



Original Article



Association and Demographic Differences in Individual and Organizational Factors Affecting Evidence-Based Practice among Nurses in Mirpur, AJK

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ABSTRACT

Evidence-based practice (EBP) is critical in improving patient care outcomes, enhancing nursing practice, and fostering informed decision-making in healthcare settings. **Objectives:** To examine the association between organizational and individual factors affecting the implementation of EBP and to assess demographic differences in these factors. **Methods:** This is a secondary analysis of data from a larger cross-sectional study on barriers to EBP implementation among nurses. A quantitative analytical study was conducted at a tertiary care hospital in Mirpur, AJK, among 120 registered nurses from various departments with more than one year of clinical experience, was selected by using simple random sampling techniques. The sample size was determined using the Yamane formula. A developed questionnaire assessing barriers to the implementation of EBP was adapted and modified for use in this study after ensuring reliability and validity. **Results:** Regression analysis showed a moderate positive association between organizational and individual barriers. Individual barriers were linked to educational attainment and work experience. No significant mean differences were found regarding age at the time of implementing EBP. **Conclusions:** The study found a significant positive association between organizational and individual barriers to EBP among nurses. To support EBP, policymakers and executives in the healthcare industry are encouraged to give priority to educational programs, expand access to resources, and strengthen organizational support.

INTRODUCTION

EBP with organisational support authorises nurses to practice, improving patient care [1]. Organizational and individual preparedness are integrated into EBP readiness. The capacity to access and understand it, the ability to recognise the need for it, and the presence of a supportive environment are examples of antecedents. To obtain evidence-based practice preparedness, one must have the four pillars of nursing, training, equipping, and leadership support [2]. Without support at the organizational level, including effective managerial leadership, it is hard to achieve the intended application of EBP. In addition, nurses at the direct care level experience low levels of power and

influence over organizational decisions, which only highlights the more urgent need for organizational support and action [3]. Nurses and other healthcare professionals now recognise the value and significance of EBP after years of training and development. However, many nurses do not now apply EBP consistently, or they are not dedicated to doing so [4]. One of the main goals of healthcare organisations is EBP, which is essential for delivering efficient healthcare services [5]. Although during the past year, nurse managers generally held a positive attitude toward evidence-based practice, their performance in putting the practice into operation has



been poor [6]. The nurse's perception of her lack of authority to change patient care processes was dependent upon her colleagues' rejection of EBP [7]. It was found that age, education level, experience, job position, and some organizational characteristics were significantly correlated to what nurses had experienced as being the most important barriers to the implementation of evidence-based practice [8]. This model is based on a questionnaire that Khammarnia utilized to measure the barriers to the implementation of EBP. The questionnaire is divided into two main sections: one that addresses organizational hurdles to the implementation of EBP, and the other that addresses individual barriers (Figure 1).

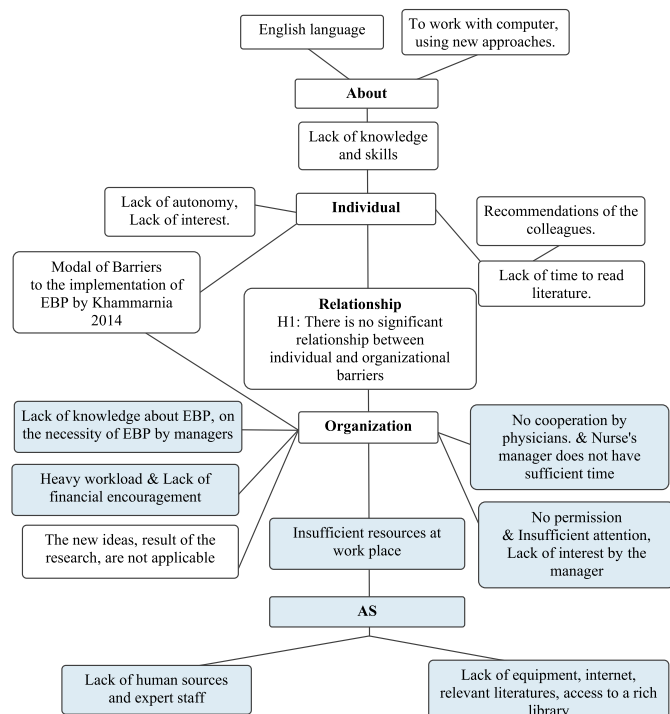


Figure 1: Theoretical Framework

By using this questionnaire, the researcher determined the relationship between organizational and individual barriers to the Implementation of EBP at tertiary care hospitals of AJK. Little research has been conducted in Azad Kashmir, Pakistan, to explore the association between organizational and individual barriers. Therefore, this study aimed to explore the association between organizational and individual barriers. The results of the study can support administrators, managers, and policy makers in planning for better use of EBP for nurses and other health care providers in hospitals.

METHODS

This is a secondary analysis of data from a larger cross-sectional study on barriers to EBP implementation among nurses. This study was conducted at Mohtarma Benazir Bhutto Shaheed College, Divisional Headquarters Teaching

Hospital in Mirpur, AJK. Data collection took place between February and April 2024. Before starting the data collection process, the study approval was obtained from the Institutional Review Board (05/ACEDEMICS TRAUMA CENTER/SURGERY/2024, dated 31 January 2024). Data was collected by the researcher herself. The selected hospital is a tertiary care hospital that consists of different departments, which need to apply for EBP. A sample was drawn from the targeted population. In this study, data were collected from a representative sample of 120 registered nurses (employees and post-RN students) selected through Simple Random Sampling using the lottery method. The inclusion criteria were all female regular employee nurses, registered by the Pakistan Nursing and Midwifery Council (PNMC), having more than one year of clinical experience in different departments of the selected hospital with an education level of BSN/Post RN, and general nursing (diploma nurses). Nurses who were on leave were excluded from the study. The target population comprised all registered nurses (N=171) working at the hospital. Of these, 120 completed the questionnaire, yielding a response rate of 70.2% (120/171). Non-responders were primarily nurses on leave during the data collection period. This yielded a required sample of 119.8, rounded to 120 participants. Informed consent was obtained from each participant. Participants were selected through simple random sampling using the lottery method from the list of eligible nurses. The study population included both hospital staff nurses and post-RN BSN students currently employed at the study hospital. This combined sampling was justified as both groups represent actively practicing registered nurses within the same clinical environment, sharing identical organizational structures, resources, and patient care responsibilities. Post-RN BSN students are practicing nurses who continue clinical duties while pursuing advanced education, sharing identical organizational structures and patient care responsibilities with staff nurses. To address potential heterogeneity, subgroup analyses were conducted, and educational status was controlled for in regression models. The present analysis specifically examines the relationship between organizational and individual barriers and their demographic correlates, which were not explored in the primary analysis. A 24-item validated questionnaire assessed EBP implementation barriers on a 5-point Likert scale (1=strongly disagree to 5=strongly agree), divided into organizational barriers (12 items) and individual barriers (12 items). Total scores ranged from 12-60, with higher scores indicating greater perceived barriers. Cronbach's alpha was 0.81 for the overall scale. Cronbach's alpha of the scale was 0.81, showing that the tool is reliable to use. Voluntary participation was ensured as participants had the freedom

to refuse or withdraw at any time without being penalized. Levene's test was used to assess homogeneity of variance for group comparisons, and normality within groups was examined using the Shapiro-Wilk test. All results are reported with 95% confidence intervals where applicable. Data were analyzed using SPSS version 24.0. Data normality was examined using the Shapiro-Wilk test, and it was found to be normal.

RESULTS

Out of 120 nurses, the maximum number of nurses (60%) is in the 22–32 age range, which suggests that the participants are mostly younger. The next largest age group is 33–43 (27.5%), followed by those 43 and over (12.5%). It was found that many participants (71.7%) have a background diploma in general nursing, whereas 28.3% have a degree of post-RN/BSN. This displays that those who participated in the study have a general nursing background in common. It was also found that the participants' work experience was diverse; the largest group comprised 36.7 per cent with 5–10 years of experience, followed by 26.7 per cent with 1–5 years, 18.3 per cent with 10–15 years, and 18.3 per cent with more than 15 years (Table 1).

Table 1: Maximum Number of Nurses in Age Range, Education Level, and Work Experience

Variables	Percentages
Age (Years)	
22 to 32	60%
33 to 43	27.5%
above 43	12.5%
Education Level	
General Nursing (diploma)	71.7%
Post RN/BSN (degree)	28.3%
Work Experience	
1–5 Years	26.7%
5–10 Years	36.7%
10–15 years	18.3%
>15.00 Years	18.3%

(*RN=Registered Nurse, BSN=Bachelor of Science in Nursing)

The regression analysis reveals a statistically significant, positive relationship between organizational and individual barriers to Evidence-Based Practice (EBP) implementation. Consequently, these findings reject the null hypothesis (H_0), stating no significant relationship exists between individual and organizational barriers (Table 2).

Table 2: Regression between Individual and Organizational Barriers (n=120)

Model	R	R Square	Adjusted R Square	Sig.
1	0.570 ^a	0.325	0.319	<0.001

The regression analysis reveals a statistically significant, positive relationship between organizational barriers and individual barriers to Evidence-Based Practice (EBP) implementation. For every unit increase in organizational barriers, individual barriers increase by 0.324 units. Organizational barriers explain approximately 57% of the variation in individual barriers, as evidenced by the standardized Beta value of 0.570. This relationship is highly significant ($t = 7.532$, $p < 0.001$). The findings suggest that addressing organizational barriers can help overcome individual barriers to Evidence-Based Practice (Table 3).

Table 3: Coefficients a

Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
Constant	13.814	2.489	–	5.549	<0.001
Barriers to the Implementation of EBP	0.324	0.043	0.570	7.532	<0.001

a. Dependent Variable: The barriers to implementing evidence-based practice related to individual aspects

Based on the significance level ($\alpha = 0.05$) and the ANOVA results, this study fails to reject the null hypothesis that age does not significantly influence perceived barriers to implementing EBP among registered nurses. Consequently, based on these findings, age is not a significant factor influencing perceived barriers to EBP implementation among the nurses who participated in this study (Table 4).

Table 4: ANOVA for Different Age Groups of Nurses (n=120)

Nurses Age Groups	Sum of squares	df	Mean Square	F	Sig.
Between Age Groups	135.797	2	67.898	2.616	0.001
Within Age Groups	3036.870	117	25.956	–	–

Level of Significance: 0.050

One-way ANOVA revealed a significant effect of job experience on individual barriers to EBP implementation ($F(3, 116) = 3.45$, $p = 0.019$, $\eta^2 = 0.082$), indicating a medium effect size. Tukey HSD post-hoc comparisons showed that nurses with more than 15 years of experience reported significantly higher individual barriers compared to those with 1–5 years (mean difference = 4.27, $p = 0.003$, 95% CI [1.49, 7.05]), 5–10 years (mean difference = 2.95, $p = 0.026$, 95% CI [0.33, 5.57]), and 10–15 years (mean difference = 3.09, $p = 0.044$, 95% CI [0.07, 6.11]). All other pairwise comparisons were not statistically significant. Job experience explained 8.2% of the variance in individual barriers. The mean barrier score for post-RN/BSN nurses (33.21 ± 6.66) was slightly higher than for diploma nurses (31.99 ± 4.44), but this difference was not statistically significant ($t(118) = 1.17$, $p = 0.244$, Cohen's $d = 0.22$), indicating educational level does not significantly influence perceived barriers in this setting ($t(118) = 1.17$, $p =$

0.244, 95% CI [-0.83, 3.27]), with a small effect size (Cohen's $d = 0.22$). These findings suggest that educational level does not significantly influence perceived barriers to EBP implementation among nurses in this setting (Table 5).

Table 5: Tukey HSD Post-hoc Comparisons for Individual Barriers by Job Experience Groups and T-test for Education Level Regarding the individual Barriers to the Implementation of EBP ($n=120$)

(I) Job Experience	(J) Job Experience	Mean Difference (I-J)	Std. Error	p-value	95% CI
1-5 Years	5-10 Years	1.31	1.17	0.263	-1.04 to 3.66
	10-15 Years	1.18	1.39	0.400	-1.61 to 3.97
	>15 Years	4.27*	1.39	0.003	1.49 to 7.05
5-10 Years	1-5 Years	-1.31	1.17	0.263	-3.66 to 1.04
	10-15 Years	-0.14	1.31	0.917	-2.77 to 2.49
	>15 Years	2.95*	1.31	0.026	0.33 to 5.57
10-15 Years	1-5 Years	-1.18	1.39	0.400	-3.97 to 1.61
	5-10 Years	0.14	1.31	0.917	-2.49 to 2.77
	>15 Years	3.09*	1.51	0.044	0.07 to 6.11
>15 Years	1-5 Years	-4.27*	1.39	0.003	-7.05 to -1.49
	5-10 Years	-2.95*	1.31	0.026	-5.57 to -0.33
	10-15 Years	-3.09*	1.51	0.044	-6.11 to -0.07
Education Level	Mean $\pm$ SD	Df, t-value	Cohen's d	P-value	95% CI
General Nursing ($n=86$)	31.99 $\pm$ 4.44	118, 1.17	0.22	0.244	0.83 to 3.27
Post RN/BSN ($n=34$)	33.21 $\pm$ 6.66				

The mean difference is significant at the 0.050 level

DISCUSSION

This study finding shows the strong evidence regarding the association of organizational and individual barriers to the implementation of EBP among registered nurses working in a tertiary care hospital of Mirpur AJK, because statistically it was found through regression analysis by examining the relationship between individual and organizational barriers to the implementation of EBP that shows notable insights, that if organizational barriers go up, then individual barriers go up too, and vice versa. The results showed that individual barriers were significantly related to work experience ($p=0.019$), but not to educational level ($p=0.244$), suggesting that clinical experience rather than formal education may be the more important factor in shaping perceptions of EBP barriers to the implementation of EBP within the studied population. The interplay between the individual and organizational barriers to the implementation of evidence-based practice by nurses is well documented. Several studies reveal that these barriers have a kind of connectedness to them and, as dimensions, most often have a collective effect on the implementation of EBP. For instance, Alatawi et al. categorized the barriers under individual factors that range from lack of professionalism, awareness, knowledge, skills, attitudes, and language skills to organizational factors

such as lack of support and supervision, limited opportunity for training and education, limited resources, and shortage of time [9]. A similar study in Pakistan conducted by Zeb and fellowshas found issues like time constraints, lack of access to materials regarding the research, and limitations in changing the care given to patients due to limited facilities [10]. Many studies have been conducted to measure the various barriers/facilitators of EBP in clinical settings. Most of them have similarities with this study, in which it was shown that without support at the organizational level, including effective managerial leadership, it is hard to achieve the intended application of EBP. In addition, nurses at the direct care level experience low levels of power and influence over organizational decisions, which only highlights the more urgent need for organizational support and action [11]. A concurrent quantitative and qualitative institution-based study was done in Ethiopia, and the results showed the similarity with this study that there were several barriers to EBP awareness and practice, including the availability of information sources, computer access, internet access, internet speed, administrative support, search strategy, and EBP training, as well as a lack of resources [12]. This study also aligns with Alqahtani et al. findings, revealing a similar relationship between nurses' education, work experience, and perceptions of EBP barriers [13]. Likewise, Mohamed and Mohamed reported a significant relationship linking the nurses' barriers to EBP implementation with their characteristics. As indicated, age, educational level, and attendance of EBP training sessions showed significant correlations with these barriers; however, years of experience did not have statistically significant differences [14]. This finding contradicts research by Alqahtani et al. which found no significant link between nurses' demographic characteristics and Evidence-Based Practice (EBP) [15]. The significant positive association between organizational and individual barriers ($\beta = 0.324$, $p<0.001$) indicates that these barriers are mutually reinforcing, suggesting that interventions targeting only individual-level factors without addressing organizational constraints may have limited effectiveness. Two unexpected findings merit explanation: the corrected analysis found no significant difference in perceived barriers between general nursing diploma holders and post-RN/BSN graduates ($p=0.244$), possibly because both groups work within the same organizational constraints—heavy workloads, time limitations, and insufficient resources—which may overshadow educational advantages. Similarly, age did not significantly influence perceived barriers ($p=0.077$), consistent with Alqahtani et al. who found no link between nurses' demographic characteristics and EBP [15]. Furthermore, some other studies, such as Li et al. confirm these observations by including a shortage of time

and resources among the major barriers to the translation of EBP knowledge and attitudes into practice, which also have similarities with the findings of this study [16]. Institution-based cross-sectional research of nurses employed in public hospitals in Ethiopia's West Shoa zone found that few of them used evidence-based practice (EBP). Having a high level of education, understanding EBP, having enough time to work, and having supportive and cooperative coworkers were all linked to effective EBP use. Hospital administration, as well as the healthcare system, must develop plans to enhance evidence-based nursing practice in the region [17]. The findings support healthcare systems having a culture that enables the implementation of EBP to help increase the EBP competencies of nurses to improve patient outcomes. This relationship underscores the incorporation of the educational initiatives of organizational policies so that a culture can be nurtured where EBP is promoted and practised effectively, hence guaranteeing better patient care outcomes [18-20]. While the inclusion of both staff nurses and post-RN students was justified by their shared clinical responsibilities, the potential for heterogeneity remains a limitation. First and most importantly, this study was conducted at a single tertiary care hospital in Mirpur, Azad Jammu and Kashmir. This significantly limits the external validity and generalizability of the findings to other healthcare settings, including primary care facilities, private hospitals, or hospitals in other regions of Pakistan. Future studies should consider stratified sampling to assess whether the results differ between these subgroups.

CONCLUSIONS

This study provides strong evidence of a significant positive association between organizational and individual barriers to the implementation of Evidence-Based Practice (EBP) among nurses in a tertiary care hospital in Mirpur, AJK. The findings reveal that as organizational barriers increase, individual barriers also rise, underscoring the interconnected nature of these challenges.

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Authors' Contribution

Conceptualization: SN

Methodology: SN, KE

Formal analysis: SN, KE

Writing and Drafting: SN, HA

Review and Editing: SN, KE, HA

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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