Nursing Staff Awareness about Evidence Based Practice: Facilitations, Barriers and Beliefs

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Abstract

Background: Today evidence-based practice (EBP) becomes one of the best ways that used for making clinical decisions and has an effect on health care outcomes as well as it improves the quality of care provided to patients. **Aim:** Assess nursing staff awareness about evidence based practice facilitations, barriers and beliefs at Belqas Central Hospital (BCH). **Design:** Cross sectional design. **Settings:** current study was carried out at Belqas Central Hospital (BCH), affiliated to Ministry Of Health, Dakahlia Governorate. **Subjects:** the study was conducted on nursing staff (228). **Data collection tools:** Data was collected using evidence based practice (EBP) questionnaire, Facilitators to change practice based on evidence based practice scale, barriers to find, use and review evidence scale and evidence based practice beliefs scale. *Results:* revealed that the highest total mean score of facilitations was related to organizational structure and health care environment while the lowest mean score was related to research information. As well as the highest total mean score of barriers was related to individual nurse characteristics while the lowest mean score was related to research information. Also 69% of nursing staff were agreeing with EBP, realizing its benefits and importance. *Conclusion:* nursing staff focus on their experience and ways that always used in providing nursing care as a source for their information. In addition to most of them were competent in finding, reviewing and using evidence in practice. Organizational structure and health care environment was perceived as a main facilitation of EBP, while individual nurse characteristics were perceived as the highest barriers of EBP. Most nursing staff had positive beliefs about EBP and realized its benefits in health care system. **Recommendations**: Ongoing training programs about EBP for nursing staff, maintaining adequate staffing in different shift to relieve nurses' workload and help them to attain workshops and scientific conferences that updating and increasing their knowledge about EBP. Provide organizational support for EBP implementation. Translating the most relevant researches and distributed them for nurses to apply in practice to overcome the English language barrier. Increasing interest in the research and EBP process through integrating the EBP strategies in nursing curriculum.

Key words: Evidence based practice, Facilitations, Barriers, Beliefs.

Introduction

The World Health Organization (WHO) confirmed that social services and health care services should be established on the best research evidence due to benefits and importance of scientific research in all aspects of quality in health care system. Also, Evidence Based Practice (EBP) is one of the five competencies defined by the institute of medicine (IOM) and needed to achieve quality in health care, here the importance of EBP appeared. EBP considered a reason for improvement in patient results and outcomes when evidence used in clinical practice rather than traditions. Implementation of EBP is concerned with all quality aspects in health care system as

improvement of patient care, decreasing patient length of stay in hospital and costs, increasing level of patient satisfaction, efficient use of resources and decrease the use of unnecessary practices **(AbuRuz, Hayeah, Al-Dweik & Al-Akash, 2017).**

EBP defined as an approach used for solving problem to achieve the best clinical decisions within a healthcare system. EBP incorporates patient values and health care provider expertise with the best available scientific evidence. EBP enhances critical thinking before clinical interventions to patients, population or system. So the real and difficult challenge for health care providers is to use evidence in their practice to provide the best medical services and intervention and improve patient outcomes **(Dang & Dearholt, 2017).**

However many nursing practices are still based mainly on the nursing staff experience, traditions, intuitions, and untested theories. So, in an effort to increase using of evidence in nursing practice many studies focused on facilitations, barriers and beliefs as main variables of EBP. Readiness for EBP implementation depend mainly on the facilitations of EBP include level of evidence that needed, ease of implementation process, the organization culture that support ongoing learning and working with evidence-based process, managers and leaders who provide support for nursing staff and be role model for EBP. In addition nursing staff knowledge, beliefs, attitudes, and skills toward EBP process are important factors and facilitate implementation process **(Melnyk, 2016).**

Other facilitations include engaging patients in EBP process as key stakeholders in making health related decisions and reaching consensus, making evidence-based guidelines a routine in daily working process for building professional practice environment. Also providing more training opportunities for nursing staff, availability of EBP trainer and nurse leaders in hospital for supportive of EBP, supportive policies and guidelines written in simple way and availability of adequate, relevant, updated evidence written in familiar language for nursing staff appeared to be the most common facilitations for EBP process **(Melnyk et al., 2018).**

In spite of the availability of evidence, nursing staff rarely use it to make clinical decisions, but depend mostly on knowledge they got from their experience and social interactions. Possible explanation given for this phenomenon is presence of barriers to EBP that nursing staff complain from such as work pressure that prevent them to search evidence, insufficient knowledge and skills related to research process, lack of authority in practice to make and adapt changes, inadequate support from leaders and manager as well as lack of resources **(Duncombe, 2018).**

Many factors related to individual nursing staff characteristics and health care organization are perceived as barriers to use EBP and translate evidence into practice as lack of access to databases and lack of skills related to how to use those databases, unavailability of scientific articles in a native language and cost of them. Also, lack of training programs related to EBP benefits and how to implement it causing insufficient knowledge and skills about it and how to appraise research results critically. As well as lack of time for searching process, lack of nursing staff self-sufficiency and management support for changing practices are perceived barriers to EBP **(Pereira, Pellaux & Verloo, 2018).**

Additionally better understanding of nursing staff belief about EBP is crucial for supporting its use and determines their decision to adapt EBP. Whereas positive beliefs about EBP make nursing staff change their behavior toward implementing it in order to ensure high-quality health care and patient safety. Nursing staff confidence in using evidence in practice may increase after having knowledge and skills about it **(Pereira, Pellaux & Verloo, 2018).** Because nursing staff readiness for EBP depends on their knowledge and skills, their attitudes and beliefs toward it and their confidence in their own abilities to apply EBP **(Saunders & Vehviläinen-Julkunen, 2017).**

Finally, Today EBP has been considered the gold-standard of care in nursing profession. Clinical and academic organizations should focus on EBP to achieve needed quality in health care system. Consequently, health care professionals are expected to have ability in EBP implementation process to meet the needed demands and quality of health care organizations in twenty first century. To reach this goal, Evidence based practice: Facilitations, Barriers and Beliefs have been studied to facilitate implementation process of EBP and prepare future nurses **(Cruz et al., 2016).**

Significance of the study

Advantages of evidence based practice are many for all sectors of health care system started from health care system itself, patients, nursing staff to research and education. For health care system EBP save resources and time, reduce costs, provide strong base for health-care investment decisions and leading to improvement in the quality of care. While for patients EBP increase patient safety, increase patient satisfaction also patient preferences and values included in decision-making process leading to decrease in patients' length of stay and better patient outcomes.

In addition, for nursing staff EBP increase job satisfaction, improve nurses' skills as research and computer, help nursing staff to be more focus on practice away from traditions, provide support for professional growth and continuous career development through expert roles.

As well as for research and education EBP keep policies and procedures are current and include the latest research, be in line with international best evidence at the time of care and result in practice changes that allow significant cost saving and compete development **(WHO, 2017).**

Aim of the study

The present study aims to assess nursing staff awareness about evidence based practice: facilitations, barriers and beliefs.

Research questions

Q1: What are the sources of knowledge used by nursing staff used in their current practice?

Q2: What are nursing staff abilities in finding, reviewing and using different sources of evidence?

Q3: What are the facilitations of evidence based practice as perceived by nursing staff?

Q4: What are the barriers of evidence based practice as perceived by nursing staff?

Q5: What are nursing staff beliefs regarding evidence based practice?

Subjects & method

Research design: Cross sectional design was used.

Setting: This study was performed in Belqas Central Hospital (BCH), affiliated to Ministry Of Health, Dakahlia Governorate. This hospital provides multiple services as medical, surgical, emergency, intensive care unit (ICU), neonatal intensive care unit (NICU), cardiac care unit (CCU), maternity and gynecology, operations and dialysis unit. Bed capacity of this hospital was 300 beds.

Subjects: The study had a convenience sample of all available nursing staff having more than one year work experience in Belqas hospital at the time of research. (n=228)

Tools of data collection: Four tools were used for data collection.

Tool (I): Evidence Based Practice (EBP) questionnaire.

This tool adapted from Gerrish et al., (2007) and was modified by researchers.

It consists of three parts:

Part one: Personal and Occupational Data:

This part was used to collect data about nurse gender, age, years of experience, Level of education, current position, department and type of participation in nursing research.

Part two was intended to collect data about sources of knowledge that

nursing staff used in their current practice. It consists of 21 questions with five point Likert scale started with (1) Never, (2) Seldom, (3) Sometimes, (4) Frequently and (5) Always.

Part three: This part was used to collect data about nursing staff abilities in finding, reviewing and using different sources of evidence. It consists of 8 questions with five point Likert scale started with score 1 for Complete beginner, 2 for Novice, 3 for Quite skilled, 4 for Competent and 5 for Expert.

Tool II: Facilitations to change practice based on evidence based practice scale.

This tool was developed by researcher based on *(Gerrish et al., 2007 and Funk, Champagne, Wiese & Tornquist, 1991)* to assess facilitations to change practice based on evidence.

This tool consists of 24 items covered three dimensions as follow; individual nurse characteristics (8 items), organizational structure and health care environment (12 items) and facilitations to obtain research information (4 items). Response of subjects was measured with 5 point Likert scale ranged from (1) Strongly disagree to (5) Strongly agree.

Tool III: Barriers to find, use and review evidence scale.

This tool was developed by researcher based on *(Gerrish et al., 2007 and Funk, Champagne, Wiese & Tornquist, 1991) to assess barriers to find, use and review evidence.*

This tool consists of 50 items covered three dimensions as follow; individual nurse characteristics (20 items), organizational structure and health care

environment (18 items) and nature of research information (12 items). Response of subjects was measured with 5 point Likert scale ranged from (1) Strongly disagree to (5) Strongly agree.

Tool IV: Evidence Based Practice Beliefs Scale

This tool was adopted by (Melnyk, Fineout-Overholt & Mays, 2008) to assess nursing staff beliefs toward evidence based practice and consists of 16 items to collect data about nurses beliefs toward evidence based practice using five point Likert scale started with (1) Strongly disagree to (5) Strongly agree.

Methods

● An ethical approval was got from the Research Ethics Committee of the Faculty of Nursing, Mansoura University.

● Permission to perform study was obtained from the responsible authorities of study setting after providing an explanation of the aim and the nature of the study.

● Tools were developed by the researcher based on reading and reviewing recent relevant literatures. This phase included review of literatures that covering many aspects of evidence based practice facilitations, barriers and beliefs as perceived by nursing staff. The researcher used accessible books, articles, and different internet sites as Google scholar, PubMed, Yahoo, Cochrane library, ProQuest and Medline to be familiar with all relevant literature and to develop most appropriate tools that used to collect data.

● Tools were translated into Arabic and assessed for validity of its content by five experts in the same study field from different nursing faculty and assessed for

its clarity, relevancy, applicability, comprehensiveness, understanding, sequence of items and ease for implementation. According to their opinion simple modifications were applied as number of items in **tool I part 2** became 21 items instead of 22 items also number of items in **tool II** became 24 items instead of 20 items and number of items in **tool III** became 50 items instead of 51 items as well as **tool IV** became 16 instead of 15.

● The content validity of the study tools measured to evaluate each item and the entire instrument as being relevant and suitable to test what they wanted to measured. Content validity index (CVI) for evidence based practice questionnaire (r=0.96), Facilitations to change practice based on evidence based practice scale (r=0.95), Barriers to find, use and review evidence scale (r=0.85) and Evidence based practice beliefs scale (r=0.75).

● The pilot study was performed on 25 nurses who were randomly selected from the nursing staff at Belqas central hospital to assess the clarity, feasibility and applicability of the tools and were excluded from the total sample and modifications were done based on their responses.

Field work:

The field work was carried out through 3 months that started from April 2019 to the end of June 2019. The pilot study took 2 weeks to be fulfilled and the rest of 3 months to collect the required data. The researcher was available every day in different shifts morning, after noon and nights shift, met with nurses and took about 15 minutes to talk with them about the topic of study, its importance and explanation for sheets and gave them enough time to fulfill sheets. The time

needed to complete the sheets ranged from 20-25 minutes.

Ethical consideration:

● An informed consent was obtained from nursing staff who accept to participate after providing explanation of the nature of the study and study aim.

● All study participants were informed that participation is voluntary process and that they have the right to withdraw from the study at any time.

● All participants were assured about the confidentiality and privacy of the collected data.

Statistical Analysis:

The collected data were coded, processed and analyzed using the SPSS (Statistical Package for Social Sciences) version 22 for Windows® (SPSS Inc, Chicago, IL, USA). Qualitative data was presented as number and percent. Quantitative data was tested for normality by Kolmogrov-Smirnov test. Normally distributed data was presented as mean ± SD. Student t-test was used to compare between two groups. F-test (One Way Anova) was used to compare between more than two groups. Pearson's correlation coefficient was used to test correlation between variables. $P < 0.05$ was considered to be statistically significant.

Level of significance

For all above mentioned statistical tests done, the threshold of significance is fixed at 5 % level (p-value). The results were considered:

● Non-significance when the probability of error is more than 5 % ($p > 0.05$).

● Significance when the probability of error is less than 5 % ($p < 0.05$).

● The smaller the p-value obtained, the more significance are the results.

Limitation of study

● Due to work pressure in some department's especially critical departments, it was difficult to take some time from nurses to provide explanation about the study and how to fulfill sheets.

● Some of nurses were in vacations for long period during data collection time.

● The topic of the study was new to some nurses and took time in understanding.

● Few numbers of nurses refuse to participate in the study.

Results

Table (1) Personal characteristics of nursing staff in Belqas Central Hospital. This table illustrates that most of nursing staff (67.1 %) were in age group <30 years and (66.7 %) of them had < 10 years of experience. The majority of them (82 %) were female and (40.8%) of nursing staff had bachelor degree. High percent of them (55.7 %) were staff nurse.

Table (2) Sources of knowledge as perceived by nursing staff in their current practice and shows that high percent (74.6%) of nursing staff were frequently and always use ways done in providing nursing care as the main source of

knowledge followed by (74.1%) for personal experience, and (68.4%) the repeated actions for years with patients. As well as more than (66 %) of nursing staff used information from local policy and guidelines. On the other hand low percent (31.2%) of nursing staff used information from pharmaceutical representatives as a source of knowledge.

Figure (1) Nursing staff current skills in finding, reviewing and using sources of evidence. It illustrate that (38%) from nursing staff were competent in finding, reviewing and using evidence in practice, (29%) were quite skilled while considerable percent (23%) were complete beginners and novice skills.

Figure (2) Total mean score of facilitations to change practice based on evidence as perceived by nursing staff and illustrate that the highest total mean score of facilitations was related to organizational structure and health care environment (50.2 ± 5.93), while the lowest mean score was related to research information (16.05± 2.28).

Figure (3) Total mean score of barriers to change practice based on evidence as perceived by nursing staff. Barriers related to individual nurse characteristics had the highest total mean score (74.89 ± 11.36) while barriers related to research information had the lowest total mean score as perceived by nursing staff (46.14 ± 6.46).

Table (3) Nursing staff beliefs about evidence based practice. More than (90 %) of nursing staff believed that implementation of EBP will improve the care that they provide to patients and EBP results in the best clinical care for patients. Also, (89.5%) of them believed that evidence- based guidelines can improve clinical care. On the other hand more than (60 %) of nursing staff not believed that the process of EBP takes too much time and that EBP is difficult to implement.

Figure (4) Agreement of nursing staff beliefs about evidence based practice and shows that (69%) of nursing staff were agree with EBP and (17%) of them were disagree with EBP process.

Table (4) Relations between personal characteristics of nursing staff with sources of knowledge & nursing staff abilities. The table illustrates that statistical significant relation was found between nursing staff gender with uses sources of knowledge where male had the highest mean score (79.32 ± 11.92) in using different sources of knowledge than female (72.29 ± 12.27). Another statistical significant relation was found between nursing staff age with their abilities where (30-40y) had the highest mean score (28.69 ± 7.13) for ability to find review and use evidence.

Also, statistical significant relations were found between experience with sources of knowledge and nursing staff abilities where more experienced nursing staff (>15) had the highest mean score (78 ± 14.3) of uses sources of knowledge and (10-15y) of experience had the highest mean score ability (28.65 ± 7.52).

In addition, statistical significant relations were found between education with sources of knowledge and nursing staff abilities where nursing staff with master had the highest mean score of uses sources of knowledge and ability (89.56 ± 12.95) , (34.22 ± 2.99) respectively. As well as statistical significant relation was found between current position with sources of knowledge where head nurses had the highest mean score of uses sources of knowledge (83.78 ± 15.75).

Table (5) Relations between personal characteristics of nursing staff with facilitations to change practice, barriers and beliefs about evidence based practice. statistical significant relation was found between nursing staff gender with their awareness about EBP barriers where male had the highest mean score of barriers (200.51 ± 18.14) than female (193.81 ± 24.68). Also statistical significant relations were found between nursing staff experience with facilitations to change practice, barriers and beliefs about EBP where more experienced nursing staff >15y had the highest mean score of awareness about EBP facilitations and barriers (103.89 ± 8.45), (208.61 ± 16.39) respectively but (10-15y) of experience had the highest mean score beliefs about evidence (61.38 ± 6.96).

Another statistical significant relation was found between educations with EBP barriers where nursing staff with master had the highest mean score (211.44 ± 24.53). In addition, statistical significant relation was found between current position of nursing staff with their awareness about EBP facilitation and barriers where head nurses had highest mean score (104.22 ± 8.44), (211 ± 24.27) respectively.

Discussion

Where and how nursing staff were obtaining the knowledge for their practice is an originator step of EBP implementation process. Sources of knowledge are those places from which nursing staff drew data that used to solve clinical problems and make clinical decisions. The study results revealed that, main sources of knowledge nursing staff frequently and always used for practice were the ways they had always done in providing the nursing care, their personal experience that used in caring for patients over time, repeated actions for years with patients, information they got from local policy and guidelines as well as information learned during training.

It is not amazing that nursing staff had high respect for experiential knowledge that acquired every day because of daily clinical meetings with different patients and physician as well as spending more time observing and caring for patients with different diagnosis and treatment plan. Also, availability of local polices and guidelines in working area would save nursing staff time and help them to get information as fast as possible during working time. In addition, providing learning environment and nursing training programs in hospital were important sources of knowledge for nursing staff because it is difficult for them to find time to acquire new knowledge due to work pressure and time away from the clinical unit may be a limiting factor for seeking information.

These results agree with **Li, Cao, & Zhu, (2019)** who mentioned that nursing staff didn't make decisions based on recently and high quality evidence, but on their experiences acquired from repeated clinical situations. Also **Hamaideh, (2017)** added that the main sources of knowledge nursing staff used in practice were information they had from personal experiences, information from local policy and guidelines as well as information learned in training. Furthermore **Kilicli, Kelber, Akyar & Litwack, (2019)** mentioned that experience was the main source for knowledge used in nursing practice followed by hospital policy, procedures and guidelines.

As well The Institute of Medicine (IOM) defined health care quality as the degree to which health care services provided for populations with increase the

probability of desired health outcomes and are constant with current professional knowledge. So, Health care providers must have current evidence knowledge and have the ability to find and review evidence to can communicate scientific value of interventions and consequences of treatment options with patients to provide care with high quality **(Fencl & Matthews, 2017).** Moreover, EBP depends on three main components which are the best scientific evidence into practice and combining that knowledge with clinical expertise and patient values and wishes **(Williamson, Almaskari, Lester & Maguire, 2015).**

Based on that, it's important to know nursing staff abilities in finding, reviewing and using evidence to change practice and evaluate the ease of implementation process of EBP. The study results revealed that most of nursing staff were competent in finding evidence and information in researches, accessing internet to search for information also they are competent in reviewing and using evidence to change practice. Nursing staff were competent because most of them had bachelor degree and already had previous information and skills related to research and EBP process acquired during years of education. Also, the new trend in health care organizations that concerned with quality focused on the importance of scientific research and made efficacy one of quality dimensions so that improvement nursing staff abilities in finding, reviewing and using evidence became important.

In the same line of these results **Wan, (2018)** who indicated that educational interventions improve nurses' knowledge and skills regarding EBP resulting in improving perceived ability to find, review and use evidence in order to implement EBP. As well as nursing professional associations advocated EBP

through effective educational interventions to prepare nurses with needed skills and knowledge to become EBP competent. In addition to, **Malik, McKenna & Plummer, (2015)** indicated that nursing staff who had highest qualifications were more likely to find, review and use evidence to change practice. Also, educational level was directly related to have skills and knowledge of using research process.

The importance of facilitation illustrated in a combination with strong evidence as well as a context supportive of change and this can lead to successful implementation of EBP. Facilitation is a technique that helps nurses to adapt EBP process by providing support to help them change their ways of thinking and working style **(Cranley, Cummings, Profetto-McGrath, Toth & Estabrooks, 2017).** Implementing evidence into practice is a complex and multifaceted process that requires a positive effort to encourage use at both individual and organizational level **(Squires et al., 2013).**

Current study revealed that the highest total mean score of facilitations was related to organizational structure and health care environment that reflects the importance of organizational readiness in implementing and supporting of EBP. In the same line of this result **Yoo, Kim, Kim, Kim & Ki, (2019)** indicated that readiness of the organization was the main prompting factors on the EBP implementation process. Also, **Harper et al., (2017)** indicating the importance of being organizations ready to be system-wide for EBP implementation process. Although the performance of EBP positively improves nursing outcomes and health care quality, EBP establishing process creates work load and psychological burden for nursing staff and may lead to resistance from unfamiliar

concepts. So nursing staff efforts in performing EBP is necessary but above their efforts, it's crucial to establish an organizational readiness to support EBP at the nursing individual level **(Yoo, Kim, Kim, Kim & Ki, 2019)**.

Moreover, EBP knowledge is difficult to improve by nursing staff effort alone, so organizational support is important to provide training programs that help in creating learning atmospheres and other facilities as financial resources for successful EBP establishment **(Nam et al., 2017)**. Also the effects of staffing and workload on the implementation process reported by study participant as a facilitation factor related to organization. As presence of more nurses per shift will reduce workloads and provide an opportunity for research process. This result agree with **Li, Jeffs, Barwick & Stevens, (2018)** who revealed that nursing staff facing heavy workloads and insufficient staffing on normal routine activities causing problem to carry out change so that assigning number of committed nurses to perform the change was associated with successful implementation.

Although moving toward EBP is necessary and needed to go in the new era of health care quality. However it has been reported in more places that clinical care is individualized and nursing staff depended mainly on their intentions and traditions. So it's important for nursing staff to persuade of importance of EBP firstly and be aware of its barriers to seek to overcome and implement it easy **(Sin & Bliquez, 2017)**. Whereas individual barriers could be recognized strongly to lack of knowledge about the importance of EBP and noted that negative beliefs and attitude of healthcare providers toward EBP represent a significant EBP barrier. Indeed, strong interventions that aimed at

increasing nursing staff awareness about EBP barriers and how to overcome needed to adapt practices based on evidence and crucial for successful implementation process **(Shayan, Kiwanuka & Nakaye, 2019)**.

Study results revealed that barriers related to individual nurse characteristics had the highest total mean score followed by barriers related to organizational structure and health care environment. Nursing staff reported that time constraint is the main factor causing barrier to EBP because more tasks and responsibilities in nursing profession in addition to shortage of nursing staff that increase work load and these reasons prevent them to find time to interest in research process. **Al-Jamei, Abu Farha, Zawiah, Kadi & Al-Sonidar, (2019)** supported this result by mentioning that limited access to EBP sources and lack of nurses time were the major barriers to practice EBP. As well as low knowledge and skills they have about research process make difficulty in using library and net for searching process.

Again **Florczak, (2016)** agreed with this results indicating that individual barriers represented one of the main and more important barriers and formed strong effect on nursing staff perceptions to research utilization in nursing practice. In contrast of this result **Dadipoor, Ramezankhani, Aghamolaei & Safari-Moradabadi, (2019)** who indicated that the most dominant barriers to research activities among study participant were organizational and personal barriers, respectively.

Regarding nursing staff beliefs about EBP, their beliefs about EBP benefits and their ability in implementing evidence in practice determine their decision to make a change in their behavior toward implementing EBP.

Decision for change will occur if nursing staff confirm the idea that EBP will improve patient outcomes when the best evidence used **(Wan, 2018).** As well having knowledge and skills in EBP are important to increase confidence in using evidence and make a commitment to the change as well as positive beliefs can predict the successful implementation of EBP. Most obvious facilitators for EBP are concerned with individual knowledge and beliefs, this is due to the stronger nursing staff positive beliefs about EBP, the more evidence-based can implement **(Warren et al., 2016).**

In the present study, nursing staff revealed their beliefs about EBP as they perceived that EBP implementing will improve the delivered care, EBP results in the best practice, evidence based polices and guidelines can improve clinical care as well as they can overcome barriers in implementing EBP. The new era focused on how to improve health care quality to increase patient satisfaction and create more productivity in health care environment and considered evidence based as one of quality dimensions. So, hospital leaders and educators play the main roles in providing nursing staff with knowledge and skills that promote using and applying evidence in practice and increase the importance of EBP and nursing staff beliefs about it.

Clinical training, workshops, availability of updated hospital policy and guidelines as well as clinical educators responsible for implementation process of EBP are crucial factors for positive beliefs regarding EBP and needed for supporting nursing staff to overcome barriers and engage in EBP implementing process. Moreover about two third of study participant are agree with EBP and realized its benefits in health care system. The nurses agreed with the positive

aspects of EBP and higher scores indicated stronger EBP beliefs **(Eaton, Meins, Zeliadt & Doorenbos, 2017).** Also, **Pereira, Pellaux & Verloo, (2018)** indicated that higher scores revealed more positive beliefs and agreement for EBP.

In the agreement of these results **Kilicli, Kelber, Akyar & Litwack, (2019)** mentioned that most of his study participants realized that research results could improve nursing care quality. Additionally, nursing staff who reviewed nursing research results had high positive attitude, beliefs, and intention to conduct EBP than others. And nursing staff that used clinical guidelines in their practice had higher positive beliefs towards EBP. On the other hand, the present study results disagreed with the results of **Sin & Bliquez, (2017)** who mentioned that some nursing staff believed that research is a complex process, also lack the motivation to research process as well as appraising evidence are barriers to EBP. In addition care is individualized process and involves doubts and probabilities so EBP is unfavorable process.

Analysis of the study data revealed important relations between personal characteristics of nursing staff with sources of knowledge, nursing staff abilities, facilitations, barriers and beliefs about evidence based practice.

Regarding relations with nursing staff gender, mentioning that there were statistically significant relations between nursing staff gender with sources of knowledge used and nursing staff awareness about EBP barriers. Nursing staff males used more sources of knowledge and had more awareness about EBP barriers than females due to more time males had that help them to work more in different places, meet different health care specialist, share skills and

recognize more sources of knowledge used in practice. In addition, male nursing staff had less responsibility and enough time than females nursing staff that help them in attending conferences or meetings and accepting knowledge about EBP variables.

The relations with nursing staff age**,** the present study confirmed that statistical significant relation was found with their abilities in finding, reviewing and using evidence showing that older nursing staff had more abilities than others. Possible explanation for this is that the young and the newly graduate nursing staff do not have enough authority to use information to change practice, don't have enough abilities related to formulate research question also they have lack of confidence to use evidence in practice. But the older nursing staff have a lot of abilities and confidence accepting during years of work and obtaining through clinical training that help in finding, using and reviewing evidence. Also younger nurses are more overloaded with many job tasks than older this made older nursing staff had some time to promote their abilities about research process. In the same line of this result **Mohamed & Mohamed, (2018)** mentioned that highly significant relation was found between nursing staff age with their self -efficacy and their abilities to accept evidence-based activities. In contrast of this result **Almaskari, (2017)** mentioned that there was no significant relations between age and EBP related abilities.

Nursing staff experience had statistical significant relations with sources of knowledge, nursing staff abilities, their awareness about EBP facilitations, barriers and beliefs. More experienced nursing staff used more sources of knowledge in practice and discovered more sources with more years of work due to interaction with health care

team and clinical training. In the agreement of these results **Hamaideh, (2017)** mentioned that there was significant relationship between experience and sources of knowledge. Knowledge was gained mainly through interactions with different people and patients over the years **(Almaskari, 2017)**.

Also, more experienced nursing staff had more abilities due to more years of work with patients and years of interaction with health care team that help in promoting abilities. Possible explanation for this result is daily interaction between nursing staff and others in health care system played an important role in sharing knowledge and skills over years and help in improving abilities in finding, reviewing and using evidence. In agreement of this result, **Ammouri et al., (2014)** reported that experience had a significant relation with the EBP, how to find and use. Also, due to introduction of EBP concept in the health care organization is new and the Ministry of Health provided EBP workshops for all nursing staff this leading to gain more abilities over years of experience.

As well, more experienced nursing staff had more awareness about facilitations and barriers to change practice based on evidence. This results may be due to the more experience, the greater the awareness of importance of EBP in improving practice and accepting the process to implement. The new approach that focused on scientific research and how to use it in practice that made nursing staff more concerned with it causing increase their awareness about EBP facilitation to implement and barriers to overcome in future.

In the same line of this result, **Underhill, Roper, Siefert, Boucher & Berry, (2015)** mentioned that nursing staff

that had more training and previous knowledge and experience about EBP would know more facilitation to implement EBP. This result was also consistent with **Melnyk et al., (2016)** who mentioned that the more the nursing staff use EBP at work, the fewer barriers they may face in implementing it because when they practice EBP frequently at work, it may became the practice culture over the time so more years of EBP experience be profit in implementation process. In contrast with this study result, **Melnyk et al., (2016)** mentioned that there was no significant relation between the years of experience and EBP barriers.

In addition, more experienced nursing staff had positive beliefs in EBP. By experience nursing staff realized the importance of EBP and its positively effect on quality of care and health care outcome. Also, health care system become concerned with EBP resulting in disseminating this new concept and increasing training programs related to it to affect nursing staff beliefs positively over years of experience. So, educators in hospital are interested in EBP and improving nursing staff beliefs about it. This result agree with the result of **Baird & Miller, (2015)** who mentioned that more experienced nurses reported best knowledge and positive beliefs about EBP.

Regarding the relations with educational level, study results indicated that nursing staff with high educational level had more sources of knowledge, high abilities to find, review and use evidence and more awareness about EBP barriers. This is not amazing because they already known more sources of knowledge that acquired during their study. In addition most of them became concerned with post graduate learning to improve their scientific level resulting in discovering more sources of knowledge used in

practice. Also, continuous improvement in health care system and educational curriculum gave an attention for scientific research and skills related to it causing in improving nursing staff abilities and awareness about EBP and its barriers that facing them in work place.

In the same line of these results **Ozsoy & Ardahan, (2008)** reported that positive relationship was found between educational level and sources of knowledge used in practice where the highest level of education demonstrated positive effect on research process and more knowledge sources. Consequently **Malik, McKenna & Plummer, (2015)** also mentioned that nursing staff that had highest qualifications and training programs are more likely to find, use best evidence for practice. Additionally **Hamaideh, (2017)** agreed in his study that there was a significant relation between educational level with barriers to change practice revealed that nurses with higher educational levels had more awareness regarding EBP.

The relation with nursing staff current position, the study results revealed statistical significant relations between nursing staff current position with sources of knowledge, nursing staff awareness about EBP facilitations and barriers. Head nurses face many challenges in their managerial role because their role is highly important in the success of healthcare organizations and achievement of quality health services so they require firm skills and competences to can confirm their roles as well as they are the key to professional communication between management and nursing staff **(Nazari, Vanaki, Kermanshahi & Hajizadeh, 2018).**

Head nurses had many roles and responsibilities as they responsible for managing the performance and

effectiveness of all nursing staff under their management, reviewing and updating nursing staff knowledge and skills used in practices as well as developing effective training programs in addition to unit management (**Dehghani, Nasiriani & Salimi, 2016).** The big roles of head nurses are training and supervision so they should be cope with the updated information needed for change in their work from different sources to provide suitable training programs and can assess nursing staff performance in work. In addition their position put them in interactions with more important persons as physician, technicians, supervisors and health care trainer resulting in acquiring more sources of knowledge. Furthermore head nurse plays an important role in conducting facilitations and removing barriers that help staff nurses developing EBP competencies, promoting and supporting

the transition of evidence into practice so she must be aware about EBP facilitations and barriers to can overcome.

That's agreed with **koehn & Lehman, (2008)** who mentioned that nurses with higher position and education were using and valuing the best available sources of evidence in practice than others. In contrast of this result **Almaskari, (2017)** mentioned that there was no significant relation between nurses position and facilitations to change practice. But he supported that nurses' leaders perceived more awareness about EBP barriers than nursing staff because nursing staff were less confident in getting changes in practice and felt difficulty to overcome barriers for achieving EBP (**Almaskari, 2017).**

Table (1): Personal characteristics of nursing staff (n=228)

variables	No (n=228)	%
Age		
<30y	153	67.1
30-40y	51	22.4
>40y	24	10.5
Experience		
<10y	152	66.7
10-15y	48	21.1
>15y	28	12.3
Gender		
Female	187	82.0
Male	41	18.0
Education		
Diploma	56	24.6
Institute	70	30.7
Bachelor	93	40.8
Master	9	3.9
Current Job		
Staff Nurse	127	55.7
Nursing specialist	77	33.8
Clinical Educator	10	4.4
Head nurse	9	3.9
Other	5	2.2
Department		
Medical and Surgery	20	8.8
Emergency	27	11.8
Intensive care unit	63	27.6
Neonatal intensive care unit	64	28.1
Dialysis unit	18	7.9
Other	36	15.8

Table (2): Sources of knowledge as perceived by nursing staff in their current practice. (n=228)

No	Items	Never		Seldom		Sometimes		Frequent		Always	
		No	%	No	%	No	%	No	%	No	%
1	Information about each patient.	10	4.4	8	3.5	76	33.3	102	44.7	32	14.0
2	Information shared with fellow	1	0.4	8	3.5	80	35.1	103	45.2	36	15.8
3	Information shared between nursing supervisors.	5	2.2	19	8.3	64	28.1	102	44.7	38	16.7
4	Information discussed with doctors.	2	0.9	21	9.2	69	30.3	100	43.9	36	15.8
5	Information from treatment prescription.	14	6.1	21	9.2	77	33.8	80	35.1	36	15.8
6	Information from pharmaceutical representatives.	51	22.4	65	28.5	41	18.0	51	22.4	20	8.8
7	Information from literature.	19	8.3	52	22.8	72	31.6	64	28.1	21	9.2
8	Information learned during training.	2	0.9	6	2.6	81	35.5	97	42.5	42	18.4
9	Information from conferences.	21	9.2	10	4.4	76	33.3	74	32.5	47	20.6
10	Information from policy and protocols.	2	0.9	10	4.4	66	28.9	111	48.7	39	17.1
11	Information from national policy /guidelines.	3	1.3	11	4.8	63	27.6	117	51.3	34	14.9
12	Information from work reports.	4	1.8	19	8.3	80	35.1	90	39.5	35	15.4
13	Information from medical journals.	39	17.1	38	16.7	58	25.4	68	29.8	25	11.0
14	Information from nursing journals.	38	16.7	41	18.0	51	22.4	70	30.7	28	12.3
15	Information from research journals.	40	17.5	47	20.6	47	20.6	67	29.4	27	11.8
16	Information in books.	7	3.1	41	18.0	78	34.2	71	31.1	31	13.6
17	Information from net.	4	1.8	36	15.8	64	28.1	83	36.4	41	18.0
18	Intuitions about what seems to be right.	5	2.2	8	3.5	80	35.1	96	42.1	39	17.1
19	Personal experience.	2	0.9	7	3.1	50	21.9	111	48.7	58	25.4
20	The repeated actions with patients.	0	0.0	12	5.3	60	26.3	101	44.3	55	24.1
21	The ways always done.	0	0.0	3	1.3	55	24.1	111	48.7	59	25.9

Figure (1): Nursing staff current skills in finding, reviewing and using sources of evidence. (n=228)
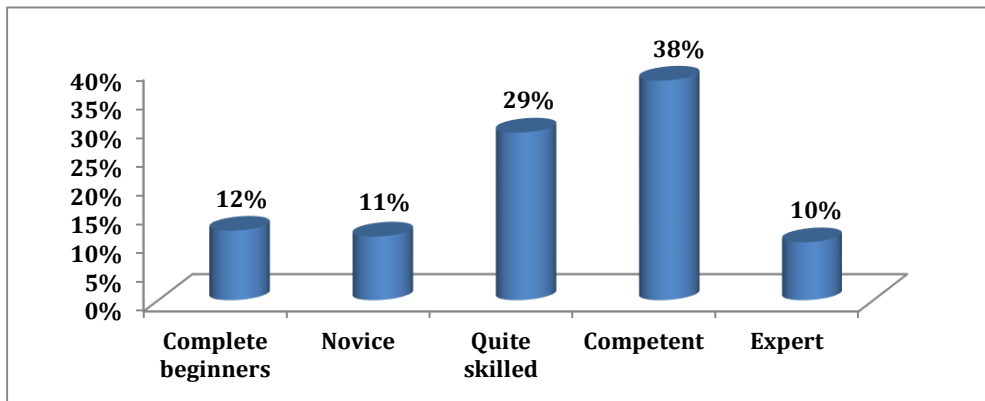

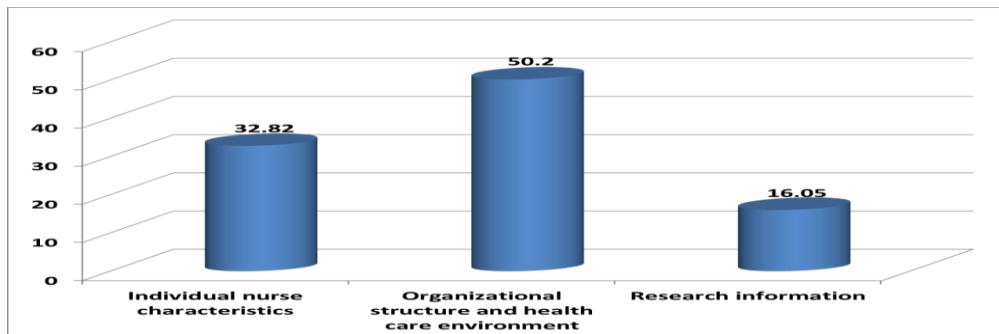**Figure (2): Total mean score of facilitations to change practice based on evidence as perceived by nursing staff. (n=228)**

Figure (3): Total mean score of barriers to change practice based on evidence as perceived by nursing staff. (n=228)

Table (3): Nursing staff beliefs about evidence based practice. (n=228)

No	Items	Strongly disagree		Disagree		Neither agree or disagree		Agree		Strongly agree	
		No	%	No	%	No	%	No	%	No	%
1	EBP results in the best clinical care.	2	0.9	3	1.3	17	7.5	121	53.1	85	37.3
2	Implementing EBP will improve the delivered care.	1	0.4	6	2.6	14	6.1	119	52.2	88	38.6
3	I can overcome barriers in implementing EBP.	2	0.9	5	2.2	27	11.8	136	59.6	58	25.4
4	Critically appraising evidence is an important step in the EBP.	0	0.0	2	0.9	27	11.8	142	62.3	57	25.0
5	I can search for the best evidence to answer clinical questions.	2	0.9	20	8.8	29	12.7	118	51.8	59	25.9
6	Evidence- based guidelines can improve clinical care.	0	0.0	4	1.8	20	8.8	137	60.1	67	29.4
7	The care that I deliver is evidence-based.	3	1.3	36	15.8	47	20.6	100	43.9	42	18.4
8	I am clear about the EBP steps.	2	0.9	43	18.9	51	22.4	89	39.0	43	18.9
9	I am sure about the outcomes measure of clinical care.	5	2.2	14	6.1	42	18.4	140	61.4	27	11.8
10	I am sure that I can implement EBP.	2	0.9	23	10.1	20	8.8	143	62.7	40	17.5
11	I am sure that I can implement EBP in a time-efficient way.	2	0.9	23	10.1	39	17.1	122	53.5	42	18.4
12	I know how to implement EBP to make practice changes.	3	1.3	23	10.1	41	18.0	126	55.3	35	15.4
13	I am sure that I get the best resources to implement EBP.	2	0.9	28	12.3	28	12.3	129	56.6	41	18.0
14	I am confident about my ability to implement EBP.	1	0.4	30	13.2	31	13.6	130	57.0	36	15.8
15	I believe that EBP takes too much time.	46	20.2	112	49.1	38	16.7	29	12.7	3	1.3
16	I believe that EBP is difficult to implement.	38	16.7	117	51.3	32	14.0	35	15.4	6	2.6

Figure (4): Agreement of nursing staff beliefs about evidence based practice. (n=228)
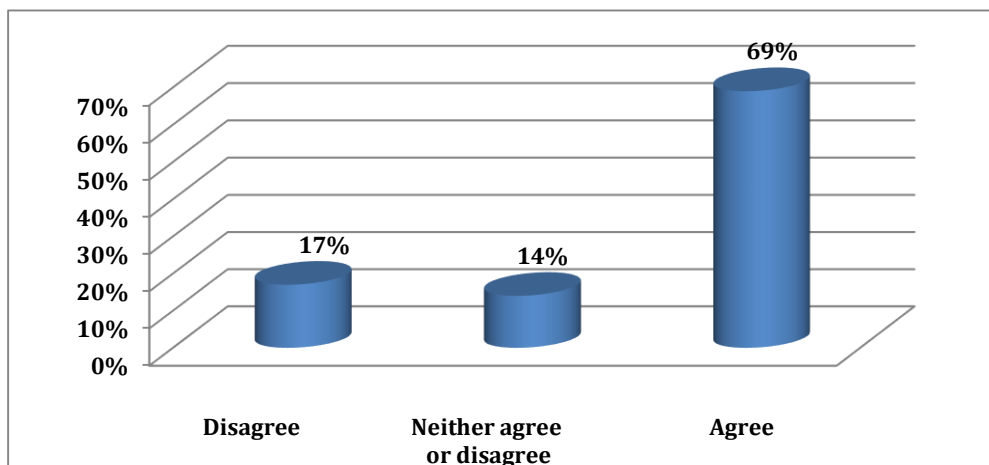

Table (4): Relations between personal characteristics of nursing staff with sources of knowledge & nursing staff abilities. (n=228)

Personal characteristics	No	Sources of knowledge		Nursing staff abilities	
Gender					
Female	187	72.29 ± 12.27	t = 3.338	25.88 ± 7.6	t = 0.633
Male	41	79.32 ± 11.92	P = 0.001*	25.05 ± 7.81	P = 0.527
Age					
<30y	153	72.25 ± 12.2		24.7 ± 7.4	
30-40y	51	76.08 ± 12.32	F = 2.586	28.69 ± 7.13	F = 5.454
>40y	24	76.5 ± 13.71	P = 0.078	26.04 ± 8.7	P = 0.005*
Experience					
<10y	152	71.93 ± 11.86		24.65 ± 7.33	
10-15y	48	76.1 ± 12.48	F = 4.185	28.65 ± 7.52	F = 5.416
>15y	28	78 ± 14.3	P = 0.016*	26.61 ± 8.26	P = 0.005*
Education					
Diploma	56	71.61 ± 10.83		24.55 ± 8.51	
Institute	70	71.29 ± 12	F = 7.028	25.17 ± 7.49	F = 4.544
Bachelor	93	74.88 ± 12.59	P = 0.001*	26.04 ± 7.01	P = 0.004*
Master	9	89.56 ± 12.95		34.22 ± 2.99	
Current position					
Staff nurse	127	71.57 ± 11.6		25.07 ± 7.91	
Nursing specialist	77	74.66 ± 12.22	F = 4.115	25.55 ± 7.16	F = 2.299
Clinical Educator	10	82.7 ± 16.12	P = 0.003*	28.5 ± 7.4	P = 0.060
Head nurse	9	83.78 ± 15.75		31.89 ± 6.81	
Other	5	70.2 ± 8.56		28.8 ± 3.42	

Table (5): Relations between personal characteristics of nursing staff with facilitations to change practice, barriers & beliefs about evidence based practice. (n=228)

personal characteristics	No	Facilitations		Barriers		Beliefs	
Gender							
Female	187	99.25 ± 10.26	t = 0.588 P = 0.557	193.81 ± 24.68	t = 1.996 P = 0.050*	59.14 ± 7.8	t = 0.409 P = 0.683
Male	41	98.2 ± 11.1		200.51 ± 18.14		59.68 ± 6.85	
Age							
<30y	153	98.61 ± 10.84	F = 1.190 P = 0.306	194.17 ± 23.85	F = 2.081 P = 0.127	58.69 ± 7.73	F = 1.354 P = 0.260
30-40y	51	98.98 ± 9.72		193.2 ± 25.97		60.67 ± 7.25	
>40y	24	102.13 ± 8.62		204.25 ± 15.5		59.75 ± 7.61	
Experience							
<10y	152	98.67 ± 11.05	F = 3.773 P = 0.024*	193.48 ± 24.65	F = 5.518 P = 0.005*	58.29 ± 7.72	F = 3.696 P = 0.026*
10-15y	48	97.48 ± 8.48		191.94 ± 22.12		61.38 ± 6.96	
>15y	28	103.89 ± 8.45		208.61 ± 16.39		60.75 ± 7.47	
Education							
Diploma	56	98.07 ± 10.42	F = 1.023 P = 0.383	195.93 ± 19.82	F = 3.138 P = 0.026*	59.75 ± 8.14	F = 0.915 P = 0.434
Institute	70	98.19 ± 12.22		189.33 ± 27.75		58.29 ± 7.19	
bachelor	93	99.91 ± 9.18		197.15 ± 21.69		59.37 ± 7.83	
Master	9	103.22 ± 4.84		211.44 ± 24.53		62.22 ± 4.87	
Current position							
Staff nurse	127	97.26 ± 11.6	F = 2.443 P = 0.048*	191 ± 25.1	F = 3.805 P = 0.005*	58.6 ± 7.67	F = 1.298 P = 0.272
Nursing specialist	77	101.04 ± 8.35		200.3 ± 18.92		59.97 ± 7.68	
Clinical Educator	10	100.3 ± 6.8		199.5 ± 20.57		57.1 ± 6.17	
Head nurse	9	104.22 ± 8.44		211 ± 24.27		62.11 ± 7.59	
Other	5	102.6 ± 8.32		177.8 ± 34.51		63.4 ± 7.16	

Conclusion

It is important that health care practice should be supported by high quality research evidence in order to deliver the best possible care. However, nursing staff in Belqas Hospital focus on their experience and ways that always used in providing nursing care as a source for their information. In addition to most of them were competent in finding, reviewing and using evidence in clinical practice. Organizational structure and health care environment was perceived as a main facilitation of EBP, while individual nurse characteristics were perceived as the highest barriers of EBP. Most nursing staff

had positive beliefs about EBP and realized its benefits in health care system. Older, more experienced nursing staff and had higher education were more using sources of knowledge, had more abilities and had more awareness about EBP facilitation and barriers than others. Using more sources of knowledge and having more abilities in finding, reviewing and using evidence increase nursing staff awareness about EBP barriers. Also, positive beliefs about EBP contributed to more nursing staff awareness about its facilitation and barriers.

Recommendations

Based on the finding of this study it recommended that:

▪ Ongoing training programs about EBP for nursing staff including training on the use of technology for searching for evidence, statistical analysis, and research application that could help them in implementing EBP.

▪ Maintaining adequate staffing in different shift to relieve nurses' workload and help them to attain workshops and scientific conferences that updating and increasing their knowledge about EBP.

▪ Encouraging cooperation among nursing staff and educators to facilitate information sharing skills.

▪ Conducting regular meetings with nursing staff to identify their problems related EBP and giving them feedback about the impact of effective EBP on health care outcome.

▪ Developing strategic planning to move organizations toward evidence-based practice and identify the best strategies for implementing EBP.

▪ Provide organizational support to EBP is the crucial factor for successful implementation of EBP by allowing nurses time to learn skills related to EBP and set the EBP among its priorities.

▪ Creating a research unit as library in hospital to save time for research and disseminate the updated research findings that support the evidence.

▪ Translating the most relevant researches and distributed them for nurses to apply in practice to overcome the English language barrier.

▪ Nursing staff depend more on organizational written protocols, policies and procedures so that it is recommended that those policies should be evidence based and should be updated whenever new evidences arise.

▪ Increasing interest in the research and EBP process through integrating the EBP strategies in nursing curriculum.

Future studies should be conducted to:

▪ Further researches are needed to assess the organizational contexts for EBP implementation and gain some insights about the organizational readiness for EBP.

▪ Additional research is needed to examine the effects of EBP educational intervention on nurses' ability to implement EBP.

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Conflict of interest

No

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