you think that evidence-based practices will be of benefit in the future in professional practices which you will implement? | | | | |
| Yes | 52 (47-55) | 18 (18-21) | 18 (16-21) | 89 (82-94) |
| No | 42 (39-44) | 18 (18-18) | 19.5 (18-20) | 78 (75-84) |
| ^d z | -4.302 | -0.883 | -0.764 | -3.335 |
| p value | <0.001* | 0.377 | 0.445 | 0.001* |
| Do you subscribe to a journal on nursing or nursing research? | | | | |
| Yes | 50.61±9.44 | 19.79±2.87 | 19.42±3.24 | 89.82±13.23 |
| No | 50.91±6.47 | 19.1±3.36 | 17.82±4.04 | 87.83±9.82 |
| ^a t | -0.179 | 1.139 | 2.229 | 0.847 |
| p value | 0.859 | 0.255 | 0.026* | 0.403 |

*p<0.05; r: pearson correlation coefficient; ^aIndependent groups t-test; ^dMann-Whitney U test, results presented as median (first quarter, third quarter).

year students. It was concluded in previous studies that as the education level rose, knowledge, skill and use of EBP increased.^{26,27} This result is similar to the findings of the present research. Previous studies showed that postgraduate education was related to EBP knowledge and skill, and at the same time, a number of studies confirmed that the elements of knowledge, skill and attitude were inseparably linked in EBP, and that they completed each other.^{2,27-29} In the literature, it is seen that there is a relation between knowledge and skill and EBP, and it is predicted that giving more education to nursing students will affect their EBP knowledge and increase their attitudes.²⁵

In this study, the scale total and sub-dimension scores of students who had received no previous education on EBP were found to be lower than the scores of other students. In a study conducted in Australia with university nursing students, it was shown that not only did EBP education programs develop

students' skill and EBP use, it could also reduce obstacles met with regard to EBPs.³⁰ It is thought that in this regard, students receiving education on EBP, taking part in scientific meetings and scanning the literature will make important contributions to education as an individual questioning in both theoretical and practical classes.

When students were asked in the present study about their sources of knowledge for EBPs, the first three were textbooks, the internet, and research articles. The participants' knowledge and skill sub-dimension scores were found to be high when they made use of research articles and books. In the literature, it is stated that research results are frequently accessed to obtain information on EBPs, and that the use of research will increase in education and implementation units when greater opportunities are given.²³ Also, it was reported in a study by McCleary and Brown that research classes given to students during nursing education positively affected students'

TABLE 5: What must be done to generalize EBP in nursing services and the EBP-COQ.

| Characteristic | Attitude | Skill | Knowledge | Total |
|--|--|--|--|--|
| | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) | $\bar{X}\pm SD$ Median (Minimum, Maximum) |
| All workers should be informed on evidence-based practices and these should be included in care. | | | | |
| Yes | 52 (47-55) | 18 (18-21) | 18 (16-21) | 89 (82-94) |
| No | 46 (39-51) | 18 (17-18) | 19 (17-20) | 84 (75-87) |
| $^d z$ | -3.564 | -2.468 | -0.231 | -3.074 |
| p value | <0.001* | 0.014* | 0.817 | 0.002* |
| Nurses should devote time to reading and research. | | | | |
| Yes | 52 (47-55) | 18 (18-21) | 18 (16-21) | 89 (82-94) |
| No | 46 (39-48) | 18 (17-18) | 18 (17-20) | 78 (75-84) |
| $^d z$ | -3.100 | -2.327 | -0.044 | -2.746 |
| p value | 0.002* | 0.020* | 0.965 | 0.006* |
| Nurses should use research results in practice with the use of critical thinking skill. | | | | |
| Yes | 53 (47-55) | 18 (18-21) | 18 (16-21) | 89 (82-94) |
| No | 46 (36-48) | 17.5 (17-18) | 16.5 (15-20) | 79 (69-84.5) |
| $^d z$ | -3.850 | -3.997 | -1.594 | -4.100 |
| p value | <0.001* | <0.001* | 0.111 | <0.001* |
| Place must be given in in-service training to the importance of the effect of EBP on treatment and care. | | | | |
| Yes | 52 (47-55) | 18 (18-21) | 18 (16-21) | 89 (82, 94) |
| No | 43.5 (39-53) | 18 (17.5-18) | 18.5 (17.5-20) | 79.5 (75-88.5) |
| $^d z$ | -2.732 | -1.809 | -0.143 | -2.529 |
| p value | 0.006* | 0.071 | 0.886 | 0.011* |

*p<0.05; ^dMann-Whitney u test, results presented as median (first quarter, third quarter); EBP-COQ: Evidence-Based Practice Evaluation Competence Questionnaire.

attitudes to the use of research results.³¹ In other studies conducted in this field, it is reported that the scores for attitude to evidence-based nursing of students taking research classes increased, and that they made greater use in the field of the knowledge which they obtained.^{18,32-34} It is thought that in line with the results obtained, educating students on scanning the literature and performing research will encourage students on critical thinking and in this way contribute to the quality of patient care.

It was found that the attitude sub-dimension and total scale scores of those who thought that EBPs made patient care easier or supported it were higher. Similarly, Ashktorab et al. and Hickman et al. reported that students' reliability levels in decision making increased from when they were able to perform research correctly, and that this improved patient outcomes.^{2,35} The EBP competence of nursing students, it was recommended that nursing educators should cooperate by forming partnerships with rele-

vant shareholders, because the implementation of EBP competence strengthened clinical experiences. Thus, it must be understood that EBPs are an important competency for nursing students. Also, it is essential that evidence-based theoretical knowledge should be supported in universities by practices in the patient care process.

It was found in this study that the students' EBP-COQ knowledge sub-dimension scores were high according to whether they subscribed to a journal on nursing or nursing research. Similarly, Aslan and Pekince, in a study with 450 nursing students, found that the knowledge sub-dimension scores of nursing students who wanted to take part in scientific events, who read up-to-date articles, or who were members of relevant professional organizations were higher.¹⁸ The basis of generalization of EBPs can be achieved by forming professional associations, widening the use of scientific sources from student years, and conducting awareness studies.

LIMITATIONS

Limitations of the research are that the research results can only be generalized to the sample group, and because it was a cross-sectional study, cause and effect relationships cannot be established. Also, the difficulty of contacting the students and the collection of data online limitation of the study.

CONCLUSION

It was concluded that the students participating in the study had an above medium level of EBP competency. It was also concluded that factors such as age, year of study, working as a nurse, thinking that evidence was important for nursing practices, not having received any information on EBP, or having obtained information about EBP from the internet, books, or school classes related the students' knowledge, skill or attitude competencies on EBP. It was seen that factors such as taking part in scientific activities, being members of professional associations or subscribing to journals had a positive effect on students' attitudes to EBP. In line with these results, students' EBP competencies, comprising knowledge, skill and attitude, should be developed to be reflected in care, health spending, and care quality, and this should be integrated into the nursing curriculum. Greater space should be given to EBP in the education curriculum of nursing students, and an opportunity should be provided for students to use in practice the theoretical knowledge which they have learned. In addition, students should be supported in participating and taking an active role in scientific meetings and encouraged to follow professional publications and literature.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz; **Design:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz; **Control/Supervision:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz; **Data Collection and/or Processing:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz, Tuğba Aydın Yıldırım; **Analysis and/or Interpretation:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya; **Literature Review:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz, Tuğba Aydın Yıldırım; **Writing the Article:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya; **Critical Review:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz, Tuğba Aydın Yıldırım; **References and Fundings:** Gözde Yıldız Daş Geçim, Zehra İncedal Sonkaya, Ayten Yılmaz Yavuz, Tuğba Aydın Yıldırım.

REFERENCES

- Burns N, Grove SK. Understanding Nursing Research-ebook: Building an Evidence-Based Practice. 5th ed. Elsevier Health Sciences; 2010. [Link]
- Ashktorab T, Pashaepoor S, Rassouli M, Alavi-Majd H. Nursing students' competencies in evidence-based practice and its related factors. Nurs Midwifery Stud. 2015;4(4):e23047. [Crossref] [PubMed] [PMC]
- Cruz JP, Colet PC, Alquwez N, Alqubeilat H, Bashtawi MA, Ahmed EA, et al. Evidence-based practice beliefs and implementation among the nursing bridge program students of a Saudi University. Int J Health Sci (Qassim). 2016;10(3):405-14. [Crossref] [PubMed] [PMC]
- Melnik BM, Fineout-Overholt E. Evidence-Based Practice in Nursing & Healthcare. 1st ed. Philadelphia: Lippincott Williams & Wilkins; 2005. [Crossref]
- Stichler JF, Fields W, Kim SC, Brown CE. Faculty knowledge, attitudes, and perceived barriers to teaching evidence-based nursing. J Prof Nurs. 2011;27(2):92-100. [Crossref] [PubMed]
- Stevens KR. The impact of evidence-based practice in nursing and the next big ideas. Online J Issues Nurs. 2013;18(2):4. [Crossref] [PubMed]
- Ramos-Morcillo AJ, Fernández-Salazar S, Ruzafa-Martínez M, Del-Pino-Casado R. Effectiveness of a brief, basic evidence-based practice course for clinical nurses. Worldviews Evid Based Nurs. 2015;12(4):199-207. [Crossref] [PubMed]
- Laibhen-Parkes N. Evidence-based practice competence: a concept analysis. Int J Nurs Knowl. 2014;25(3):173-82. [Crossref] [PubMed]
- Resmî Gazete (08.03.2010, Sayı: 27515) sayılı Hemşirelik Yönetmeliği. Erişim tarihi: 01 Ekim 2021. Erişim linki: [Link]
- Ruzafa-Martínez M, Lopez-Iborra L, Moreno-Casbas T, Madrigal-Torres M. Development and validation of the competence in evidence based practice questionnaire (EBP-COQ) among nursing students. BMC Med Educ. 2013;13:19. [Crossref] [PubMed] [PMC]
- Brown CE, Kim SC, Stichler JF, Fields W. Predictors of knowledge, attitudes, use and future use of evidence-based practice among baccalaureate nursing students at two universities. Nurse Educ Today. 2010;30(6):521-7. [Crossref] [PubMed]
- Chrisnawati C, Ladjar II, Agustina DM, Oktarina S. Nursing students' competencies in evidence based practice. AHSR. 2017;2:114-8. [Crossref]
- Ulaş Karaahmetoğlu G, Kaçan Softa H. Hemşirelik öğrencilerinin kanıta dayalı hemşireliğe yönelik tutumlarının incelenmesi [Investigation of nursing students' attitudes towards evidence-based nursing]. Journal of Anatolia Nursing and Health Science. 2018;21(4):256-63. [Link]
- Evcimen H, İşcan Ayyıldız N. Hemşirelik öğrencilerinin kanıta dayalı hemşireliğe ilişkin tutum ve davranışlarının belirlenmesi [Determination of evidence-based nursing attitudes and behaviors of nursing students]. SDÜ Sağlık Bilimleri Dergisi. 2019;10(2):41-146. [Crossref]
- Yılmaz D, Düzgün F, Dikmen Y. Hemşirelerin kanıta dayalı hemşireliğe yönelik tutumlarının incelenmesi [An investigation into nurses' attitudes towards evidence-based nursing]. Acibadem University Journal of Health Sciences 2019;10(4):713-9. [Link]
- Sánchez-García I, Pilar Ureña Molina M, López-Medina IM, Pancorbo-Hidalgo PL. Knowledge, skills and attitudes related to evidence-based practice among undergraduate nursing students: a survey at three universities in Colombia, Chile and Spain. Nurse Educ Pract. 2019;39:117-23. [Crossref] [PubMed]
- Özer Küçük E, Çakmak S, Kapucu S, Koç M, Kahveci R. Hemşirelik öğrencilerinin kanıta dayalı hemşirelik uygulamalarına ilişkin farkındalıklarının belirlenmesi [Determination of nursing students' awareness of evidence-based nursing practice]. Journal of Hacettepe University Faculty of Nursing. 2017;4(2):1-12. [Link]
- Aslan H, Pekince H. Determining nursing students' evidence-based practice competencies and the effective factors. Medicine Science. 2019;8(4):957-62. [Crossref]
- Ateşeyan Y, Güngörmüş Z. The evidence-based practice competencies of nursing students. Eurasian Journal of Health Sciences. 2023;6(1):1-10. [Link]
- Yıldız E, Güngörmüş Z. The validity and reliability study of the Turkish version of the evidence based practice evaluation competence questionnaire. Nurse Educ Today. 2016;45:91-5. [Crossref] [PubMed]
- Jeong IS, Seo HJ, Lee EJ, Lee YH. Competence of evidence based practice among academic faculty of community health nursing in south korea: a cross-sectional study. Global Health & Nursing. 2017;7(1):5-12. [Crossref]
- Mittal R, Perakath B. Evidence-based surgery: knowledge, attitudes, and perceived barriers among surgical trainees. J Surg Educ. 2010;67(5):278-82. [Crossref] [PubMed]
- Ryan EJ. Undergraduate nursing students' attitudes and use of research and evidence-based practice - an integrative literature review. J Clin Nurs. 2016;25(11-12):1548-56. [Crossref] [PubMed]
- Ramis MA, Chang A, Nissen L. Undergraduate Health students' intention to use evidence-based practice after graduation: a systematic review of predictive modeling studies. Worldviews Evid Based Nurs. 2018;15(2):140-8. [Crossref] [PubMed]
- Labrague LJ, McEnroe-Pettite D, Tsaras K, D'Souza MS, Fronda DC, Mirafuentes EC, et al. Predictors of evidence-based practice knowledge, skills, and attitudes among nursing students. Nurs Forum. 2019;54(2):238-45. [Crossref] [PubMed]
- Belowska J, Panczyk M, Zarzeka A, Gotlib J. Knowledge and attitudes of nursing students towards evidence-based medicine and evidence-based nursing practice. PJP. 2015;125(4):201-4. [Crossref]
- Melnik BM, Gallagher-Ford L, Zellefrow C, Tucker S, Thomas B, Sinnott LT, et al. The First U.S. study on nurses' evidence-based practice competencies indicates major deficits that threaten healthcare quality, safety, and patient outcomes. Worldviews Evid Based Nurs. 2018;15(1):16-25. [Crossref] [PubMed]
- Zhang Q, Zeng T, Chen Y, Li X. Assisting undergraduate nursing students to learn evidence-based practice through self-directed learning and workshop strategies during clinical practicum. Nurse Educ Today. 2012;32(5):570-5. [Crossref] [PubMed]
- Varnell G, Haas B, Duke G, Hudson K. Effect of an educational intervention on attitudes toward and implementation of evidence-based practice. Worldviews Evid Based Nurs. 2008;5(4):172-81. [Crossref] [PubMed]
- Leach MJ, Hofmeyer A, Bobridge A. The impact of research education on student nurse attitude, skill and uptake of evidence-based practice: a descriptive longitudinal survey. J Clin Nurs. 2016;25(1-2):194-203. [Crossref] [PubMed]
- McCleary L, Brown GT. Association between nurses' education about research and their research use. Nurse Educ Today. 2003;23(8):556-65. [Crossref] [PubMed]
- Ozdemir L, Akdemir N. Turkish nurses' utilization of research evidence in clinical practice and influencing factors. Int Nurs Rev. 2009;56(3):319-25. [Crossref] [PubMed]
- Hsieh SI, Hsu LL, Huang TH. The effect of integrating constructivist and evidence-based practice on baccalaureate nursing student's cognitive load and learning performance in a research course. Nurse Educ Today. 2016;42:1-8. [Crossref] [PubMed]
- Mattila LR, Rekola L, Koponen L, Eriksson E. Journal club intervention in promoting evidence-based nursing: perceptions of nursing students. Nurse Educ Pract. 2013;13(5):423-8. [Crossref] [PubMed]
- Hickman LD, Kelly H, Phillips JL. EVITEACH: a study exploring ways to optimise the uptake of evidence-based practice to undergraduate nurses. Nurse Educ Pract. 2014;14(6):598-604. [Crossref] [PubMed]