

Barriers to implementing nursing evidence-based practice at the Palestinian Medical Complex: A cross-sectional study

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ABSTRACT

Background: The use of nursing evidence-based practice (EBP) has grown more and more important for healthcare professionals globally in their goal of delivering high-quality patient care. **Objective:** The aim of this study is to assess barriers to implementing EBP among Palestinian nurses at the Palestinian Medical Complex (PMC). **Methods:** The study was carried out at the PMC over the course of a month and employed a cross-sectional descriptive approach. Data were gathered from 100 nurses who satisfied the inclusion criteria by using convenient sampling. Barriers to the application of EBP were measured by the BARRIER Scale. **Results:** Participants identified key barriers such as inadequate time (62%, $M \pm SD$: 3.34 ± 1.066) and lack of assistance (30%, $M \pm SD$: 3.15 ± 1.029). Concerns included literature dispersion (45%, $M \pm SD$: 3.23 ± 0.973), inadequate facilities (53%, $M \pm SD$: 3.70 ± 1.010), and methodological issues (52%, $M \pm SD$: 3.16 ± 1.012). In addition, 57% felt that research is published too slowly ($M \pm SD$: 3.39 ± 0.898), 33% noted unjustified conclusions ($M \pm SD$: 3.01 ± 0.882), and 35% highlighted a lack of replication ($M \pm SD$: 3.07 ± 0.879). **Conclusion:** This study found that head nurses and men perceived more significant barriers to research quality, while individuals with baccalaureate degrees reported fewer barriers. There was an association between perceived barriers and age and work experience, indicating age as a positive predictor of barriers related to research quality.

Keywords: Barriers, EBP, nursing, Palestinian, primary care

Introduction

Evidence-based practice (EBP) is essential for enhancing the quality of healthcare and improving patient outcomes. EBP integrates three main components: the most recent and best available evidence; the clinician's expertise and analysis; and the values, preferences, views, and expectations of the patient.^[1] The implementation of EBP is shaped by the quality and availability of existing evidence, the clinical expertise of healthcare practitioners, and the preferences and expectations of patients.^[2]

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Today's nurses must be able to develop treatment plans and conduct clinical activities by using the best available evidence to give independent and/or direct care. Not doing so has led to inconsistent and insufficient care, with over 20% of care activities being unneeded or even harmful, and up to 40% of patients not receiving evidence-based therapies.^[3] The results of Sweden's National Board of Health and Welfare, which revealed that 8.6% of hospital patients had injuries as a result of using inappropriate research and techniques, serve as evidence for this.^[4] It is critical for nurses to combine clinical knowledge and patient preferences with nursing EBP to guarantee that decisions about patient care are founded on the most recent, reliable, and relevant evidence. In addition to organizational support, multidisciplinary cooperation, and the nurse's personal knowledge and abilities in critically evaluating evidence, this calls

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for the availability and accessibility of recent, pertinent research. While databases and tools such as PubMed, CINAHL, and the Cochrane Library have made information easier to obtain, nurses still need to be able to critically analyze the evidence.^[5,6] Nonetheless, significant obstacles must be overcome for low- and middle-income countries (LMICs) to achieve EBP. Research has indicated that healthcare professionals in LMICs struggle to find and retrieve information and employ outdated resources less effectively. However, even in LMICs, the idea of EBP is still applicable.^[6,7] Thus, a detailed grasp of the barriers and facilitators to implementation, together with a continuous evaluation of the implementation process, is crucial to increase the possibility that the change will be adaptable and economical.^[8]

This study aims to assess the barriers to implementing EBP among Palestinian nurses at the Palestinian Medical Complex (PMC).

Methods

Study design and participants

A cross-sectional descriptive design was used. The study was conducted at the PMC, a prominent government hospital in Palestine. The study spanned from December 20, 2020 to January 18, 2021.

Sampling method

Population: PMC (n = 300)

Sampling technique: Convenient sampling was used. Utilizing the Raosoft Sample Size Calculator (Raosoft, n.d.), with a margin of error set at 5%, a confidence level of 95%, a population size of 300, and a response distribution assumption of 50%, the recommended sample size was 169. However, due to a 60% response rate among nurses at the PMC, the final sample size for the study was 100 nurses.

Inclusion criteria

1. Participants eligible for inclusion were both male and female nurses, along with head nurses
2. Age of the participant greater than 25 years
3. Participants having an experience of more than 2 years
4. Participants holding either a bachelor's, high diploma, or master's degree.

Exclusion criteria

1. Nursing supervisors, directors, and practical nurses
2. Participants under 25 years old
3. Participants holding less than a bachelor's degree
4. Nurses with less than 1 year of experience.

Data collection instruments

The data were collected through a Google Forms questionnaire consisting of five parts:

1. Demographic data: age, gender, university degree, role, and years of experience.
2. Organizational barriers (8 items)
3. Individual barriers (8 items)
4. Communicational barriers (6 items)
5. Research quality barriers (6 items).

Internal reliability was established with Cronbach's alpha of 0.833, 0.797, 0.693, and 0.625, respectively, for the four subscales, while the BARRIERS scale as a total was 0.833.

Measures

The BARRIERS scale was used. It consists of 28 items (organizational barriers: 8 items, individual barriers: 8 items, communicational barriers: 6 items, and research quality barriers: 6 items). It has been validated in various settings to assess barriers to research utilization and implementation of EBP. Mohammadi *et al.* developed the BARRIERS scale to assess clinicians', administrators', and academicians' perceptions of barriers to the use of research findings in practice^[9] by using the 5-point Likert scale (1–5): strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5).

Ethical considerations

The participants signed informed consent forms. Participation was of a voluntary nature. Every participant was free to leave at any moment. The data was kept anonymous and confidential as it would be coded without using any personal information.

Data analysis

SPSS version 20 was used to enter and evaluate the data. Descriptive statistics and Fisher's exact statistical test are performed. A p-value lower than 0.05 was considered significant. Results were analyzed using IBM SPSS Statistics Version 26 (IBM Corp., Armonk, NY, USA) predictive analytics software¹⁵. Data was expressed as means \pm SD continuous variables and as frequencies (percentages) for categorical variables. Variables not normally distributed were expressed as medians (lower-upper quartiles). Variables were tested for normality using Kolmogorov-Smirnov test. The chi-square test was used to test the significance between categorical variables. The Kruskal-Wallis test, followed by the Mann-Whitney test, was used to test for differences in the means between categories.

Results

Characteristics of participants

Characteristics of study participants are summarized in Table 1.

Responses of Palestinian Medical Complex nurses to the BARRIERS scale of evidence-based practice

Table 2 provides descriptive statistics on different types of barriers to EBP implementation. Organizational barriers had a mean (M) of 3.252 ± 0.675 (SD).

Table 1: Demographics data (n=100)

| Variable | Frequency (n) | Percentage (%) | |
|-----------------------------|---------------|----------------|------|
| Age category (years) | 25–29 | 40 | 40.0 |
| | 30–34 | 32 | 32.0 |
| | 35–39 | 17 | 17.0 |
| | 40–44 | 5 | 5.0 |
| | 45–49 | 3 | 3.0 |
| | 50–54 | 3 | 3.0 |
| Gender | Male | 51 | 51.0 |
| | Female | 49 | 49.0 |
| Role | Staff nurse | 89 | 89.0 |
| | Head nurse | 11 | 11.0 |
| University Degree | Baccalaureate | 72 | 72.0 |
| | High Diploma | 16 | 16.0 |
| | Master | 12 | 12.0 |
| Experience years categories | 2–7 | 57 | 57.0 |
| | 8–13 | 24 | 24.0 |
| | 14–19 | 12 | 12.0 |
| | 20–25 | 7 | 7.0 |

Among participants, 46% were not sure about organizational barriers, while 32% disagreed, and 20% agreed. For individual barriers, the mean was 2.719 ± 0.673 (SD). A majority of participants (61%) disagreed with individual barriers, 28% agreed, and 3% were not sure. In communicational analysis barriers, the mean was 2.810 ± 0.635 (SD). Half of the participants (50%) disagreed with communicational analysis barriers, 39% agreed, and 5% were not sure. Regarding research quality barriers, the mean was 3.042 ± 0.544 (SD); 54% of participants were not sure about research quality barriers, 40% disagreed, and 4% agreed.

Types of barriers among nurses at the Palestinian Medical Complex

Upon delving into a thorough analysis of each subscale, a comprehensive overview emerged, offering insights into participants' responses concerning the impediments to implementing EBP. In terms of organizational barriers, the analysis revealed significant insights.

A substantial 62 participants (62.0%) acknowledged the challenge, expressing agreement with the barrier of insufficient time on the job to implement new ideas ($M \pm SD: 3.34 \pm 1.066$). A notable 32% of participants were uncertain about whether the administration would allow implementation ($M \pm SD: 3.15 \pm 1.029$), while 30% expressed agreement with this potential barrier. Regarding the cooperation of physicians with implementation ($M \pm SD: 3.12 \pm 0.879$), 34% of participants were unsure, and 33% affirmed the concern that physicians might not cooperate. A majority (54%) of participants indicated that they did not feel they had the authority to change patient care procedures ($M \pm SD: 3.34 \pm 0.956$). A significant portion (42%) of participants reported not having enough time to read research ($M \pm SD: 3.07 \pm 1.130$). The barrier related to inadequate facilities ($M \pm SD: 3.70 \pm 1.010$) garnered a high response, with 53 participants (53%) identifying this as a significant challenge. A substantial portion (45%) of participants

believed that there was insufficient support from other staff for EBP implementation ($M \pm SD: 3.32 \pm 0.931$). Furthermore, 35% of PMC nurses expressed agreement with a barrier as the results are not generalizable to their own setting ($M \pm SD: 2.98 \pm 0.921$).

In terms of individual barriers, the analysis revealed the following key observations:

A significant majority (49 participants, 49%) did not accept the notion that nurses do not feel capable of evaluating the quality of the research ($M \pm SD: 2.73 \pm 0.962$). Regarding the perception that nurses see little benefit for themselves ($M \pm SD: 2.50 \pm 1.030$), 60% of participants expressed disagreement with this notion. A notable 39% of participants disagreed with the idea that nurses are unwilling to change or try new ideas ($M \pm SD: 3.01 \pm 1.193$). A significant 41% of participants disagreed with the notion that there is no documented need to change practice ($M \pm SD: 2.85 \pm 1.029$). A considerable 42% of participants disagreed with the idea that nurses feel the benefit of changing practice will be minimal ($M \pm SD: 2.43 \pm 1.174$). A substantial 45% of participants disagreed with the notion that nurses are isolated from knowledgeable colleagues with whom to discuss research ($M \pm SD: 2.85 \pm 1.029$). Regarding the nurses' awareness of EBP ($M \pm SD: 2.80 \pm 0.943$), a significant 37% disagreed with this barrier. The majority (53%) of participants disagreed with the idea that nurses do not see the value of EBP ($M \pm SD: 2.58 \pm 0.987$).

In the context of communicational analysis barriers, the following key observations emerged: Regarding the barrier that statistical analysis is not understandable ($M \pm SD: 2.95 \pm 0.957$), the majority (37%) of participants disagreed with this issue. Participants expressed concern about the relevant literature not being compiled in one place ($M \pm SD: 3.23 \pm 0.973$), with the majority (45%) agreeing with this barrier. A significant majority (45%) of participants disagreed with the barrier stating that research reports/articles are not readily available ($M \pm SD: 2.94 \pm 0.983$). Regarding the perceived relevance of research to the nurse's practice ($M \pm SD: 2.38 \pm 1.126$), the majority of participants did not agree with this barrier. Participants disagreed with the notion that implications for practice are not made clear ($M \pm SD: 2.65 \pm 0.957$), with a substantial 50% expressing disagreement. The majority (44%) of participants disagreed with the notion that the research is not reported clearly and readably ($M \pm SD: 2.71 \pm 1.057$). In the domain of research quality barriers, the following noteworthy observations were apparent: Participants expressed concern about methodological inadequacies in research ($M \pm SD: 3.16 \pm 1.012$), with the majority (52%) agreeing with this barrier. A substantial 57% of participants agreed with the barrier that research reports/articles are not published fast enough ($M \pm SD: 3.39 \pm 0.898$). Regarding the justification of conclusions drawn from research ($M \pm SD: 3.01 \pm 0.882$), 33% of participants agreed that these conclusions are not justified. A significant 44% of participants disagreed with the notion that nurses are uncertain whether to believe the results of the research

Table 2: Descriptive statistics: Participants responses to the barriers to evidence-based practice implementation

| Type of barriers | Mean & St. Deviation | | Likert's Scale | | | | | | | | | |
|----------------------------------------------------------------------------------------|----------------------|-------|----------------|------|----|------|----|------|----|------|----|------|
| | M | SD | 1 | | 2 | | 3 | | 4 | | 5 | |
| | | | n | % | n | % | n | % | n | % | n | % |
| Organizational Barriers | | | | | | | | | | | | |
| Sum of Organizational | 3.252 | 0.675 | | | | | | | | | | |
| There is insufficient time on the job to implement new ideas. | 3.34 | 1.066 | 5 | 5.0 | 26 | 26.0 | 3 | 3.0 | 62 | 62.0 | 4 | 4.0 |
| Administration will not allow implementation. | 3.15 | 1.029 | 4 | 4.0 | 25 | 25.0 | 32 | 32.0 | 30 | 30.0 | 9 | 9.0 |
| Physicians will not cooperate with implementation. | 3.12 | 0.879 | 0 | 0.0 | 29 | 29.0 | 34 | 34.0 | 33 | 33.0 | 4 | 4.0 |
| The nurse does not feel she/he has enough authority to change patient care procedure. | 3.34 | 0.956 | 2 | 2.0 | 24 | 24.0 | 16 | 16.0 | 54 | 54.0 | 4 | 4.0 |
| The nurses do not have time to read research. | 3.07 | 1.130 | 7 | 7.0 | 33 | 33.0 | 12 | 12.0 | 42 | 42.0 | 6 | 6.0 |
| The facilities are inadequate for implementation. | 3.70 | 1.010 | 0 | 0.0 | 21 | 21.0 | 7 | 7.0 | 53 | 53.0 | 19 | 19.0 |
| Other staff are not supportive of implementation. | 3.32 | 0.931 | 1 | 1.0 | 23 | 23.0 | 25 | 25.0 | 45 | 45.0 | 6 | 6.0 |
| The nurse feels results are not generalizable to their own setting. | 2.98 | 0.921 | 3 | 3.0 | 33 | 33.0 | 28 | 28.0 | 35 | 35.0 | 1 | 1.0 |
| Individual Barriers | | | | | | | | | | | | |
| Sum of Individual | 2.719 | 0.673 | | | | | | | | | | |
| The nurse does not feel capable of evaluating the quality of the research | 2.73 | 0.962 | 4 | 4.0 | 49 | 49.0 | 19 | 19.0 | 26 | 26.0 | 2 | 2.0 |
| The nurse sees little benefit for self. | 2.50 | 1.030 | 9 | 9.0 | 60 | 60.0 | 6 | 6.0 | 22 | 22.0 | 3 | 3.0 |
| The nurse is unwilling to change/try new ideas. | 3.01 | 1.193 | 6 | 6.0 | 39 | 39.0 | 16 | 16.0 | 26 | 26.0 | 13 | 13.0 |
| There is no documented need to change practice. | 2.85 | 1.029 | 5 | 5.0 | 41 | 41.0 | 23 | 23.0 | 26 | 26.0 | 5 | 5.0 |
| The nurse feels the benefit of changing practice will be minimal. | 2.43 | 1.174 | 22 | 22.0 | 42 | 42.0 | 12 | 12.0 | 19 | 19.0 | 5 | 5.0 |
| The nurse is isolated from knowledgeable colleagues with whom to discuss the research. | 2.85 | 1.029 | 4 | 4.0 | 45 | 45.0 | 17 | 17.0 | 30 | 30.0 | 4 | 4.0 |
| The nurse is unaware of the EBP | 2.80 | 0.943 | 5 | 5.0 | 37 | 37.0 | 35 | 35.0 | 19 | 19.0 | 4 | 4.0 |
| The nurse does not see the value of EBP. | 2.58 | 0.987 | 7 | 7.0 | 53 | 53.0 | 19 | 19.0 | 17 | 17.0 | 4 | 4.0 |
| Communicational Analysis Barriers | | | | | | | | | | | | |
| Sum of Communicational analysis | 2.810 | 0.635 | | | | | | | | | | |
| Statistical analysis is not understandable. | 2.95 | 0.957 | 3 | 3.0 | 37 | 37.0 | 24 | 24.0 | 34 | 34.0 | 2 | 2.0 |
| The relevant literature is not compiled in one place. | 3.23 | 0.973 | 1 | 1.0 | 30 | 30.0 | 19 | 19.0 | 45 | 45.0 | 5 | 5.0 |
| Research reports/articles are not readily available. | 2.94 | 0.983 | 1 | 1.0 | 45 | 45.0 | 16 | 16.0 | 35 | 35.0 | 3 | 3.0 |
| The research is not relevant to the nurse's practice. | 2.38 | 1.126 | 23 | 23.0 | 42 | 42.0 | 11 | 11.0 | 22 | 22.0 | 2 | 2.0 |
| Implications for practice are not made clear. | 2.65 | 0.957 | 6 | 6.0 | 50 | 50.0 | 18 | 18.0 | 25 | 25.0 | 1 | 1.0 |
| The research is not reported clearly and readably. | 2.71 | 1.057 | 9 | 9.0 | 44 | 44.0 | 17 | 17.0 | 27 | 27.0 | 3 | 3.0 |
| Research Quality Barriers | | | | | | | | | | | | |
| Sum of Research quality | 3.042 | 0.544 | | | | | | | | | | |
| The research has methodological inadequacies. | 3.16 | 1.012 | 2 | 2.0 | 36 | 36.0 | 8 | 8.0 | 52 | 52.0 | 2 | 2.0 |
| Research reports/articles are not published fast enough. | 3.39 | 0.898 | 1 | 1.0 | 22 | 22.0 | 17 | 17.0 | 57 | 57.0 | 3 | 3.0 |
| The conclusions drawn from the research are not justified. | 3.01 | 0.882 | 3 | 3.0 | 28 | 28.0 | 35 | 35.0 | 33 | 33.0 | 1 | 1.0 |
| The nurse is uncertain whether to believe the results of the research. | 2.68 | 1.024 | 9 | 9.0 | 44 | 44.0 | 19 | 19.0 | 26 | 26.0 | 2 | 2.0 |
| The research has not been replicated. | 3.07 | 0.879 | 1 | 1.0 | 30 | 30.0 | 32 | 32.0 | 35 | 35.0 | 2 | 2.0 |
| The literature reports conflicting results. | 2.940 | 0.814 | 2 | 2.0 | 29 | 29.0 | 43 | 43.0 | 25 | 25.0 | 1 | 1.0 |

M mean, SD standard deviation, N frequency, % percentage, 1 strongly disagree, 2 disagree, 3 not sure, 4 agree, 5 strongly agree

(M ± SD: 2.68 ± 1.024). Concerns about the lack of replication in research were expressed, with 35% of participants agreeing with this barrier (M ± SD: 3.07 ± 0.879). Participants exhibited uncertainty about literature reports containing conflicting results (M ± SD: 2.940 ± 0.814), with 43% expressing uncertainty on this matter [Table 2].

Demographic variations in perceiving barriers to EBP implementation

Gender- and role-based variations

Table 3 presents the results of t-tests comparing means for different types of barriers among different gender groups (male and female) and nurse roles (staff nurse and head nurse). The difference in mean scores for organizational barriers between males (M ± SD: 3.375 ± 0.689) and females (M ± SD:

3.125 ± 0.641) was marginally significant at the level of P value < 0.05 (P = 0.064). The difference in mean scores for individual barriers between males (M ± SD: 2.764 ± 0.795) and females (M ± SD: 2.670 ± 0.489) was not significant at the level of P value < 0.05 (P = 0.489). The difference in mean scores for communicational barriers between males (M ± SD: 2.823 ± 0.712) and females (M ± SD: 2.795 ± 0.829) was not significant at the level of P value < 0.05 (P = 0.829). The difference in mean scores for research quality barriers between males (M ± SD: 3.166 ± 0.551) and females (M ± SD: 2.911 ± 0.508) was significant at the level of P value < 0.05 (P = 0.018).

The difference in mean scores for organizational barriers between staff nurse (M ± SD: 3.257 ± 0.636) and head nurse (M ± SD: 3.125 ± 0.641) was not significant at the level

of P value < 0.05 ($P = 0.850$). The difference in mean scores for individual barriers between staff nurse ($M \pm SD: 2.693 \pm 0.615$) and head nurse ($M \pm SD: 2.920 \pm 1.047$) was not significant at the level of P value < 0.05 ($P = 0.294$). The difference in mean scores for communicational barriers between staff nurse ($M \pm SD: 2.790 \pm 0.605$) and head nurse ($M \pm SD: 2.969 \pm 0.852$) was not significant at the level of P value < 0.05 ($P = 0.379$). The difference in mean scores for research quality barriers between staff nurse ($M \pm SD: 2.992 \pm 0.514$) and head nurse ($M \pm SD: 3.439 \pm 0.629$) was significant at the level of P value < 0.05 ($P = 0.009$).

University degree-based variations

Table 4 presents the results of an analysis of variations in perceived barriers to EBP implementation based on different levels of university degrees. For organizational barriers, there was no statistically significant difference among participants at the level of P value < 0.05 ($P = 0.118$) with different university degrees. For individual barriers, there was a statistically significant difference among participants with different university degrees ($P = 0.000$). Specifically, those with a Baccalaureate degree perceived lower barriers compared to those with a High Diploma

or Master’s degree. For communicational barriers, there was no statistically significant difference with different university degrees ($P = 0.108$). For research quality barriers, there was a statistically significant difference among individuals with different university degrees ($P = 0.022$). Specifically, those with a Baccalaureate degree perceived lower barriers compared to those with a Master’s degree. Multiple comparisons between the significant differences are shown in Table 5.

Age and work experience-based variations

The correlation analysis revealed significant relationships between age, work experience, and perceived barriers to EBP implementation. In particular, age was positively correlated with research quality barriers at the level of P value < 0.01 ($r = 0.261$, $P = 0.009$), indicating that as age increases, so does the perception of barriers in this domain. Work experience also showed a positive correlation with individual and research quality barriers at the level of P value < 0.05 ($r = 0.214$, $P = 0.032$) [Table 6].

The regression analysis further confirmed the impact of age and work experience on research quality barriers. Age significantly predicted higher research quality barriers (Beta = 0.753, $P = 0.038$), while work experience showed a negative trend (Beta = -0.510, $P = 0.157$). The overall model was statistically significant ($P = 0.012$), suggesting that age and work experience collectively contribute to explaining the variance in perceived research quality barriers among participants [Table 6].

Table 3: Gender- and role-based variations in perceived barriers to evidence-based practice (EBP) implementation

| Type of barriers | Group Statistics | | | t-test for Equality of Means | |
|---------------------------|------------------|----------------|-----------------|------------------------------|----------------|
| | Gender | M ^a | SD ^b | t | P ^c |
| Organizational barriers | Male | 3.375 | 0.689 | 1.876 | 0.064 |
| | Female | 3.125 | 0.641 | | |
| Individual barriers | Male | 2.764 | 0.795 | 0.695 | 0.489 |
| | Female | 2.670 | 0.518 | | |
| Communicational barriers | Male | 2.823 | 0.712 | 0.216 | 0.829 |
| | Female | 2.795 | 0.548 | | |
| Research quality barriers | Male | 3.166 | 0.551 | 2.402 | 0.018 |
| | Female | 2.911 | 0.508 | | |
| Type of barriers | Role | M | SD | t | P ^c |
| Organizational barriers | Staff nurse | 3.257 | 0.636 | 0.190 | 0.850 |
| | Head nurse | 3.215 | 0.970 | | |
| Individual barriers | Staff nurse | 2.693 | 0.615 | -1.054 | 0.294 |
| | Head nurse | 2.920 | 1.047 | | |
| Communicational barriers | Staff nurse | 2.790 | 0.605 | -0.883 | 0.379 |
| | Head nurse | 2.969 | 0.852 | | |
| Research quality barriers | Staff nurse | 2.992 | 0.514 | -2.650 | 0.009 |
| | Head nurse | 3.439 | 0.629 | | |

^aMean, ^bStandard deviation, independent samples t-test

Discussion

The findings of this study highlight significant barriers to the implementation of EBP among nurses at the PMC. The results of this study contribute to the broader knowledge base as they emphasize the significance of organizational support, adequate resources, and efficient diffusion of research findings. This enlightenment is imperative for primary care physicians as it has underpinned the interconnected nature of multidisciplinary teams in the implementation of EBP. The key function of primary care physicians in engendering a supportive ecosystem for nurses is pivotal. By promoting policies that enhance accessibility to contemporary research, providing the necessary infrastructure, and expediting the availability of resources, primary care physicians can help mitigate the identified barriers. The most prominent barriers identified were inadequate facilities (53%), lack of rapid publication of research (57%), and methodological inadequacies in research (52%).

Table 4: University degree variations to the barriers of EBP implementation

| Type of barriers | Mean statistics | | | | | | P ^c |
|----------------------------------------------|-----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|
| | Baccalaureate | | High Diploma | | Master | | |
| | M ^a | SD ^b | M ^a | SD ^b | M ^a | SD ^b | |
| Organizational * University degree | 3.303 | 0.651 | 3.304 | 0.549 | 2.875 | 0.877 | 0.118 |
| Individual * University degree | 2.538 | 0.575 | 3.046 | 0.615 | 3.364 | 0.769 | 0.000 |
| Communicational analysis * University degree | 2.750 | 0.607 | 2.812 | 0.643 | 3.166 | 0.721 | 0.108 |
| Research quality* University degree | 2.949 | 0.487 | 3.302 | 0.476 | 3.250 | 0.783 | 0.022 |

^aMean, ^bStandard deviation, ^cAnalysis of variance (ANOVA)

The demographic profile of nurses at the PMC reveals a diverse workforce that is primarily young, with the majority of staff nurses having bachelor's degrees. The comprehensive examination of participants' responses on the BARRIERS scale provides complex perspectives on the difficulties that nurses at the PMC encounter.

Concerns regarding physician participation, lack of administrative assistance, and time constraints were identified as major organizational barriers. Individual obstacles that reveal personal variables impacting the adoption of EBP include the belief that the advantages are modest and resistance to change. Communication breakdowns brought to light problems with study report accessibility and clarity. Research quality hurdles emphasize the significance of research quality in influencing practice. These barriers include worries about methodological deficiencies and slower publishing. These barriers are congruent with the results of previous studies^[3,4,10-13] about lack of time, managerial support,

and training services,^[14] difficulty understanding statistical terms, and incapacity to evaluate research quality. There is a congruency with^[15-17] in their results about irrelevant research to the nurse's practice. The main barriers to research utilization in practice for nurses are nurses themselves, the setting in the hospitals, and research in its process and findings.^[18]

We investigated how different roles and genders perceive obstacles to the use of EBP. Organizational and research quality obstacles showed clear disparities, while individual and communicational barriers did not differ significantly. The perception of fewer organizational barriers was more prevalent among female participants, which may indicate that gender dynamics have a role in administrative collaboration and support. In comparison to staff nurses, head nurses demonstrated greater hurdles to research quality, highlighting the role-specific difficulties in assessing and applying EBP. The difference according to the results of a previous study^[19] in comparison to staff nurses, nurse leaders had higher scores per item for the barriers to changing practice and finding and reviewing evidence subsections, with lower scores for the facilitators to changing practice section. It could be congruent with the findings of a study that recommended that nurse administrators need to reduce anticipated obstacles strengthen facilitators and work to create an infrastructure based on vision, budgeting, policy-making, top-notch staff, and facilities inside the organization throughout the early stages of introducing and establishing EBP.^[20]

Significant differences in obstacles to individual and research quality were found in the analysis based on university degrees. Those who held a Baccalaureate degree reported fewer obstacles than those who held a High Diploma or a Master's degree, as shown in a previous study.^[21] These results underscore the need for specific interventions based on educational qualifications by highlighting the impact of educational backgrounds on particular characteristics of perceived barriers to EBP implementation.^[22,23]

The results emphasized how age and job experience are predicting factors. In particular, a significant correlation was found between increasing age and perceived barriers to research quality, indicating that older nurses would have more difficulties in this domain. On the contrary, there was a negative trend in work experience, suggesting that more experience might make nurses less sensitive to particular restrictions. "There was similarity with some findings of a Chinese study^[24] that showed that longer working experience might facilitate EBP.

Table 5: Comparisons between university degree variations to the barriers of EBP implementation

| Dependent Variable | (I) University Degree | (J) University Degree | P ^a |
|---------------------------|-----------------------|-----------------------|----------------|
| Organizational barriers | Baccalaureate | High Diploma | 0.996 |
| | | Master | 0.042 |
| | High Diploma | Baccalaureate | 0.996 |
| | | Master | 0.095 |
| | Master | Baccalaureate | 0.042 |
| | | High Diploma | 0.095 |
| Individual barriers | Baccalaureate | High Diploma | 0.003 |
| | | Master | 0.000 |
| | High Diploma | Baccalaureate | 0.003 |
| | | Master | 0.174 |
| | Master | Baccalaureate | 0.000 |
| | | High Diploma | 0.174 |
| Communicational barriers | Baccalaureate | High Diploma | 0.719 |
| | | Master | 0.036 |
| | High Diploma | Baccalaureate | 0.719 |
| | | Master | 0.142 |
| | Master | Baccalaureate | 0.036 |
| | | High Diploma | 0.142 |
| Research quality barriers | Baccalaureate | High Diploma | 0.017 |
| | | Master | 0.071 |
| | High Diploma | Baccalaureate | 0.017 |
| | | Master | 0.797 |
| | Master | Baccalaureate | 0.071 |
| | | High Diploma | 0.797 |

^aAnalysis of variance/multiple comparisons LSD

Table 6: Correlation analysis between age, work experience, and the barriers to EBP implementation

| variable | Correlation Analysis | Organizational barriers | Individual barriers | Communicational barriers | Research quality barriers |
|-----------------|----------------------|-------------------------|---------------------|--------------------------|---------------------------|
| Age | Pearson Correlation | -0.108 | 0.159 | 0.057 | 0.261** |
| | Sig. | 0.284 | 0.115 | 0.574 | 0.009 |
| Work experience | Pearson Correlation | -0.114 | 0.173 | 0.060 | 0.214* |
| | Sig. | 0.260 | 0.085 | 0.556 | 0.032 |

*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed)

In conclusion, the findings of this study have implications for primary care providers and family practitioners by providing a greater understanding of the specific barriers faced by nurses. Primary care providers can use the information to be more supportive in their work with fellow nurses to implement EBP, which has the potential to impact patient outcomes and potentially lead to increases in patient health. The distribution and implementation of these findings in practice would require a sustained effort that intentionally compensates for organizational, individual, and research quality barriers so that all healthcare providers are able to implement the evidence that is available to them.

Conclusion

This study found that head nurses and men perceived more significant barriers to research quality, while individuals with Baccalaureate degrees reported fewer barriers. In addition, associations were observed between perceived barriers and age and work experience, indicating a positive correlation between age and barriers related to research quality.

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Abbreviations

ANOVA: Analysis of Variance
df: degrees of freedom
Sig.: Significance
N: Frequency
PMC: Palestinian Medical Complex
EBP: Evidence-based practice
M: Mean
SD: Standard Deviation
r: Correlation.

Authors' contributions

This study is original research with the author serving as the corresponding author for all items of this study.

Availability of data and materials

The data used in this study is available from the corresponding author upon request.

Ethics approval

This study was approved by Palestinian Medical Complex IRP Committee (Ethics code: Ref: Nrs. December. 2020/17).

Consent for publication

By submitting this manuscript, author declare that the final accepted version of the work may be considered for publication.

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Conflicts of interest

There are no conflicts of interest.

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