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Factors Associated with Reduced Adoption of Evidence-Based Practice Among Nurses: an Analytical, Cross-Sectional Study

Muhammad Aslam

BSN, Government Teaching Hospital, Shahdrah, Lahore
Email: ranaaslam420420@gmail.com

Arslan Ashraf

BSN, Government Teaching Hospital, Shahdrah, Lahore
Email: arslanashrafkw123@gmail.com

Shakeela Bano

College of Nursing Teaching Hospital, Gujranwala
Email: ak7371150@gmail.com

Tahira Bibi

MSN, Nursing Instructor, College of Nursing, Government Teaching Hospital Shahdrah, Lahore
Email: tahira.rehmat@yahoo.com

Nazia Parveen

MSN, Nursing Instructor, College of Nursing, Government Teaching Hospital Shahdrah, Lahore
Email: nazianajam111@gmail.com

Umm-e-Shifa

BSN, University of Child Health Sciences, The Children's Hospital, Lahore
Email: ummeshifa393@gmail.com

Muhammad Naeem Nisar

BSN, Government Teaching Hospital Shahdrah, Lahore
Email: naeembinnisar786@gmail.com

Muhammad Shahbaz

BSN, Government Teaching Hospital Shahdrah, Lahore
Email: muhammadshahbaz504334@gmail.com

Muhammad Habib Ullah

BSN, Government Teaching Hospital Shahdrah, Lahore
Email: mhabibullahkhan630@gmail.com

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Corresponding Author:

Muhammad Naeem Nisar

Email: naeembinnisar786@gmail.com

ABSTRACT

Evidence-Based Practice (EBP) is a systematic approach to healthcare that integrates the best available research evidence with clinical expertise and patient values, yet its implementation continues to face multifaceted individual and organizational barriers. **Objectives:** This study aimed to identify individual and organizational barriers to EBP adoption among nurses and to determine whether these barriers are associated with nurses' demographic characteristics. **Methods:** An analytical, cross-sectional study was conducted at Government Teaching Hospital, Shahdrah, Lahore, and Sir Ganga Ram Hospital, Lahore. Data were collected from 276 nurses using systematic random sampling and a structured, pre-tested questionnaire. Data were analyzed in SPSS version 23 using descriptive statistics (frequencies, percentages, mean, standard deviation) and, to test for associations, the Chi-square test and Spearman's correlation. **Results:** The most reported barriers were inadequate education/training in research skills (83.0%), insufficient time to implement EBP (81.5%), high workload (80.1%), and lack of resources (77.9%). The Chi-square test showed no significant association between any demographic characteristic (designation, qualification, experience, department, hospital, or research certification) and overall individual or organizational barriers (all $p > .05$). Age also showed no significant correlation with barrier scores (Spearman's correlation, all $p > .05$). **Conclusion:** Barriers to EBP adoption were highly prevalent and consistently reported across the sample, regardless of nurses' demographic characteristics, suggesting these barriers are systemic rather than concentrated in particular groups of nurses. The findings support broad, organization-wide interventions to improve access to resources, EBP education, and organizational culture.

Introduction

Healthcare is a dynamic field, constantly evolving through groundbreaking research and innovative solutions that help clinicians address global health challenges and enhance healthcare delivery. Among the most essential hallmarks of modern healthcare quality is Evidence-Based Practice (EBP) (Speroni et al., 2020), which has become foundational to nursing education and is essential for closing the persistent theory-to-practice gap in the discipline (Kiviliene et al., 2023).

Evidence-based practice is defined as a process involving the examination and application of research findings integrated with scientific theories (Schmidt & Brown, 2024), combining clinical expertise, patient preferences and values, and the best available evidence to answer clinically meaningful questions (Alqahtani et al., 2022). EBP rests on three core components: recent best available evidence, the expertise and analysis of the clinician, and the values, preferences, and expectations of the patient (Cleary-Holdforth, 2020). It is recognized globally, including by the World Health Organization and the European Commission, as the gold standard for safe, effective, and compassionate healthcare, improving patient-centered care while reducing costs (Aslam et al., 2023; Kaseka & Mbakaya, 2022; Pitsillidou et al., 2021).

EBP is elementary to achieving the “quadruple aim” in healthcare – better quality and safety, improved patient outcomes, reduced costs, and empowered clinicians (Melnik & Fineout-Overholt, 2022). While EBP has been systematically and successfully embedded in advanced healthcare systems such as those of the U.S.A., U.K., and China (Lai et al., 2022; Pitsillidou et al., 2021; Speroni et al., 2020), aided by participatory management, advanced academic training, ample time, and supportive organizational readiness (Cleary-Holdforth et al., 2021; Kerr & Rainey, 2021; Melnik et al., 2021), its implementation remains inconsistent and challenging in countries such as Pakistan, Saudi Arabia, and Turkey (Alqahtani et al., 2022; Aslam et al., 2023; Dagne & Beshah, 2021; Karaahmetoğlu et al., 2022), despite broad nursing support for the concept in principle.

Reported barriers to EBP implementation span both individual and organizational domains. Individually, nurses frequently cite gaps in EBP knowledge and skills, traditions of practice (“that is the way it is done here”), negative attitudes toward research, and limited confidence (Crawford et al., 2023). Organizationally, the volume of professional literature, lack of time and resources to search and critically appraise evidence (Midilli et al., 2024), high workload, limited mentorship, resistance from colleagues and managers, and restricted autonomy to change practice have all been documented as significant constraints (Melnik & Fineout-Overholt, 2022; Naghibi et al., 2021). The level of available evidence, clinicians' experience, and patients' expectations further shape implementation (Alene et al., 2021). Cumulatively, these barriers have sustained a longstanding research-practice gap, compromising patient care and slowing clinical progress (Diery et al., 2020).

In Pakistan specifically, the healthcare system faces considerable challenges in translating research into nursing practice, and comparatively little empirical work has examined which individual and organizational factors are most responsible for this gap, or whether these barriers are more common among particular groups of nurses. Left unaddressed, this gap risks continued suboptimal patient care, higher healthcare costs, and preventable harm, since without a clear understanding of which barriers matter most – and for whom – efforts to promote EBP adoption may be poorly targeted and ultimately ineffective. This study therefore aimed to identify individual and organizational barriers to EBP adoption among nurses at two tertiary care hospitals in Lahore, and to determine whether these barriers are associated with nurses' demographic characteristics.

Objectives of the Study

- To identify the individual and organizational barriers faced by nurses in adoption of EBP.
- To determine the association between nurses' demographic characteristics and their reported barriers to EBP adoption.

Methodology

This study employed an analytical, cross-sectional design. It was conducted over six months, following synopsis approval, at two tertiary care hospitals in Lahore, Government Teaching Hospital, Shahdrah, and Sir Ganga Ram Hospital. A sample of 276 nurses was calculated using Slovin's formula at a 5% margin of error and allocated proportionately between the two hospitals (58 from Government Teaching Hospital, Shahdrah, and 218 from Sir Ganga Ram Hospital), using systematic random sampling. Eligible participants were female registered nurses and nurse managers aged 25–50 years, currently working in either hospital with more than one year of nursing experience, who provided informed consent. Licensed practitioner and assistant nurses, staff at private institutions, nurses with less than one year of experience, and male nurses were excluded; male nurses were excluded specifically because they constituted less than 1% of the eligible population.

Data were collected using a structured, pre-tested, self-administered questionnaire comprising two sections. Section I captured seven demographic variables including age, designation, professional qualification, general nursing experience, working department, research certification/participation, and hospital. Section II measured 20 perceived barriers to EBP adoption on a 5-point Likert scale (Strongly Disagree = 1 to Strongly Agree = 5), grouped into Individual Barriers (9 items) and Organizational Barriers (11 items), adapted by the research team (Alqahtani et al., 2022; Naghibi et al., 2021).

A total of 276 completed questionnaires were collected with a 100% response rate. Data were entered and analyzed in SPSS version 25. Descriptive statistics were used to summarize the sample: frequencies and percentages for categorical demographic variables, and mean with standard deviation for age. For the barrier items, responses were grouped into two simple categories i.e. Disagree (combining Strongly Disagree, Disagree, and Neutral) and Agree (combining Agree and Strongly Agree), and reported as frequencies and percentages.

To check for associations, two statistical tests were used. The Chi-square test was used to see if nurses' agreement with the barriers was linked to their demographic characteristics. Spearman's correlation was used to see if nurses' age was linked to their barrier scores. A result was considered statistically significant if $p < .05$.

Results

The sample comprised 276 nurses drawn from two tertiary care hospitals in Lahore. The mean age was 37.5 years (SD = 6.9, range 25–50). Most participants worked as Nursing Officers (68.1%), held a General Nursing Diploma (43.5%), had more than 10 years of general nursing experience (50.0%), and worked in the Emergency Ward (38.8%). The majority (75.7%) had no certificate or research participation, and 79.0% worked at Sir Ganga Ram Hospital (Table 1).

Table 2 presents how many nurses agreed or disagreed with each barrier statement. The three barriers most nurses agreed with were inadequate education/training in research skills (83.0%), limited understanding of research methods (79.7%), and difficulty in evaluating research findings (78.3%). Among organizational barriers, insufficient time to implement EBP (81.5%), high workload (80.1%), and lack of resources (77.9%) were the barriers most nurses agreed with.

Table 1. Demographic Characteristics of Participants

Variable	Category	n	%
Age (years)	Mean $\pm$ SD = 37.5 $\pm$ 6.9		
Designation	Nursing Officer	188	68.1
	Nursing Manager	88	31.9
Professional Qualification	General Nursing Diploma	120	43.5
	Post Basic Diploma	66	23.9
	Bachelor's Degree (BSN)	61	22.1
	Master's Degree (MSN)	21	7.6
	Other Diploma/Certificate	8	2.9
General Nursing Experience	1–3 years	20	7.2
	4–6 years	46	16.7
	7–10 years	72	26.1
	More than 10 years	138	50.0
Working Department	Emergency Ward	107	38.8
	Intensive Care Unit (ICU)	71	25.7
	General Ward	37	13.4
	Out-Patient Department (OPD)	31	11.2
	Other	30	10.9
Certificate/Participation in Research	Yes	67	24.3
	No	209	75.7
Hospital	Sir Ganga Ram Hospital, Lahore	218	79.0
	Government Teaching Hospital, Shahdrah, Lahore	58	21.0

Table 2. Nurses' Agreement with Individual and Organizational Barriers to EBP Adoption

Barrier Item	Agree n (%)	Mean	St. Deviation
Individual Barriers (9 items)			
Inadequate education/training in research skills	229 (83.0%)	4.11	0.90
Limited understanding of research methods	220 (79.7%)	4.07	0.91
Difficulty in evaluating research findings	216 (78.3%)	3.97	1.15
Lack of awareness of current research in area of practice	176 (63.8%)	3.64	1.31
Lack of motivation to change practice	165 (59.8%)	3.58	1.28
Lack of confidence in ability to implement EBP	173 (62.7%)	3.62	1.25
Limited experience with evidence-based practice	174 (63.0%)	3.60	1.23
Fear of change	164 (59.4%)	3.59	1.28
Personal beliefs and values conflicting with EBP	162 (58.7%)	3.47	1.32
Organizational Barriers (11 items)			
Physical environment constraints (space, equipment)	172 (62.3%)	3.59	1.19
Lack of authority to change practice	210 (76.1%)	3.98	1.16
Lack of access to libraries or databases	162 (58.7%)	3.47	1.32
Insufficient time to implement evidence-based practice	225 (81.5%)	3.99	1.11
Limited access to research findings	149 (54.0%)	3.43	1.28
Inadequate administrative support for EBP	202 (73.2%)	3.82	1.14
Resistance from colleagues to changing practice	148 (53.6%)	3.41	1.33
Lack of resources (staffing, equipment) to support EBP	215 (77.9%)	3.95	1.19
Insufficient support staff	183 (66.3%)	3.69	1.27
High workload	221 (80.1%)	4.08	0.99
Difficulty in accessing continuing education opportunities	151 (54.7%)	3.46	1.30

To test whether nurses' overall agreement with individual or organizational barriers was linked to their demographic characteristics, the Chi-square test was used. As shown in Table 3, no demographic characteristic was significantly associated with overall agreement on either individual or organizational barriers (all $p > .05$).

Table 3. Association Between Demographic Characteristics and Barriers, Chi-Square Test

Demographic Variable	Individual Barriers (p value)	Organizational Barriers (p-value)
Designation	0.915	0.215
Professional Qualification	0.504	0.909
General Nursing Experience	0.883	0.484
Working Department	0.383	0.846
Certificate/Research Participation	0.260	0.309
Hospital	0.845	0.845

Note. $p < .05$ would indicate a significant association. No significant association was found for any variable.

Spearman's correlation was used to check whether nurses' age was related to their barrier scores. As shown in Table 4, age was not significantly correlated with individual barriers, organizational barriers, or the overall barrier score (all $p > .05$).

Table 4. Correlation Between Age and Barrier Scores, Spearman's Correlation

Barrier Score	Correlation with Age (p-value)
Individual Barriers Score	0.591
Organizational Barriers Score	0.434
Overall Barriers Score	0.978

Discussion

The findings of the present study illustrate that the most prevailing barrier in adoption of evidence-based practice is inadequate education/training in research skills (83.0%), followed by limited understanding of research methods (79.7%) and difficulty in

evaluating research findings (78.3%). Consistent with a previous study (Alatawi et al., 2020), this study also found inadequate education/training in research to be the most prevailing barrier. The lack of a research-focused curriculum in nursing education and limited opportunities for research training and mentorship likely exacerbate this issue (Ransdell et al., 2021). The prevalence of this barrier highlights the need for targeted educational interventions capable of narrowing the knowledge-practice gap.

The present study also supports existing literature (Cleary-Holdforth et al., 2021) indicating that limited understanding of research methods is a substantial barrier. Nurses' limited grasp of research methodology, statistical analysis, and critical appraisal skills constrains their ability to evaluate and implement evidence-based interventions, emphasizing the value of informative workshops on research methodology for nursing staff.

Difficulty in evaluating research findings was reported by 78.3% of participants, notably higher than the 58.3% reported in a previous study (Dang et al., 2021). This may reflect this sample's more limited exposure to formal research training and critical appraisal instruction. Insufficient time to implement evidence-based practice was the most agreed organizational barrier (81.5%), corresponding with the findings of (Wafa'a et al., 2023). Allocating dedicated time away from direct patient care, reducing workload, increasing staffing, and providing time-management training are plausible strategies to address this constraint. Consistent with a previous study (Daniel et al., 2020), lack of resources (staffing, equipment) to support EBP (77.9%) was also a major reported obstacle, with implications for both clinical practice quality and nurses' motivation and self-efficacy. Lack of authority to change practice was similarly prominent (76.1%), aligning with (Hosseini-Moghaddam et al., 2023); this may stem from limited nurse empowerment and restricted involvement in organizational decision-making (Çankaya & Eriş, 2022; Cummings et al., 2021).

Beyond confirming these individually prevalent barriers, this study found no significant association between any demographic characteristic and nurses' overall agreement with individual or organizational barriers, and no significant correlation between age and barrier scores. In other words, these barriers were reported at similar levels by nurses regardless of their designation, qualification, experience, department, hospital, research certification, or age. This suggests that the barriers identified in this study are experienced broadly across the nursing workforce rather than being specific to any particular group of nurses.

This has a practical implication for how these barriers should be addressed, rather than targeting specific groups of nurses (for example, less experienced nurses or those without research certification), hospital administrators and nurse leaders should prioritize broad, organization-wide interventions – such as protected time for EBP activities, expanded access to research resources, and stronger administrative support – that reach the entire nursing workforce.

Conclusion

The study's findings highlight the existence of multifaceted barriers (individual as well as organizational) hindering the adoption of evidence-based practice (EBP) among nurses in two tertiary care hospitals of Lahore. The identified barriers were reported consistently across the sample and were not associated with nurses' age, designation, qualification, experience, working department, hospital, or research certification, indicating that they are systemic rather than concentrated in specific groups of nurses. The study's results emphasize the importance of addressing these barriers through targeted, organization-wide interventions including education and training programs, resource allocation, and structural organizational support. Ultimately, promoting EBP adoption among nurses has the potential to improve the quality of patient care, enhance patient outcomes, and reduce healthcare costs, and the study's findings provide valuable insights for healthcare administrators, nurse educators, and policymakers seeking to foster a culture of EBP in Pakistani healthcare settings.

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