

Evidence-based practice profiles of nurses: a transcultural study[†]



Original article

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Abstract: **Objective:** To compare (i) the evidence-based practice (EBP) profiles and (ii) socio-demographic characteristics of nurses in 4 selected low-middle income countries (LMICs).

Methods: A cross-sectional survey was conducted among 677 nurses from 4 hospitals in 4 countries (Afghanistan, Ghana, Iran, and Uganda).

Results: The findings revealed that there are significant differences between the 3 EBP subscales (that is, practice/use, attitude, and knowledge/skill) across the 4 countries ($P < 0.05$). No significant EBP differences were identified across age groups and gender in the subscales of practice, knowledge, and attitude. Practice and knowledge subscales were significantly associated with working schedules (that is, part-time and full-time) ($P < 0.05$). Analyses also revealed significant differences between attitude and knowledge subscales and working experience ($P < 0.05$).

Conclusions: Nurses in the 4 countries have moderate practice, attitude, and knowledge/skills of EBP. Nurses in LMICs require continuous professional development programs and support to enhance their practice and knowledge regarding EBP in clinical settings.

Keywords: evidence-based practice • nursing • transcultural

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1. Introduction

Attempts to change from disease-centric care to patient- and family-centered care require nurses equipped with credible evidence and skills to engage with patients and other healthcare providers.¹ Evidence-based practice (EBP) has been identified as a cornerstone for such a transition and a core competency for practice.² EBP is an approach where healthcare decisions are based

on the available, current, valid, and relevant evidence and experience. Here, personal clinical experience is combined with the most credible and recent research evidence to make practice decisions.³ This evidence is available in various sources (that is, systematic reviews, meta-analyses, or well-designed clinical guidelines).^{4,5} The main features of EBP are reliance and judicious

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use of current best evidence, clinical expertise, and individual patient needs and choices.⁵

Efforts to foster EBP are in place in various settings.⁶ Indeed, an evidence-based approach to healthcare has been recognized globally as one of the critical competencies for healthcare workers.⁷

Nurses contribute to the largest healthcare provider workforce globally. EBP is advocated for in nursing practice. However, 10–40% of care is not based on credible evidence.⁸ Moreover, most nurses have limited skills in searching and appraising, and understanding literature.⁹ Many nurses do not know how to use Boolean and proximity operators, indexing, and truncation properly, and lack the skills to appraise evidence.¹⁰ One of the most consistent findings is the gap between best practice and actual clinical care.¹¹ Albeit the heightened importance of EBP and global recognition of EBP, evidence on the extent of its practice/use, attitude, and knowledge/skills among nurses in low and middle income countries (LMICs) is scanty. Incorporating EBP is a challenge in healthcare settings in LMICs. This is observed in the difference between what is taught in nursing curriculums and the reality of practice in the hospital settings,¹² especially in LMICs.

Education of nurses also varies across countries, and the nursing professional uniquely has numerous entry levels in most countries, including enrolled nurses (EN), Registered Nurses (RN), and graduate nurses (that is, Bachelor of Nursing [BSN] and Master of Science in Nursing [MSN]). The World Health Organization (WHO, 2019) advocates the entry-level for nurses to be a bachelor's degree. This entry-level has been correlated to patient safety. The BSc in nursing has been the minimum degree needed to work as a nurse in Iran for several decades, and accordingly, most nurses in Iran hold a BSc in nursing. In contrast, basic nursing education in Afghanistan is still at the diploma level, offered by both public and private institutions.¹³ Many countries, including Uganda, Malawi, Zambia, Kenya, and Zimbabwe, still have most of their nurses at the technician level as compared to the registered nurse level. However, nursing and midwifery education in Africa has shown signs of development over the past two decades.¹⁴ WHO reported that many countries have now included masters or doctoral levels studies in their programs. Nursing colleges in many countries are affiliating their programs to universities.¹⁵ Most nurses in Ghana are educated in training colleges, often, but not necessarily, affiliated with teaching hospitals.¹⁶ In Uganda, nurses and midwives constitute >60% of the health workforce. The hierarchical nursing cadre order comprises EN, diploma nurses, BSN, and MSN trained nurses.¹⁷ Although training of the BSN commenced in the '90s, Uganda's nursing culture does not favor integrating this level of nursing training in clinical nursing.¹⁸

Nursing education is consistent with competency in EBP; consequently, this is paramount for nursing practice.¹⁹ This in part stimulated the call for improving nursing. However, evidence for practice gaps still prevails internationally. Strategies to bridge these gaps should be informed by evidence on EBP practice, attitude, and nurses' skills. Developing robust, methodologically rigorous studies is the cornerstone of the generation of discipline-specific skills and practice.²⁰ This transcultural study in developing countries adds to the growing body of literature on EBP profiles of nurses.

2. Methods

2.1. Design

The study aimed to compare nurses' EBP profiles in 4 selected LMICs and the differences of EBP across socio-demographic categories of nurses. Descriptive-analytical cross-sectional study design was used in 4 selected countries.

2.2. Settings and participants

Nurses from 4 countries (i.e., Afghanistan, Ghana, Iran, and Uganda) were selected to participate in the study. Nurses with ≥6 months of practicing experience and at least a university degree of education were sampled for the study. The nurses should have been practicing in hospitals and registered with the respective countries' regulatory agencies under consideration.

The consensus sampling method was used in two settings: Aliabad Teaching Hospital of Kabul University of Medical Sciences and International Hospital Kampala. This method was chosen because the hospitals have fewer nurses than the required minimum number for random sampling. In Tamale Teaching Hospital of Ghana and selected Hospital of Tehran University of Medical Science, simple random sampling methods were used to select participants owing to the large population of nurses in this particular hospital.

The sample size was determined depending on the setting. For Aliabad Teaching Hospital of Kabul University of Medical Sciences and International Hospital Kampala, the census method was used. This method was chosen because of the relatively small population in the setting. Sample size determination at Tamale Teaching Hospital of Ghana and Shariati Hospital of Tehran University of Medical Sciences were carried out using Krejcie and Morgan's sample size determination.²¹ Krejcie and Morgan's sample size calculation was based on $P = 0.05$, where the probability of committing a type I error of <5% or $P < 0.05$ was chosen. We wished to know the sample size required to represent the opinions of 600 nurses working in Shariati Hospital

of Tehran University of Medical Sciences and Tamale Teaching hospital. Using Krejcie and Morgan's Table at $N = 600$. The sample size representative of these nurses was 234. Therefore, 234 nurses were estimated to participate in the study in these settings.

2.3. Measures/instruments

Data collection was done using two questionnaires; a researcher-developed tool was used to collect data on the respondents' socio-demographic characteristics. Additionally, the Clinical Effectiveness and Evidence-Based Practice Questionnaire (EBPQ)²² were used to assess the knowledge/skills, attitude, and practice/use of EBP. The EBPQ tool has 24 items and 3 subscales assessing practice, attitude, and knowledge/skill.²³

The original tool was used after obtaining permission from the authors.

2.4. Procedures

Pre-test: the study instruments, translated into Persian for our Afghanistan and Iran participants, were pretested using 10 nurses at Kabul University of Medical Sciences. Moreover, we adopted them for cultural and linguistic differences prevailing in these countries. This allowed information to be gathered on the areas that needed clarification, and after that, the necessary changes were made. The original versions of the questionnaires were used in Uganda and Ghana. The tool was self-administered. Data collection was done. The questionnaire's validity was assessed by sending it to 3 professors at Tehran University of Medical Sciences and Kabul University of Medical Sciences.

2.5. Data analysis

Data were analyzed using Statistical Software for Social Scientist (SPSS) version 24. The level of confidence was set at 95% for this study. Descriptive statistics were used (that is, frequency tables, mean, and standard deviations). Tests involving further inferential statistics, using Chi-square tests, Spearman correlation, and variance analysis, were carried out to assess the association of variables and the difference in knowledge across different categories of interest.

3. Results

A total of 677 nurses participated in the study from 4 countries. In Afghanistan ($n = 66$) and Uganda (160), all completed the survey, making a 100% response rate. In Iran and Ghana, 225 and 226 nurses returned the questionnaire, making the response rate 96.1% and 96.5%, respectively. The characteristics of the respondents who

participated in this study are shown in Table 1. The mean age of the respondents was 32 ($SD \pm 6.3$). The minimum age was 20 years, while the maximum was 58 years. Most respondents were female (57.2%), while males constituted 41.4% of the sample. Concerning education, most nurses had attained a bachelor's degree in nursing (68.7%). The majority of the nurses were working full-time duties (87.7%). The participants' mean working experience was 7.2 years ($SD = 6$), while the maximum working experience was 38 years (Table 1).

3.1. EBP profiles for the 4 countries

Nurses' average scores on the 3 EBPQ subscales are shown in Table 2. Nurses had relatively moderate scores on the 3 EBP scales. There was a significant difference between the 3 EBP subscales (practice/use, attitude, and knowledge/skill) across the 4 countries (Table 2). Comparatively, on the practice subscale, Iran had a relatively higher mean score. Regarding the attitude subscale, Ghana and Iran had a relatively higher score compared to other countries, while Iran had the highest knowledge score (Table 3).

3.2. EBP profiles according to socio-demographic characteristics

Descriptive and inferential tests were performed to explore differences in the participants' 3 EBPQ subscales and demographic characteristics. Descriptive statistics (that is, mean scores) revealed that, concerning age groups, those >40 years had more practice and positive attitude and knowledge ($Mean = 25.4, 20.3$, and 64.7 , respectively). No significant differences were identified between the different age categories on the 3 EBPQ subscales. Besides, very weak positive associations were revealed concerning Pearson tests (Table 4).

No significant associations were identified between genders on the 3 EBPQ subscales. Females scored notably higher mean scores on the 3 EBPQ subscales (Table 4). In the context of education levels, participants with master's qualifications had the highest mean practice scores, while participants with doctoral qualifications had the highest scores on EBP attitude and knowledge (Table 4).

Quantitative data also showed that practice and knowledge subscales were significantly associated with working schedules (Table 4), while there was no significant difference in attitude between part-time and full-time nurses. Part-time nurses had a higher score on the EBPQ-practice scale, while full-time nurses had higher scores on attitude and knowledge scores.

Regarding EBP subscales and working experience, those having an experience of >20 years had the highest mean scores on the practice scale, while two categories

Variables	Frequency (Percentage)			
	Afghanistan	Iran	Ghana	Uganda
<i>Age, years</i>				
20–30	46 (69.7)	103 (45.8)	93 (41.2)	68 (42.5)
31–40	6 (9.1)	73 (32.4)	127 (56.2)	89 (55.6)
>40	14 (21.2)	49 (21.8)	6 (2.7)	3 (1.9)
<i>Gender</i>				
Male	39 (59.1)	35 (15.6)	120 (53.1)	86 (53.8)
Female	26 (39.4)	181 (80.4)	106 (46.9)	74 (46.3)
None-response	1 (1.5)	9 (4)		
<i>Education level</i>				
12th Grade (enrolled)	18 (27.3)	4 (1.8)	2 (0.9)	6 (3.8)
14th Grade (diploma)	6 (9.1)	4 (1.8)	2 (0.9)	26 (16.3)
Bachelor	42 (63.6)	199 (88.4)	124 (54.9)	100 (62.5)
MSc		17 (7.6)	70 (31)	28 (17.5)
PhD			26 (11.5)	
None-response		1 (0.4)	2 (0.9)	
<i>Kind of duties</i>				
Full-time	49 (74.2)	174 (77.3)	101 (44.7)	154 (96.3)
Part-time	16 (24.2)	26 (11.6)	109 (48.2)	5 (3.1)
None-response	1 (1.5)	25 (11.1)	16 (7.1)	1 (0.6)
<i>Working experience, years</i>				
0–5	41 (62.1)	92 (40.9)	93 (41.2)	75 (46.9)
6–10	6 (9.1)	39 (17.3)	127 (56.2)	74 (46.3)
11–20	2	43 (19.1)	6 (2.7)	11 (6.9)
>20	17 (3)	51 (22.7)		

Table 1. Socio-demographic characteristics of the participants ($n = 677$).

Co-efficient	EBPQ Subscales		
	Practice/use ($n = 668$)	Attitude ($n = 674$)	Knowledge/ skills ($n = 622$)
Mean score	23.1	19.5	61.3
Standard deviation	10.7	6.06	17.4
Range	6–54	4–36	14–126
Median	23	20	63

Note: EBPQ, Evidence-Based Practice Questionnaire.

Table 2. Descriptive statistics for the self-reported EBP use, attitude, and knowledge/skills.

(that is, 6–10 years and 11–20 years) had the same and highest mean scores on the attitude and knowledge subscales. As the quantitative analyses revealed significant differences in attitude and knowledge subscales, the post-hoc analysis revealed that only the subgroup having experience between 11 years and 20 years was significant. No significant differences were identified on the practice subscale (Table 4).

4. Discussion

All the four countries had moderate to high scores in EBP practice, attitude, or knowledge. Baseline data on the status of EBP in nursing in individual countries and the developing world is needed to better understand and address global nursing practice issues. We believe that it is essential for the international nursing community to understand EBP in low-resource countries. This research is one among the very few that give a clear picture of this in LMICs.

The findings indicate that nurses in different countries had different EBP practice levels, attitudes, and knowledge. This could be attributed to differences in educational level because baccalaureate nursing students receive training in research as part of their education and commitment to improving the quality and view of EBP across health systems. However, facilitators and barriers to EBP across the settings could be different. Goosby and von Zinkernagel highlighted that partnerships form a strong foundation for planning and delivering evidence-based health services.²⁴ While evidence

EBPQ subscale score	Afghanistan (<i>n</i> = 65)	Ghana (<i>n</i> = 226)	Iran (<i>n</i> = 225)	Uganda (<i>n</i> = 160)	<i>P</i> value
Practice score	23.4 (SD = 8.7)	21.3 (SD = 10.1)	26.5 (SD = 11.3)	20.7 (SD = 10.1)	<0.001
Attitude score	16.4 (SD = 5.4)	20 (SD = 5.7)	20 (SD = 6.4)	19.6 (SD = 5.9)	<0.001
Knowledge score	43.0 (SD = 15.8)	60.1 (SD = 14.5)	67 (SD = 19.2)	59.3 (SD = 14.1)	<0.001

Note: EBP, evidence-based practice; EBPQ, Evidence-Based Practice Questionnaire.

Table 3. Descriptive statistics for the different countries self-reported EBP use, attitude, and knowledge/skills by country.

Variations	EBQ subscale, mean (SD)		
	Practice	Attitude	Knowledge
<i>Age</i>			
20–30	23.3 (10.5)	18.9 (5.9)	59.7 (17.3)
30–40	22.5 (10.5)	20.0 (5.9)	61.9 (15.5)
>40	25.4 (12.1)	20.3 (6.9)	64.7 (23.3)
<i>P</i> value (<i>r</i>)	0.438 (0.03)	0.148 (0.05)	0.57 (0.08)
<i>Gender</i>			
Male	22.8 (10.2)	19.2 (5.6)	60.8 (15.8)
Female	23.4 (11)	19.9 (6.3)	61.4 (18.4)
<i>P</i> value (χ^2)	0.81	0.199	0.558
<i>Education</i>			
12th grade	19.5 (9.7)	15.4 (6.4)	40.2 (17.6)
14th grade	21.6 (9.4)	19.9 (5.5)	60.6 (13.5)
BSC	23.4 (11)	19.1 (6.1)	61.6 (14.7)
MSC	23.7 (10.1)	21.4 (5)	63.9 (17.7)
PhD	22.1 (9.5)	23.7 (4.4)	69.3 (8.8)
<i>P</i> value (χ^2)	0.438 (0.03)	0.148 (0.05)	0.57 (0.08)
<i>Work schedules</i>			
Full-time	22.9 (10.7)	19.8 (6.0)	61.1 (17.1)
Part-time	24.0 (9.4)	17.8 (5.8)	60 (18.7)
<i>P</i> value (χ^2)	0.005*	0.293	0.004*
<i>Working experience</i>			
0–5	22.9 (10.5)	19.1 (6)	59 (17)
6–10	22.7 (10.4)	19.8 (5.8)	61.7 (14.1)
11–20	24.6 (11.6)	19.8 (5.8)	61.7 (14.1)
>20	24.6 (11.3)	18.9 (6.5)	58.3 (22.3)
<i>P</i> value (χ^2)	0.384	<0.001	0.033*

Note: *r* = Pearson correlation; χ^2 , chi-square test; *significant group in the category.

EBP, evidence-based practice.

Table 4. Descriptive statistics for different EBP use, attitude, and knowledge/skill by age, gender, education level, work schedule, and working experience.

to conceptualize the former sentiment is lacking, barriers to EBP in LMICs seem to be similar.⁹ This indicates that providing opportunities for nurses to engage in postgraduate education and continuous professional development may enhance EBP. Indeed, the majority of

nurses in this study had bachelors' training. EBP training is a fundamental component at this level in all 4 countries. Thus, nursing education levels may be beneficial to EBP²³ notwithstanding the global underinvestment in nursing education and lack of dynamism in curriculum, inter-professional preparation of nurses, coordinated collaboration, and support from stakeholders.¹⁴

Supporting EBP despite the economic status of a country may minimize the knowledge of the evidence gap. This may also enhance the attitude of nurses toward the implementation of EPB in their daily practice.

No significant differences were noted in practice, attitude, or knowledge in all countries concerning age, gender, and education qualifications. In the context of education, similar studies have shown that further nursing education has not improved evidence-based nursing practice.²⁵ Practice and knowledge subscales were significantly associated with working schedules. Part-time nurses had a higher score on the EBPQ-practice scale, while full-time nurses had higher scores on attitude and knowledge. One explanation for this finding could be differences in the time available for nurses to access evidence resources. Time has been noted as a significant barrier to the utilization of EBP across studies.^{13,23} Studies assessing whether working schedules (that is, part-time or full-time) could be a determinant in utilizing EBP need to be conducted. Such studies could incorporate interventional approaches exploring time-based interventions to improve practice and knowledge on EBP.

Differences were identified regarding EBP subscales and working experience; those having an experience of >20 years had the highest mean scores on the practice scale; while two categories (that is, 6–10 years and 11–20 years) had the same and highest mean scores on the attitude and knowledge subscales. More experience could be related to more excellent knowledge and skills. Changes are also made to practice with experience; nurses also tend to rediscover nursing and champion the profession as they gain experience of EBP and education.²³ Similar to previous findings,²⁶ knowledge of EBP may be experiential. However, it needs a combination of personal clinical experience with the most credible recent research evidence.

5. Conclusions

This study identified that nurses in these 4 countries have different levels of practice, attitude, and knowledge of EBP. In particular, they may be experiencing different levels of access to resources and other facilitators of EBP. However, they exhibit moderate to high attributes of EBP (that is, practice, attitude, and knowledge). Additionally, this research can guide developing countries' healthcare officials in understanding EBP requirements at the policy level. Further research is needed to explore the country profiles pertaining to barriers and facilitators of EBP among nurses.

Limitations

The information in this study was based on self-reports from nurses. There is a probability that self-report responses create validity limitations as the respondent may exaggerate responses to make the prevailing situation either excellent or worse.²⁷ We minimized such

limitations by requesting respondents to answer the questionnaire with utmost honesty based on reality.

Ethical approval

The study was approved by the Tehran University of Medical Science's research department and by Vice-Chancellor in Research Affairs – Tehran University of Medical Sciences (Approval ID: IR.TUMS.VCR.REC.1397.090). It was also approved by the various countries' respective authorities responsible for overseeing research ethicality. Information sheets and consent forms were provided to the participants before data collection. The anonymity of the study was fully preserved to ensure the confidentiality of the participants' information.

Conflicts of interest

None of the authors disclose any potential conflict of interest.

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