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Factors Associated with Nurses' Attitudes Towards Evidence-Based Practice in Turkey

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ABSTRACT

Objective: Nurses' attitudes related to Evidence-Based Practices (EBP) have been widely studied in Western countries, on the other hand, few studies have examined nurse attitudes and practices related to evidence-based practice in Eastern European and Middle Eastern countries. Therefore, we investigated Turkish nurses' attitudes towards evidence-based practice and the socio-demographic factors associated with it in Turkey.

Methods: This is a descriptive study using a sample of 290 nurses employed by three hospitals in Turkey. Participants completed the Evidence-Based Nursing Attitude Questionnaire and a demographic survey to measure 13 personal, occupational, and professional variables. The analysis included descriptive statistics, t-tests, and ANOVA.

Results: The results of the study showed that nursing education, ability to use professional nursing standards, and conference attendance were significantly associated with higher evidence-based practice. Nurses who had a membership in a professional organization reported higher scores in the cognitive subscale. Younger nurses who have least length of nursing experience stated higher scores in the affective subscale. Moreover, nurses who use professional nursing standards in practice told higher scores in the behavioral subscale.

Conclusion: There are several factors associated with greater evidence-based practice among nurses, those are identified as higher nursing education, professional organization membership, conference attendance, and more satisfaction with income. Results suggest providing in-service education for older and experienced nurses in the benefits and processes of evidence-based practice, supporting activities that promote professionalism.

Keywords: evidence-based practice, evidence-based nursing, nurse attitudes, professional nursing practice, nursing, Turkey.

1. INTRODUCTION

The demand of delivering high-quality patient care has been rising internationally (1). Evidence-based practice (EBP), which is one of the fundamental provisions of quality health care, has been emphasized internationally; thus, EBP movements have received significant attention and resource commitments in healthcare (1). EBP approach guides healthcare providers' decisions to apply the best available scientific evidence with clinical expertise and patient's unique preferences (2). Implementing EBP is a basic responsibility of all healthcare providers (3-4). Nursing is the largest profession in health care and can affect the health care quality significantly (5). Professional nursing requires nurses to base their interventions on scientific knowledge instead of traditional customs, intuition, and habits. When nurses use evidence and research to guide their practice, they transform their role from being "care assistants" to "care professionals" (1).

The benefits of evidence-based practices can be listed as decrease in the health care cost, improvement in the health outcomes, and increase in the autonomy of nurses, which contributes to the professionalization of nursing (6-8). Many clinical nurses, however, are sceptical about using EBP recommendations because they believe that academic nurses, who perform theoretically-based research, are far removed from clinical realities and that research has limited clinical application (9-12). In the study of Upton and Upton, some nurse researchers reported that their research is not utilized in patient care settings and that clinical nurses do not base their interventions on evidence (13). Nurses' attitudes related to EBP have been widely studied in the international

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nursing literature, especially in western countries (Australian, western European and North American countries), leading to an EBP movement (4, 13-15). These studies indicate that many nurses recognize the importance of EBP in enhancing patient outcomes, even when they have little knowledge about how EBP is developed and implemented (4, 6). However, little attention has been paid to the EBP movement among nurses in Eastern European and Middle Eastern countries such as in Saudi Arabia (16), Jordan (17), Iran (18), and Oman (19).

EBP is not widely used in the clinical setting in Turkey, where is a Eastern European country (20). Until relatively recently, Turkish nurses prefer to base their practice on long-standing traditions, customs, habits, and personal and peers' experiences rather than on scientific sources of information (20, 22). Even if they believe the benefits of using EBP, those nurses reported that they cannot fully incorporate it in their practice (21). Moreover, nursing education did not emphasis EBP and primarily focused on training nurses in the psychomotor skills necessary for task-oriented patient care (5). Only beginning in 2010, Turkish nursing regulations emphasized the importance of EBP: "In every environment, a nurse specifies the health-related needs of families and society that can be met by nursing attempts. She/he plans, applies, evaluates, and monitors the nursing care *based on evidence* in the context of the needs specified during the process of nursing diagnosis." (23). After the government regulations in 2010, nurse educators encourage nursing students to ground their thinking and care in the latest evidence and research recommendations when developing care plans for their patients (24).

By better understanding nurses' current attitudes about EBP in Turkey, we take an important step towards elucidating how nurses and their leaders can enhance EBP throughout Eastern Europe. Although several Turkish nurse researchers have begun to investigate EBP in Turkey (5, 25-26), there are limited studies conducted in that area. This study builds upon their initial work.

The aims of this study were: 1) to investigate the cognitive, affective, and behavioral attitudes of nurses towards EBP in Turkey, and 2) to understand relationships between these attitudes and nurses' demographic characteristics (personal, occupational and professional factors).

2. METHODS

2.1. Study Design and Sample

The study utilized a descriptive study design to investigate Turkish nurses' cognitive, affective, and behavioral attitudes towards EBP and the demographic factors associated with them. A convenience sample of registered nurses was recruited from the pool of 340 nurses employed by three hospitals in a city in Turkey. Inclusion criteria were being 1) a registered nurse, 2) older than 18 years, and 3) able to read in Turkish. We recruited the sample from different types of nursing units during their staff meetings. A power analysis was used to calculate a minimum required sample size based on the following parameters: small to medium effect size (0.35), statistical power of 0.8, probability level of 0.05, predictor number of 28. A minimum sample size of 217 was determined.

2.2. Data Collection Tools

The study used two tools to collect data – the *Evidence-Based Nursing Attitude Questionnaire* (*EBNAQ)* and a demographic survey we developed specifically for this study.

Evidence-Based Nursing Attitude Questionnaire (EBNAQ). The EBNAQ was developed and psychometrically-tested to measure Spanish-speaking nurses' attitudes towards EBP (27). Ayhan and colleagues (2015) translated the *EBNAQ* into Turkish, establishing the scale's validity and reliability for Turkish nurses. Cronbach's alpha reliability coefficient for the whole scale was 0.90 while the coefficients of the three sub-dimensions 1) cognitive, 2) affective, and 3) behavioral were 0.86, 0.69, and 0.71 respectively (26).

The *EBNAQ* consists of 15 statements. The subject responds to each statement using a 5-point Likert scale. The range of scores varies from 15 to 75, with higher scores indicating a higher positive attitude towards EBP. A nurse's knowledge, feelings, and intentions are all important considerations in understanding the process of nurse adoption of EBP (27). Therefore, the 15 items of the *EBPNQ* measure three dimensions of EBP attitudes:

1) cognitive factors, which examine the knowledge a nurse has about EBP;

2) affective factors, which explore the nurse's feelings about EBP; and

3) behavioral factors, which signify the nurse's intention to apply evidence into their nursing practice.

Demographic Survey. In order to determine factors that are associated with different attitudes about EBP, we developed a form to gather personal, occupational, and professional information from each of the subjects. *Personal data* included age, gender, and nursing education program. Four types of educational programs prepare Turkish nurses for practice: medical-high-school (4-year secondary school basic nursing degree); associate degree (2-year nursing degree); BSc Nursing (4-year bachelor degree) and graduate (master's) degree. *Occupational data* included years of nursing experience, satisfaction in income, ability to practice professionally (i.e. using nursing standards and principles to guide practice) and the nurse's practice role (nurse manager [administrative and leadership roles], clinical nurse [basic nursing care] and specialized nurse [advanced training in emergency, operating or intensive care]). *Professional data* included information about the nurse's certification in an area of nursing practice, subscription to a professional nursing journal so far, frequency of reading academic/professional nursing journals so far, membership in a professional organization, and participation in professional conferences and symposiums so far.

2.3. Ethical Consideration

The study was reviewed and approved by Kastamonu University's Scientific Research and Publishing Ethics Committee with [2007/1] approval number. This study was approved according to Declaration of Helsinki guidelines. The proposal was also submitted to the three clinical facilities where the research was conducted, who likewise gave permission. Informed consent was obtained from all participants prior to participation. The confidentiality and privacy of the nurses were protected. The nurses were informed that their participation was completely voluntary, and they might choose not to participate in the study. All collected information in this study was anonymous.

2.4. Data Analysis

The responses to the paper based *EBNAQ* and *Demographic Survey* instruments were entered into SPSS (IBM Corp, Armonk, NY) version 25.0 statistical software. Only completed surveys were used in the analysis. Descriptive statistics were computed to describe the frequencies and distribution of each of the variables measured. *T*-test and one-way analysis of variance (ANOVA) tests were used to analyse the difference in means between the nurses' personal, occupational, and professional characteristics and their cognitive, affective, and behavioral attitudes towards EBP. After performing the ANOVA test, we ran the Scheffe test as a complementary post-hoc analysis of the significant findings to differentiate between nurses' attitudes and the demographic variables (personal, occupational, and professional characteristics). Confidence intervals (95%) were calculated at the $p < .05$ significance level.

3. RESULTS

Out of the original pool of 340 nurses, 290 (85%) nurses completed the instruments. *Table 1* shows the sample was primarily female and middle-aged nurses. The sample was representative of all educational levels with high-school, associate degrees, and baccalaureate degrees each compromising roughly 1/3 of the sample. Only 4% had master's degrees. *Table 2* shows years of experience was well represented in each of the three categories. Only about a 27% of the nurses were fully satisfied with their incomes, and only about 32% felt that they were fully able to practice professionally in using nursing standards and principles to guide practice. Finally, almost half of the sample practiced as clinical nurses and about 45% as specialized nurse. In *Table 3,* which highlights indicators of professionalism, we see that around 65% of sample never read academic article or attended professional conferences. Moreover, almost 98% of nurses do not have academic journal subscription. While 27% of the sample had professional certification, only 13% had membership from a professional organization.

Table 1. *Distribution of Evidence-based Nurses' Attitudes Questionnaire Score by Personal Characteristics (N= 290)*

Demographic Characteristics	n(%)	Cognitive Mean (SD)	Affective Mean (SD)	Behavioural Mean (SD)	Total Score Mean (SD)
Age					
18-25	63 (21.7)	27.6 (2.82)	16.1 (1.78)	15.3 (2.07)	59.0 (5.48)
26-40	153 (52.8)	27.3 (3.74)	15.6 (2.82)	14.4 (2.61)	57.2 (7.97)
41+	74 (25.5)	27.1 (4.41)	15.0 (2.72)	14.4 (2.84)	56.5 (8.34)
t/F (p – value)		0.259 (0.073)	2.783 (0.059)	3.359* (0.001)	1.918 (0.06)
GenderType equation here.					
Female	242 (83.4)	27.4 (3.70)	15.6 (2.59)	14.6 (2.60)	57.6 (7.52)
Male	48 (16.6)	26.8 (3.96)	15.3 (2.82)	14.3 (2.52)	56.4 (8.15)
t/F (p – value)		1.001 (0.472)	0.581 (0.34)	0.893 (0.432)	0.995 (0.444)
Nursing Education					
Medical-high-school	88 (30.3)	27.6 (3.49)	15.9 (2.23)	14.9 (2.46)	58.5 (7.05)
Associate (nursing college)	92 (31.7)	26.8 (4.11)	14.9 (2.95)	14.1 (2.81)	55.7 (8.17)
BSc Nursing	98 (33.8)	27.1 (3.43)	15.7 (2.47)	14.5 (2.43)	57.3 (7.08)
Master in Nursing	12 (4.2)	30.4 (3.87)	16.9 (2.91)	16.1 (2.78)	63.4 (8.37)
t/F (p – value)		3.647* (0.025)	3.940* (0.018)	3.219* (0.038)	4.680* (0.002)

*$p < 0.05$.

Table 1 provides an overview of nurses' personal characteristics with the three *EBNAQ* subscales. There was a significant difference in mean behavioral (intent-to-practice) scores within age. Behavioral scores of the youngest nurses' (18-25 years old) was statistically significantly higher than the score of the oldest nurses (over 41 years old) (p<.05). Similarly, there was a significant difference in mean cognitive (knowledge), affective (feelings), and behavioral (intent-to-practice) *EBNAQ* scores within nursing education (p<.05). Masters-prepared nurses had the highest total *EBNAQ* mean scores, while associate degree nurses had the lowest.

Table 2 indicates several significant differences in the mean scores of the three *EBNAQ* subscales within nurses' occupational characteristics. A significant difference was found in the mean affective (feelings) scores within nurses' years of experience (p<.05). Nurses working the shortest amount of time had the highest scores, while nurses with the most experience had the lowest. Nurses who were satisfied with their nursing incomes had significantly higher affective (feelings) scores (p<.05). The ability to practice professionally – using professional nursing values, processes and standards – was significantly different in nurses' cognitive (knowledge), behavioral (intent-to-practice), and total EBP scores (p<.05).

Table 3 demonstrates an overview of professional practice characteristics with the three *EBNAQ* subscales. Nurses who had achieved professional certification and nurses who were members of professional organizations had significantly higher EBP cognitive scores than those who had not achieved these indicators of nursing professionalism (p<.05). There was significant difference in mean cognitive, affective, and total EBP scores within attending professional conferences (e.g. symposia, congresses) (p<.05). Finally, subscribing to professional journals and/or reading academic journals were not significantly different in any EBP scores.

Table 2. *Distribution of Evidence-based Nurses' Attitudes Questionnaire Score by Occupational Characteristics (N= 290)*

Demographic Characteristics	n (%)	Cognitive Mean (SD)	Affective Mean (SD)	Behavioural Mean (SD)	Total Score Mean (SD)
Years of Nursing Experience					
0-10	122 (42)	27.2 (3.36)	15.9 (2.36)	14.8 (2.36)	57.9 (6.94)
11-20	93 (32)	27.7 (3.63)	15.7 (2.70)	14.6 (2.60)	58.0 (7.74)
20+	75 (26)	27.0 (4.43)	14.8 (2.84)	14.2 (2.90)	56.0 (8.44)
t/F (p – value)		0.778 (0.553)	3.792* (0.033)	1.152 (0.102)	1.726 (0.063)
Income Level					
Yes	77 (27)	27.13 (3.48)	15.23 (2.64)	15.99 (2.25)	58.35 (7.38)
No	117 (40)	27.24 (4.27)	14.15 (2.78)	15.30 (2.89)	56.68 (8.42)
Partially	96 (33)	27.53 (3.26)	14.57 (2.19)	15.46 (2.54)	57.56 (6.75)
t/F (p – value)		0.276 (0.699)	4.196* (0.011)	1.665 (0.122)	1.136 (0.180)
Uses Professional Standards					
Yes	93 (32)	27.3 (3.52)	15.9 (2.33)	15.1 (2.45)	58.4 (7.41)
No	66 (22.8)	26.4 (4.49)	15.3 (3.06)	13.9 (2.84)	55.6 (9.06)
Partially	131 (45.2)	27.8 (3.41)	15.4 (2.57)	14.5 (2.49)	57.7 (6.86)
t/F (p – value)		3.287*(0.03)	1.608 (0.273)	4.258* (0.001)	2.675* (0.023)
Practice Role					
Nurse Manager	17 (5.8)	28.5 (3.63)	16.7 (2.97)	15.2 (2.46)	60.5 (7.92)
Clinical Nurse	144 (49.6)	27.0 (3.27)	15.3 (2.36)	14.4 (2.46)	56.7 (6.80)
Specialized Nurse	129 (44.6)	27.4 (4.21)	15.7 (2.81)	14.7 (2.73)	57.8 (8.35)
t/F (p – value)		1.355 (0.248)	2.577 (0.396)	1.331 (0.296)	2.270 (0.303)

**p < 0.05.*

Table 3. *Distribution of Evidence-based Nurses' Attitudes Questionnaire Score by Professional Practice Characteristics (N= 290)*

Demographic Characteristics	n (%)	Cognitive Mean (SD)	Affective Mean (SD)	Behavioural Mean (SD)	Total Score Mean (SD)
Professional Certification					
Yes	78 (26.9)	28. (4.62)	15.7 (2.98)	14.6 (3.01)	58.2 (9.16)
No	212 (73.1)	27.0 (3.35)	15.5 (2.49)	14.6 (2.42)	57.1 (6.98)
t/F (p – value)		1.777* (0.023)	0.772 (0.146)	0.047 (0.790)	1.120 (0.158)
Journal Subscription					
Yes	7 (2.4)	30.0 (2.94)	16.4 (1.90)	15.9 (2.55)	62.3 (6.47)
No	283(97.6)	27.2 (3.74)	15.5 (2.64)	14.5 (2.59)	57.3 (7.62)
t/F (p – value)		1.935 (0.060)	0.913 (0.427)	1.327 (0.318)	1.715 (0.128)
Reading Academic Article					
Never	190 (65.5)	27.2 (3.90)	15.4 2.63)	14.4 (2.61)	56.9 (7.85)
1-3	87 (30)	27.5 (3.38)	15.8 (2.52)	15.0 (2.41)	58.3 (6.86)
4+	13 (4.5)	28.3 (3.79)	16.2 (3.03)	14.6 (3.23)	59.2 (8.87)
t/F (p – value)		0.709 (0.691)	1.534 (0.126)	1.457 (0.090)	1.343 (0.142)
Conference Attendance					
Yes	110 (37.9)	28.1 (4.37)	15.9 (2.83)	14.8 (2.92)	58.8 (8.63)
No	180 (62.1)	26.9 (3.24)	15.3 (2.47)	14.4 (2.36)	56.6 (6.84)
t/F (p – value)		2.687** (0.000)	1.957* (0.027)	1.153 (0.312)	2.385* (0.015)
Professional Organization Membership					
Yes	36 (12.4)	28.9 (4.07)	15.6 (3.12)	14.5 (2.69)	58.9 (8.63)
No	254(%) (87.6)	27.1 (3.65)	15.5 (2.55)	14.6 (2.58)	57.2 (7.51)
t/F (p – value)		2.690* (0.010)	0.051 (0.877)	0.119 (0.738)	1.285 (0.246)

**p < 0.05. **p < 0.001.*

4. DISCUSSION

This study examined Turkish nurses' cognitive, affective, and behavioral attitudes to EBP and its' relationship to various personal, occupational, and professional factors. One of the most encouraging findings is that, nurses who worked in Turkey received an average of *EBNAQ* total scores (55.61 to 63.42; range = 15-75), which was relatively high, indicating reasonably positive attitudes towards EBP. This finding is congruent with other studies that indicate Turkish nurses generally believe EBP enhances the quality of care (7, 21, 26), even though nurses perceive barriers to implementing EBP (25).

The results reflect the previous studies, finding similar associations of EBP with gender, nursing education, income satisfaction, use of professional standards, professional certification, conference attendance, and professional organization membership. However, our findings related to age, years of experience, practice role, journal subscription, and reading academic articles fail to support findings from previous studies. We attempt to explain these discrepancies below. One of the most noteworthy findings of our study is that younger nurses (18-25) have higher behvioral *EBNAQ* scores, means intent to practice EBP, compare to mature nurses (> 41 years) that is concurrent with previous studies (4, 22). On the other hand, Dikmen and colleagues (2014) and Goris and colleagues (2014) found that in Turkey older nurses exhibit higher professionalism (and presumably positive EBP attitudes are an important element of professionalism) compared to younger nurses (7, 21). This contradictory finding may be related to EBP attitudes being only one attribute of professionalism. According to Ghadirian and colleagues (2014), there are a multitude of attributes associated with professionalism (28). Older nurses may have acquired many of these other attributes, demonstrating their professionalism, but positive EBP attitudes may not be one of them.

Consistent with our previous findings from Turkey (7, 21, 29), highly educated nurses are more likely to have knowledge, have positive feelings, and have commitment to practice EBP. In Turkey, although EBP is not in the nursing curriculum yet, recently nurse educators started to teach and increase nursing students' awareness about EBP(24). Additionally, nursing students read professional journals, attended scientific meetings, and reported higher desire for research (20, 24). Therefore, it is likely that more recently educated younger nurses have received better education about the importance of EBP. Older nurses who have been in the profession longer

may not have had the advantage of a good introduction to the benefits and processes of EBP. Although experienced nurses expected to mentor newer nurses, they have difficulty implementing EBP into their own nursing practices (30). Newly graduated nurses reported fewer barriers to use EBP and had greater desire for EBP (31).

The findings related to age were consistent with two other studies from Turkey (7, 29), as we found nurses with the least experience (0-10 years) had higher affective scores than nurses with the most experience (>20 years), which are consistent with findings by two other studies from Turkey (7, 29). The reason might be the less experienced nurses have recently graduated and have had the benefit of EBP training.

Nurses who were satisfied with their incomes had higher affective scores than their colleagues who were either dissatisfied or partially satisfied with their incomes. We also found that nurses who felt that they could practice using the values, processes and standards associated with professional nursing practice had higher cognitive, behavioral, and total *EBNAQ* score averages. Karamanoğlu and colleagues (2009) also found that nurses who reported they were able to practice their nursing knowledge, values, and skills had higher professional attitude scores (32). Thus, it seems that nurses who feel satisfied with their incomes and their ability to practice professionally have more knowledge and motivation for EBP compare to nurses who are discouraged with their jobs.

Our findings related to nursing role (manager nurse, clinical nurse, specialty nurse) did not support the results reported by other Turkish studies (7, 21, 32). They found that manager nurses had higher professional attitude scores than nurses in other roles. Even though our findings lacked significance, nurse managers in our study had the highest scores in all the *EBNAQ* subscales and total scale. This undoubtedly reflects their interest in enhancing the quality of healthcare and the professionalism of nursing services within their organizations.

In the demographic survey, the factors included in the *Professional Practice Characteristics* section are activities that are associated with the concept of nurse professionalism (28). Nurses who engage in these activities tend to be more "professional" and more interested in nursing research than nurses who do not engage (7, 21, 26). Our findings validate these findings only partially because only professional certification, conference attendance, and professional organization membership reached significantly similar results. For instance, nurses who had professional certification and professional organization membership received higher cognitive scores, means had more knowledge about EBP. Also nurses who attended conferences received higher cognitive, affective and total *EBNAQ* scores, means had more knowledge and positive feelings about EBP. According to Al Mutair (2015), nurses who join professional organizations also extend their commitment beyond the needs of patients to the needs of the profession, engaging in additional professional and political activities (16).

In this study, subscribing to journals and reading academic articles – other indicators of professionalism – did not reach significance, but the mean scores consistently showed higher *EBNAQ* scores for nurses who engaged in these activities than those who did not. Thus, it still seems correct to conclude engaging in these professional activities helps nurses increase their knowledge about, enhance their opinions towards, and their commitment to EBP. Engaging in professional development activities of all kinds provides exposure to research and scientific programs, increasing nurses' positive attitudes towards them.

One professional activity that we did not include in our survey is participating in nursing research projects. Dalheim and colleagues (2012) found that nurses who participated in research projects developed positive attitudes and skills towards research and EBP (33). The opportunity to participate in research seems to be an important avenue for enhancing EBP attitudes.

5. CONCLUSION

In this study, factors associated with significantly higher EBP attitudinal scores included being single, more highly educated, more satisfied with income, and ability to practice using professional standards. Being younger and less experienced were also associated with higher EBP attitudinal scores. Other factors associated with higher EBP scores included being certified, being a member of a professional organization and attending professional conferences.

Implications

The results of our study suggest several recommendations for enhancing nurse attitudes about and commitment to EBP:

Provide in-service education for older and experienced nurses. Because the population of older, experienced nurses have *EBNAQ* scores lower than younger less experienced nurses, their deficit may be related to a lack of formal EBP education that was not available during their nurse training. Inservice education about EBP and its purpose, processes, and applications may increase these nurses' commitment to EBP.

Support job satisfaction. Since nurses who are dissatisfied with their jobs have less interest in EBP, nursing leaders at healthcare organizations should give attention to indicators of job satisfaction, creatively addressing them. For instance, even if salaries can't be raised, other benefits, such as scheduling flexibility, may increase job satisfaction.

Support professional practice. Nurses who feel like professionals, whose knowledge and skills are valued and incorporated into patient care, are more engaged in EBP. Nurse leaders at healthcare facilities should promote a culture that facilitates professional nursing practice. They can inventory the strengths and weaknesses of their organizations and gradually take steps to improve the value

placed on nursing values, standards and processes, such as interdisciplinary rounding.

Support educational advancement. Since higher education is associated with positive EBP attitudes, organizations should consider policies that help and reward advanced education and degrees. Enhancing the knowledge and skills of the nursing workforce is likely to increase nurse commitment to EBP and the quality of care the healthcare organization provides to its patients.

Support professional activities. Since professional activities such as certification, professional organization membership, conference attendance and journal subscription and reading are associated with positive EBP attitudes, these activities should be valued by and monetarily supported by clinical organizations. Nurse researchers can advance nursing science and its application to patient care by conducting studies relevant to clinical nurses. They can provide clinical nurses with opportunities to see how the research process identifies patient care problems, tests new interventions, critically evaluates these interventions, implements research findings, and builds new research on previous research problems (11).

Limitations

Generalization of this study to other nurses should be done cautiously, since the study has several methodological limitations. First, as a descriptive study, we used primarily associative rather than predictive methods. Second, the tools used in the study were self-administered and self-reported, which are subject to validity concerns. Third, the sample was taken from one city in Turkey, and may not be generalizable to other cities or countries. Finally, we wished we had included "opportunities to participate in the research process" in the demographic survey, and recommend that this factor be included in further research about factors that could influence EBP.

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