

Evidence-Based Practice Beliefs and Implementation among the Nursing Bridge Program Students of a Saudi University

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Abstract

Objectives: This study aimed to measure the evidence-based practice (EBP) beliefs and implementation among Saudi nursing students enrolled in the bridge program. It also sought to identify the factors that influence EBP beliefs and implementation.

Methods: A convenience sample of 188 nursing bridge program students at a university in Saudi Arabia was surveyed in this descriptive, cross-sectional study. The EBP Beliefs Scale (EBP-B) and the EBP Implementation Scale (EBPI) were employed to collect data regarding the respondents' beliefs and implementation of EBP, respectively. Descriptive and inferential statistics were used to analyze the data.

Results: All of the items in the EBP beliefs scale received good endorsement rate (60.6 – 89.4%). A very low overall mean score of 22.57 was reported by the respondents in the implementation of EBP. The EBP beliefs of the respondents was primarily influenced by awareness on EBP ($\beta = 0.26, p < 0.001$), followed by gender ($\beta = -0.20, p < 0.001$), age ($\beta = 0.17, p < 0.05$), and attendance at EBP trainings/seminars ($\beta = 0.16, p < 0.05$). Attendance to EBP training and seminars ($\beta = 0.19, p < 0.01$), gender ($\beta = 0.18, p < 0.05$) and awareness on EBP ($\beta = 0.15, p < 0.05$) were identified as factors that influence EBP implementation.

Conclusions: Despite the positive responses on the belief scale, the implementation of EBP by the respondents is very poor. Education and training courses should be initiated to increase the implementation of EBP among the nursing bridge program students.

Keywords: Evidence-based nursing practice; EBP beliefs; EBP implementation; Nursing bridge program students; Saudi Arabia.

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Introduction

Evidence-based practice (EBP) has become the gold-standard of care in the nursing discipline today. Healthcare and educational institutions need to shift focus on EBP. Subsequently, health professionals are expected to possess the competency in the implementation of EBP to meet the demands of the health care system in this twenty first century. To fulfill this need, numerous academic strategies in the introduction of EBP to undergraduate nursing baccalaureate education have been implemented to prepare future nurses.

One of the objectives of a baccalaureate nursing education is to develop competencies essential for EBP. ⁽¹⁾ Development of the necessary skills to include research findings into practice is also recommended by the certifying authorities. The need for safety and quality healthcare has resulted in the inclusion of EBP competencies in the nursing curricula. ⁽²⁾ In addition, the general goal of Quality and Safety Education for Nurses is to address the issue of preparing future nurses with the necessary competence. ⁽³⁾ This holds true in Saudi Arabia where efforts to integrate EBP into the undergraduate curriculum as a major competency are required to be made. ⁽⁴⁾

Over the past few years, research, using the conventional approach, has been the style taught to nursing students. This particular technique focuses on meticulous ways of producing evidence rather than the use and application of evidence into practice. This, however, resulted in learners developing unfavorable ways of thinking while involved in research. Furthermore, various issues such as the significant gap between research and practice, and the lack of clinical significance have emerged. ⁽⁴⁻⁶⁾ In addition, conventional nursing research programs employing research textbooks likewise resulted in a lack of clarity relating to EBP content, process and results. ⁽⁷⁾ Thus, students leave their professional courses with little or no desire to continually read, evaluate, utilize, and implement evidence from research. ⁽⁸⁾

Revision of curriculum within the aim to employ an EBP strategy in teaching and learning in nursing at different levels is vital in preparing nursing students for the modern and constantly changing environment of healthcare practice. ⁽⁹⁾ With the challenge of the Institute

of Medicine in 2003, healthcare professionals should be educated with a focus on EBP to provide patient-centered care. ⁽¹⁰⁾ Learning and valuing EBP as a process should start at the basic nursing education and training programs. ^(11,12) Various efforts to integrate EBP with the nursing education were undertaken. Levin and Feldman advocated that educators should prepare students with an EBP strategy in clinical care to ensure an accelerated paradigm transition. ⁽⁸⁾ Heye and Stevens recommended critical thinking and dialogue as a means of translating information. ⁽¹³⁾ Furthermore, the utilization of problem-based learning (PBL) in teaching EBP, where educators work as facilitators of learning was also proposed. ⁽¹⁴⁾ On the other hand, the practice-based small group method is recommended to help with bringing to life EBP for learners, and eliminating most of the barriers to implementation of EBP in nursing. ⁽¹⁵⁾

In this premise, it is essential to assess the belief and implementation of EBP among nursing students. In Saudi Arabia, the Ministry of Education provides the opportunity for nursing diploma holders to continue their bachelor's degree under the nursing bridge program. Saudi universities offer this program to provide the opportunity for these students to finish their BSN so as to enable them to work as full-fledged nurses in hospitals within the kingdom. The curriculum of the nursing bridge program includes Nursing Research and EBP in nursing courses. Most of the students are working as nurse attendants or assistants in hospitals and primary health centers in the kingdom. Consequently, this current study was conceptualized to measure the beliefs and implementation in EBP among Saudi nursing students enrolled in the bridge program. The factors influencing EBP beliefs and implementation were also identified.

Methods Design

This study is a descriptive, cross-sectional research.

Participants and Settings

The study population comprised of students enrolled in the nursing bridge program of a government-run university located in the central region of Saudi Arabia. A convenience

sample of 188 students was included in the study. Inclusion criteria were: (a) Saudi nursing students in the bridge program enrolled during the second semester of the academic year 2014-2015; (b) male and female; and (c) currently employed or recently employed in a nursing job in any hospital or primary health center.

Data Collection

Data were collected from March to May, 2015. A self-administered questionnaire was distributed to each respondent by the researchers during their classroom classes. Since the classes of the nursing students of the bridge program are scheduled in the afternoon, data gathering took place during the first hour of their first course in the afternoon. Instructions were explained before the respondents were allowed to answer. The researchers verbally informed the respondents about the significant information such as the purpose of the study, the importance of the study, the expected participation of the respondents, and the right of the respondents to refuse participation. The respondents who verbally signified their intention to participate were given a questionnaire. The respondents were given 15 to 20 minutes to answer the questionnaire. The researchers made sure that the questionnaires were adequately responded to before collection.

Measures

A three-part questionnaire was used to gather data. Part 1 contained questions that gathered the demographic variables of the respondents. Demographic variables in this study included the age, gender, awareness on EBP and EBP trainings and seminars attended in the last 12 months. Parts 2 and 3 were the EBP Belief Scale (EBP-B) and EBP Implementation Scale (EBPI), respectively. These scales were developed by Melnyk and colleagues.⁽¹⁶⁾

The EBP Belief Scale is a 16-item unidimensional scale that measures the person's beliefs about the value of EBP and the ability to implement it. EBP beliefs were defined as "endorsement of the premise that EBP enhances clinical outcomes and confidence in one's knowledge or skills regarding EBP". This is based on the transtheoretical model of change. The scale is

responded using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The minimum score of the scale is 16 and the maximum is 80. Two items need to be reversed (items 11 and 13). All individual scores from each item were added to form the total score. Higher scores signify more positive beliefs towards EBP. The scale has shown acceptable reliability with Cronbach's alpha of >0.90 .⁽¹⁶⁾

The EBPI is an 18-item self-report, Likert-type scale that measured the extent of the actual implementation of EBP. Implementation of EBP was operationally defined as engaging in relevant behaviors, which can involve seeking and appraising scientific evidence, sharing evidence or data with colleagues or patients, collecting and evaluating outcome data, and using evidence to change the practice. Questions were related to the actual utilization of EBP in performing professional tasks during the past 8 weeks. The respondents were given the following options: 0 = "0 times", 1 = "1-3 times", 2 = "4-6 times", 3 = "6-8 times" and 4 = "more than 8 times". Score was obtained by adding the given responses with 0 as the lowest score and 72 as the highest. Higher scores mean more frequent implementation of EBP skills and behavior. The Cronbach's alpha for the scale was > 0.90 , and principal components analysis indicated that the scale allowed measurement of a unidimensional construct.⁽¹⁶⁾

Ethical Consideration

Permission to conduct the research and ethical clearance were obtained from the Office of the Dean of the College of Applied Medical Sciences of the university. Proper coordination with the female college was observed in respect with the gender sensitivity in the kingdom. The researchers verbally explained all the important information to the respondents. An oral consent was solicited from every respondent. All information was treated confidentially throughout the research process.

Statistical Analysis

Data collected were analyzed using the Statistical Package for Social Sciences version 22. Descriptive statistics were used to treat the variables. A stepwise multiple regression analysis was conducted to determine the

factors influencing EBP beliefs and EBP implementation. Analyses were carried out at the 0.05 level of significance.

Results

A total of 188 questionnaires were distributed and retrieved to and from the nursing students registered under the bridge program of a Saudi university. From these, the mean age was 28.93 with a standard deviation (SD) of 3.27. A majority of the respondents

were males (56.9%), and were aware about EBP in nursing (87.8%). In terms of training and seminars on EBP in the last 12 months, 46.3% of the respondents have undergone this 1 - 2 times previously, and 39.9% have not. Only 8.5% and 5.3% of the respondents had EBP training or seminars for more than 5 times and 3 - 4 times in the last 12 months, respectively (Table 1).

Table 1 Characteristics of the respondents (N=188)

Respondents' Characteristics		Mean	SD
Age		28.93	3.27
		n	%
Gender	Male	107	56.9%
	Female	81	43.1%
Awareness on EBP	Yes	165	87.8%
	No	23	12.2%
EBP Training/ seminars in the last 12 months	None	75	39.9%
	1 – 2 times	87	46.3%
	3 – 4 times	10	5.3%
	≥ 5 times	16	8.5%

Beliefs towards EBP

The EBP Belief Scale was used to gather data on the beliefs of the respondents towards EBP. The mean total score computed was 61.66 with an SD of 7.66 and scores ranging from 37 to 76 (with possible scores 16 - 80). As reflected in Table 2, majority of the respondents agreed or strongly agreed with all the items in the EBP beliefs scale. The belief that EBP guidelines can improve clinical care received the highest percentage endorsement among the items in the scale (89.4%). Belief that EBP needs a lot of time received the second highest endorsement percentage (87.8%) followed by the belief that EBP results in the best clinical care for patients (87.2%). On the other hand, belief on their ability to search for the best evidence in a timely manner received the lowest endorsement percentage (60.6%) followed by the belief that the respondents know how to implement EBP to impact practice (64.4%) and belief that they can overcome barriers regarding EBP implementation (65.4%).

Implementation of EBP

The implementation of EBP was measured using the EBPI. A mean score of 22.57 with an SD of 15.05 was computed using the raw data (possible scores of 0-72). As reflected in Figure 1, more than half the respondents reported that they did not access the Cochrane database of systematic reviews (57.5%), and did not access the National Guidelines Clearinghouses (54.3%) in the past 8 weeks. Moreover, 47.9% did not generate a PICO question about their clinical practice, 45.7% did not critically appraise evidence from a research study, and 41.0% did not read and critically appraise a clinical research study in the past 8 weeks. However, nearly half (48.4%) have shared with colleagues the outcome data they collected, for 1 - 3 times in the last 8 weeks. Forty-one percent of the respondents have also evaluated a care initiative by collecting patient outcome data, and have shared evidence from a study with more than 2 colleagues for 1 - 3 times in the last 8 weeks. On the other hand, very few of the respondents implemented the specified EBP activities for more than six times in the past 8 weeks (1.1 - 22.3%).

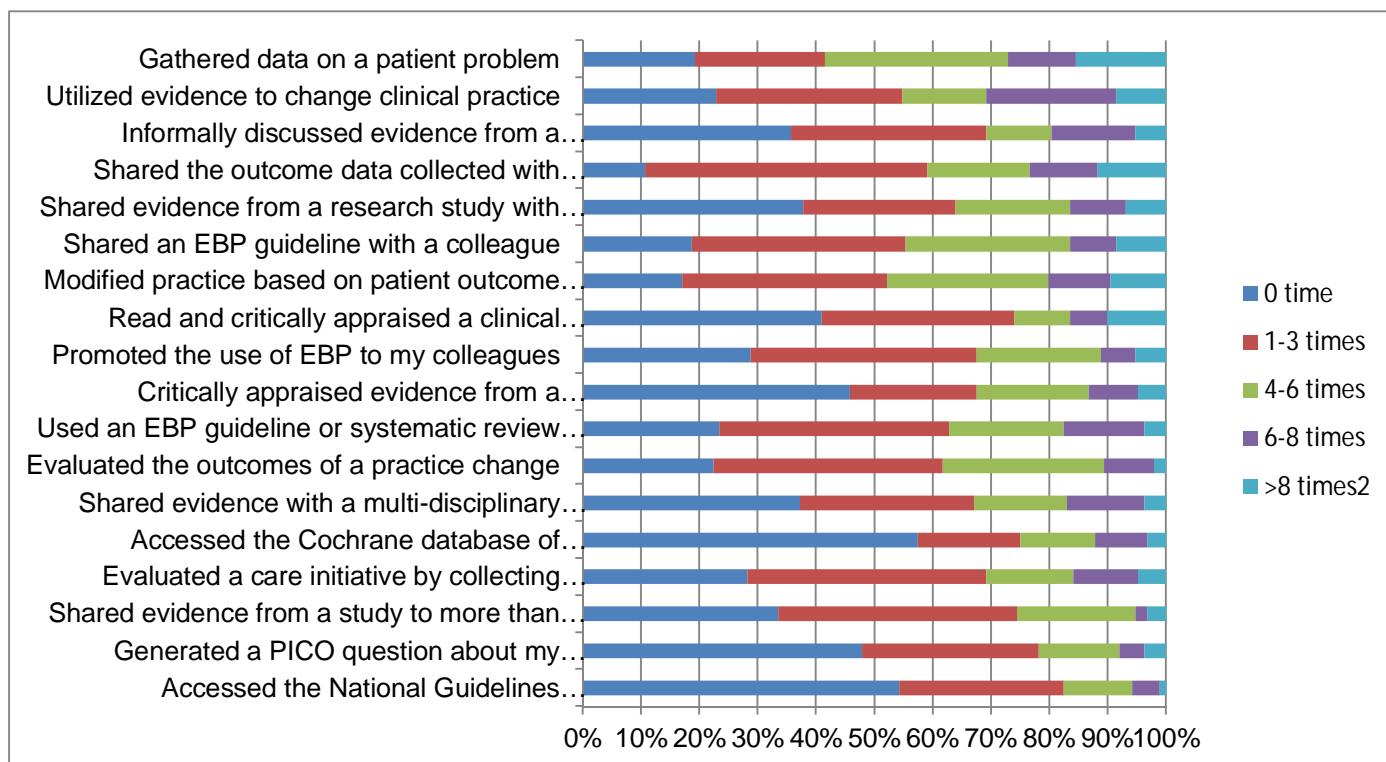


Figure 1 EBP implementation as reported by the Saudi nursing students in the bridge program (N=188)

Table 2 Percentages endorsement of the items of the EBP beliefs scale (N=188)

Items	% who strongly agreed/agreed in each statement
1. Belief that EBP results in the best clinical care for patients	87.2%
2. Clear about the steps of EBP	68.1%
3. Can implement EBP	74.5%
4. Belief that critical appraisal of evidence is essential in EBP process	85.1%
5. Belief that evidence-based guidelines can enhance clinical care	89.4%
6. Belief that one can search the best evidence in a time-efficient way	60.6%
7. Belief that one can overcome barriers to EBP implementation	65.4%
8. Can implement EBP in a time-efficient way	70.7%
9. Belief that implementing EBP will improve the care to patients	84.0%
10. Ability to measure the outcomes of clinical care	81.4%
11. Belief that EBP needs much time	87.8%
12. Can access the best resources to implement EBP	73.4%
13. Belief that EBP is difficult	76.6%
14. Know how to implement EBP sufficiently enough to make practice changes	64.4%
15. Confidence to implement EBP in work	80.9%
16. Belief that the care delivered is evidence-based	76.1%

Table 3 Factors influencing the EBP beliefs by multiple regression analysis (N=188)

Model	b	SE-b	Beta	sr ²	t	p-value
Awareness on EBP	6.13	1.59	0.26	0.07	3.86	<0.001
Gender	-3.03	1.07	-0.20	0.04	-2.85	<0.01
Age	0.41	0.16	0.17	0.03	2.49	<0.05
EBP trainings/ seminars attended in the last 12 months	1.43	0.60	0.16	0.03	2.41	<0.05

Note. The dependent variable was EBP beliefs. $R^2=0.203$, Adjusted $R^2=0.186$. sr^2 is the squared semi-partial correlation.

Factors Influencing EBP Beliefs

Table 3 shows the regression model on EBP beliefs. The age, gender, awareness of EBP and EBP trainings/seminars attended in the last 12 months were entered in a stepwise multiple regression analysis. The model was statistically significant ($F(4, 183) = 11.68$, $p < 0.001$), accounting for 20.3% of the variance of EBP beliefs ($R^2 = 0.203$, adjusted $R^2 = 0.186$). The EBP beliefs of the respondents was primarily influenced by awareness on EBP ($\beta =$

0.26, $p < 0.001$), followed by gender ($\beta = -0.20$, $p < 0.001$), age ($\beta = 0.17$, $p < 0.05$), and attendance at EBP trainings/seminars ($\beta = 0.16$, $p < 0.05$). Individually, awareness on EBP and gender accounted for approximately 7.0% and 4.0% of the variance of EBP beliefs, respectively. Age and attendance at EBP trainings/seminars similarly shared approximately 3.0% of the variance of EBP beliefs.

Table 4 Factors influencing EBP implementation by multiple regression analysis (N=188)

Model	b	SE-b	Beta	sr ²	t	p-value
EBP Trainings/ seminars in the last 12 months	3.29	1.23	0.19	0.04	2.67	<0.01
Gender	5.45	2.12	0.18	0.03	2.58	<0.05
Awareness on EBP	6.75	3.27	0.15	0.02	2.06	<0.05

Note. The dependent variable was EBP implementation. $R^2=0.107$, Adjusted $R^2=0.093$. sr^2 is the squared semi-partial correlation.

Factors Influencing EBP Implementation

A stepwise multiple regression analysis was conducted to determine the factors influencing EBP implementation among the respondents. Age, gender, awareness of EBP, EBP trainings/seminars and the EBP beliefs score were used in the analysis to predict the implementation of EBP. As indicated in Table 4, the model revealed three of the five predictors, and was able to reach three steps without variables being removed. The model was statistically significant ($F(3, 184) = 7.39$, $p < 0.001$), accounting for 10.7% of the variance of EBP implementation ($R^2 = 0.107$, adjusted $R^2 = 0.093$). Implementation of EBP was primarily influenced by higher attendance of EBP training and seminars and to a lesser extent by being female and being aware of EBP. Attendance at EBP training and seminars received the strongest weight in the model ($\beta = 0.19$, $p < 0.01$), followed by gender ($\beta =$

0.15, $p < 0.05$) and awareness of EBP ($\beta = 0.15$, $p < 0.05$) as receiving the lowest weight. The unique variance was relatively low as reflected by the squared semi partial correlation. Attendance at EBP training and seminars, gender and awareness of EBP uniquely accounted for approximately 4%, 3% and 2% of the variance of EBP implementation, respectively.

Discussions

This study was conducted to measure the EBP belief and implementation of nursing students in a bridge program in Saudi Arabia. Likewise, it determined the factors that influence the EBP beliefs and implementation among the respondents.

The results showed that the respondents were very positive towards EBP as implied by the high scores reported in the EBP Belief scale. This suggests that the respondents

perceived EBP as very significant to the nursing practice. They think EBP can improve the quality of care that they could provide to their patients. Previous studies have also reported EBP beliefs among nurses. ^(17,18) Although this present study reported a higher percentage of positive responses, the idea that nurses thought of the significant value of EBP in relation to their practice is comparable with the earlier studies. Another interesting finding of this current study revealed that more than three-quarters of the respondents agreed or strongly agreed that EBP is difficult and time consuming. Previous studies have also reported similar findings. ⁽¹⁹⁻²¹⁾ Time limitation is a serious barrier in utilization of research. Moreover, insufficient time to read, evaluate, analyze, disseminate and implement evidence was reported by many nurses as barriers to EBP. ^(22,23) Moreover, the huge load of responsibilities a nurse needs to attend to daily, and the highly demanding environment of the healthcare facility, demands most of the time of the student nurses. This can make EBP more difficult to incorporate into clinical practice. In addition, most nursing practices are tradition-based rather than evidence-based, which can result in an increased workload.⁽²¹⁾ On the other hand, belief on the ability to search for best evidence in a time efficient manner received the lowest positive responses in this study. Although a majority of the respondents agreed with this belief, it is worth mentioning that it received low endorsement rate. This implies that the respondents may have limited access to resources to implement EBP. Furthermore, inadequate skills in accessing research and evaluating its quality may have contributed to this result. ⁽²⁴⁾ Further analysis revealed that being aware of EBP, being male, older students, and attendance to EBP trainings/seminars positively influence the beliefs of the respondents toward EBP. Attendance to trainings/seminars regarding EBP may improve awareness on EBP thus facilitating positive beliefs towards EBP. Previous studies have reported an improvement in the EBP beliefs after implementing EBP educational interventions. ⁽²⁵⁻²⁷⁾ These studies support the finding that increased awareness of the concept of EBP and educational interventions can positively affect the beliefs towards EBP. With regards to

age, the direction of the findings revealed that those students who are older have more positive beliefs towards EBP. This finding is supported by a previous study, which reported that the strength of EBP beliefs significantly increased with age. ⁽¹⁶⁾ This might be explained by the fact that the older respondents in this study were more exposed to clinical experiences and had more trainings which might have positively impacted their beliefs towards EBP.

This study also reported the frequency of implementation of EBP among the respondents. As reported, there is very low implementation of all the EBP activities being measured. This result is not surprising, since past studies have shown similar findings on the implementation of EBP among nurses and nursing students. ^(16, 18, 28) Despite the low reported implementation of EBP in this study, the respondents have reported some implementation of some activities of EBP.

After controlling for the variables, three independent variables emerged as substantially affecting the implementation of EBP. Having more frequent attendance at EBP trainings and seminars primarily affects the implementation. This holds true as evidenced by the results of studies conducted which evaluated the effect of various educational interventions in the implementation of EBP by nurses. Implementation of EBP was significantly improved after the implementation of education intervention. ⁽²⁸⁻³⁰⁾ Furthermore, inadequate knowledge about research methods, inability in evaluating the quality of research, lack of skills in critical appraisal and unfamiliarity with the research language were identified as barriers in implementing EBP. ^(24, 31, 32) These factors can be improved by attending educational activities. In-service classes and professional development sessions recommended by an earlier research, could also improve the knowledge of nurses regarding EBP. ⁽²¹⁾ Thus, this current finding conforms to previous studies that support the importance of providing education and training courses to facilitate the implementation of EBP. ⁽³³⁾ The findings also reflect that gender predicts the implementation of EBP; that females are more regular in implementing EBP than males. Further research on this is needed to better understand this relationship. Lastly, awareness of EBP also predicts

implementation of EBP by nursing students. An earlier study has reported that having poor awareness of research findings serves as a hindrance in the implementation of EBP.⁽³¹⁾ Increased awareness of student nurses on EBP will also result in more frequent implementation of EBP. This also supports the earlier finding of this research on training and seminars. These two variables are somewhat connected with each other. As nursing students engage in learning activities on EBP, their awareness on specific aspects of EBP will also improve. Thus, their implementation of EBP could also improve.

This study has some limitations. A convenience sampling technique was used for sample size identification. Hence, generalizability of the result is an issue. Although the limited sample size could also be an issue, the findings are consistent with previous studies conducted with a larger sample size and thus, still relevant to nursing students who are registered with the bridge program in other countries. Nevertheless, this study contributed information on the beliefs and implementation of EBP in the context of a Saudi nursing student population.

Conclusions

This study reported the EBP beliefs and implementation among nursing students under a bridge program in Saudi Arabia. Factors influencing EBP beliefs and implementation were also determined. Overall, the respondents reported a very positive belief towards EBP, but seldom used EBP in their clinical practice. Awareness on EBP, being male, being older and attendance at EBP trainings/seminars were factors influencing the EBP beliefs of the respondents. Attendance at training and seminars, gender and awareness of EBP were identified as factors that can influence implementation of EBP among the respondents. Providing education and training courses directed towards the facets of evidence-based nursing practice is very significant for nursing students to improve the integration of EBP in their clinical practice. Efforts to strengthen the awareness of the student nurses should be underscored.

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