

Original Article

Awareness, Knowledge, Barriers, and Practice of Evidence-Based Practice among Nurses in Selected Hospitals in Sri Lanka: A Cross-Sectional Study

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Abstract

Introduction: Evidence-based practice (EBP) is a problem-solving approach to delivering efficient health care that integrates current the best evidence from scientific studies with clinical expertise, patient preferences, and values. The study aims to assess the awareness of EBP culture and barriers to implementing EBP among staff nurses.

Methodology: This descriptive cross-sectional study was carried out sample of 374 nurses who were attached to Medical and Surgical units in National Hospital Kandy and Teaching Hospital Peradeniya. A self-reported 27-item nursing EBP survey developed by (Titler et al., 1999) was adopted to measure the awareness of the EBP culture among nurses, while barriers and facilitators of EBP were measured using a 5-point Likert barriers scale developed by (Funk et al., 1991).

Result: The study was carried out involving 301 nurses, and the rate of participation was 80.05%. Among the total population, approximately three-quarters (76%) emphasized the importance of evidence-based practice (EBP). However, 60% of the nurses lacked a clear understanding of the process for implementing evidence into practice. Notably, 83% of the participants identified insufficient time as a significant barrier to implementing research into practice.

Conclusion: The findings of this study indicate that nurses have many concerns about EBP culture and face various obstacles, which make it difficult to implement evidence-based practice. Closing the gap in terms of continuous training programs on evidence-based practices (EBP), education, adequate facilities (including internet facilities and increased staffing), as well as support and guidance from professionals, is recognized as necessitating a collective effort. As a logical progression in this research, it is important to examine various viewpoints on the issue.

Key Words: Awareness, Knowledge, Barriers, Evidence-Based Practice, Nurses, Sri Lanka

Introduction

Evidence-based practice (EBP) is a broad concept, defined as a problem-solving approach to delivering efficient health care to the community that integrates the best evidence from scientific studies and statistical records with clinical expertise, patient preferences, and values (Melnik et al., 2010). As discussed by Estabrooks, 2003, it also can be defined as a

process in which applying specific research-based knowledge in patient care. In history, Florence Nightingale was known best for her legacy as the "Lady with the Lamp" who believed in utilizing EBP. Aravind & Chung, 2010, recognized the initial evidence of EBP; as the gold standard for delivering safe and empathetic healthcare. During Florence Nightingale's time, efficient healthcare delivery was maintained, with careful observation

followed by statistical records about the healthcare community. The approach of utilizing research evidence by nurses has been stepping up continuously since the early 1970s. Even though research utilization started several decades ago, practical implementation of research results is a highly complex and challenging task (Closs & M.Cheater, 1994). The evidence-based decision-making is a part of EBP that nurses are expected to implement in clinical practice to enhance patient care outcomes, lessen hospital stay, reduce the readmission rate, and reduce healthcare costs. Further maximizing the utilization of research evidence in nursing practice led to the pretension of professional identity and improve the quality of nursing care confirmed by numerous research studies (Brown et al., 2009; Kenari, 2014; Melnyk et al., 2018; Parveen et al., 2017). The EBP approach; is considered one of the contemporary approaches that can be adopted to enhance critical thinking, achieve autonomous clinical decisions, and improve nursing care quality in all incidences (Melnik et al., 2018).

Therefore, maximizing the utilization of research evidence in nursing practice leads to professional identity and the quality of nursing care, and positive patient outcomes (Doyle et al., 2013; Kenari, 2014; Melnyk et al., 2017).

In Sri Lanka, the high authority of nursing administration has failed to maintain the nursing professional status forward in the healthcare sector (Jayasekara, 2013). However, in the Sri-Lankan context, no study has been reported related to EBP among nurses. It is recommended (Jayasekara, 2013) the development of an evidence-based nursing curriculum is essential in undergraduate nursing education. Further, the undergraduate nursing curricula in Sri Lanka need to be upgraded to incorporate EBP into cultural, religious, and, medical influence, educational regulation, and healthcare systems (Jayasekara, 2013).

Materials and methods

In this study, two reliable and valid questionnaires were adopted to explore the nurses' EBP culture and research barriers.

A self-reported 27-item nursing **EBP survey** developed by (Titler et al., 1999) was adopted to measure the awareness of the EBP culture among nurses, while

The Barrier Scale For Research Utilization was developed by (Funk et al., 1991), which contained 29 items and uses 5 points, a Likert-type scale, yes or no choice (for only three questions) and a single long answer type questions were adopted for the research.

Following the pretest and necessary amendments, questionnaires were sent to 301 nurses who were attached to the medical and surgical units of the two main hospitals in the Kandy district, Sri Lanka.

The collected data were analyzed using the statistical software Statistical Package for Social Sciences version 25.0. In considering Cronbach alpha, the whole questionnaire was considered at once. Basic non-parametric tests were conducted to assess the parametric distribution. In assessing the EBP questionnaire, a three-factor analysis discussed by the original author (Titler et al., 1999), was utilized which included main three areas "Awareness of unit culture, awareness of organizational culture and nurses' skills and the practice regarding EBP. Besides, descriptive analysis methods were obtained for these statements, and a chi-square test was used to analyze the association between variables (Ammouri et al., 2014; Eaton, 2018; Squires et al., 2007). The same analysis method was used in the barriers questionnaire which represented the main 4 areas as discussed by (Funk et al., 1991), "The nurses' research values, skills and awareness, settings barriers and limitation, qualities of research and presentation and accessibility of the research.

Results

Demographic Data

In total 301 nurses responded to the questionnaires (response rate 80.05%) and no questionnaires were excluded from this study. Detailed demographics are presented in table 1.

The nurses' perception regarding EBP in unit culture was assessed using 7 questions. The

following results tabulated in table 2 were obtained.

In considering Nurses' perception of organizational culture the following results tabulated in table 3 were obtained. Nurses' knowledge and skills regarding evidence-based practice are tabulated in table 4.

Nurses' barriers to conducting research. The nurses' research values, skills and awareness. Barriers regarding using research values , skills

and lack of awareness are tabulated in table 5. Barriers and limitation to practice EBP is tabulated in table 6.

According to the study a result, insufficient time, inadequate facilities, and lack of support from administration and physicians were reported as the barriers for EBP while staff who work with facilitators of it. Results are tabulated in Table 7.

Table 1: Detailed demographic data

Character	Categories	Frequency (N=301)	Percentage (%)
Age of the participants	Below 30	188	62.5
	Between 30-40	96	31.6
	Above 40	17	5.6
Gender	Male	84	27.9
	Female	217	72.1
Maximum nursing qualification	Diploma in Nursing	252	83.7
	Degree in Nursing	47	15.6
	Masters in Nursing	2	0.7

Experience of years as a nurse	Less than 2 years	155	51.5
	Between 2-5 years	70	23.3
	More than 5 years	74	24.6
Type of unit	Medical	185	61.5
	Surgical	116	38.5

Table 2: The nurses' perception regarding EBP practice in unit culture

No	Questions	Strongly disagree	disagree	Neutral	Agree	Strongly agree
01	Evidence-based nursing practice is important to me. (Q: 02)	4 (1.3%)	2 (0.7%)	65 (21.6%)	159 (52.8%)	71 (23.6%)
02	A journal club to discuss nursing research findings would be helpful. (Q: 6)	3 (1.0%)	4 (1.3%)	23 (7.6%)	215 (71.4%)	55 (18.3%)
03	I seek out evidence-based solutions to patient care problems. (Q: 7)	7 (2.3%)	13 (4.3%)	148 (49.2%)	100 (33.2%)	33 (11%)
04	Someone to assist with a literature search and obtain articles would increase the use of evidence-based practices. (Q: 8)	0 (0%)	2 (0.7%)	46 (15.3%)	212 (70.4%)	41 (13.6%)
05	A bulletin board on my unit to share research articles would be helpful. (Q: 13)	0 (0%)	13 (4.3%)	61 (20.3%)	181 (60.1%)	46 (15.3%)
06	I'm willing to try out new innovations found to be effective. (Q: 15)	2 (0.7%)	3 (1.0%)	57 (18.9%)	191 (63.5%)	48 (15.9%)

07	In general, staff nurses care about evidence-based practice. (Q: 16)	2 (0.7%)	24 (8.0%)	162 (53.8%)	94 (31.2%)	19 (6.3%)
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Table 3: Nurses' perception of organizational culture

No	Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
01	I am aware of nursing research related to my clinical area because of discussions with my colleagues. (Q: 03)	6 (2.0%)	4 (1.3%)	54 (17.9%)	209 (69.4%)	28 (9.3%)
02	I have convenient access to nursing research journals. (Q: 04)	5 (1.7%)	11 (3.7%)	136 (45.2%)	117 (38.9%)	32 (10.6%)
03	Advanced practice nurses (clinical nurse specialists, nurse educators, etc.) act as mentors for evidence-based practice. (Q: 09)	6 (2.0%)	11 (3.7%)	137 (45.5%)	116 (38.5%)	31 (10.3%)
04	Nurse managers (Matrons) I work with promote and implement evidence-based practice in clinical settings. (Q: 18)	15 (5.0%)	24 (8.0%)	199 (66.1%)	56 (18.6%)	6 (2.0%)
05	I understand the process for implementing evidence into practice in my organization. (Q: 19)	4 (1.3%)	26 (8.6%)	186 (61.8%)	76 (25.2%)	9 (3.0%)
06	I am aware of evidence-based practice projects implemented in my organization. (Q: 25)	2 (0.7%)	47 (15.6%)	179 (59.5%)	66 (21.9%)	7 (2.3%)
07	I participate in the collection of data for research studies and quality improvement projects (not evidence-based practice). (Q: 26)	3 (1.0%)	50 (16.6%)	125 (41.5%)	104 (34.6%)	19 (6.3%)
08	I am able to develop an evaluation plan to monitor practice improvement made through the use of evidence-based nursing. (Q: 27)	0 (0%)	35 (11.6%)	152 (50.2%)	100 (33.2%)	11 (3.7%)

Table 4: Nurses' knowledge and skills regarding evidence-based practice

No	Questions	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
01	I am aware of evidence-based practice in general. (Q: 1)	2 (0.7%)	1 (0.3%)	103 (34.2%)	148 (49.2%)	47 (15.6%)

02	I know where to find evidence (research findings or evidence-based clinical guidelines) to guide my practice. (Q: 5)	7 (2.3%)	7 (2.3%)	115 (38.2%)	140 (46.5%)	32 (10.6%)
03	I can critique “synthesis” reports or technology assessments (systemic reviews) for a general understanding of their strength and weakness. (Q: 12)	1 (0.3%)	27 (9.0%)	157 (52.2%)	102 (33.9%)	14 (4.7%)
04	I am aware of effective strategies for implementing practice changes. (Q: 20)	1 (0.3%)	21 (7.0%)	142 (47.2%)	126 (41.9%)	11 (3.7%)
05	I can read a nursing research report and have a general notion about its strengths and weakness. (Q: 10)	0 (0%)	7 (2.3%)	144 (47.8%)	128 (42.5%)	22 (7.3%)
06	I can read a nursing research report and make a sound judgment about its scientific merit. (Q: 11)	1 (0.3%)	15 (5.0%)	159 (52.8%)	106 (35.2%)	20 (6.6%)

Table 5: The nurses’ research values, skills and awareness

Questions	To no extent	To a little extent	To a moderate extent	To a great extent	No opinion
The nurse is unaware of the research	41 (13.6 %)	73 (24.3%)	104 (34.6)	60 (19.9%)	23 (7.6%)
The nurse does not feel capable of evaluating the quality of the research	30 (10.0%)	43 (14.3%)	128 (42.5%)	53 (17.6%)	47 (15.6%)
The nurse isolated from knowledgeable colleagues with whom to discuss the research	37 (12.3%)	69 (22.9%)	136 (45.2%)	32 (10.6%)	27 (9.0%)
The nurse is unwilling to change/try new ideas	36 (12.0%)	69 (22.9%)	136 (45.2%)	23 (7.6%)	37 (12.3%)
The nurse sees little benefit to self	27 (9.0%)	44 (14.6%)	128 (42.5%)	57 (18.9%)	45 (15.0%)
There is no documented need to change the practice	46 (15.3%)	56 (18.6%)	88 (29.2%)	23 (7.6%)	88 (29.2%)

The nurse feels the benefit of changing practice will be minimal	46 (15.3%)	65 (21.6%)	96 (31.6%)	66 (21.9%)	28 (9.3%)
The nurse does not see the value of research in practice	28 (9.3%)	52 (17.3%)	136 (45.2%)	52 (17.3%)	33 (11.0%)

Table 6: Settings barriers and limitations

Questions	To no extent	To a little extent	To a moderate extent	To a great extent	No opinion
There is insufficient time on the job to implement new ideas	11 (3.7%)	25 (8.3%)	111 (36.9%)	140 (46.5%)	14 (4.7%)
The nurse does not have time to read the research	12 (4.0%)	25 (8.3%)	97 (32.2%)	146 (48.5%)	21 (7.0%)
The nurse does not feel she/he has enough authority to change patient care procedures	17 (5.6%)	25 (8.3%)	97 (32.2%)	115 (38.2%)	47 (15.6%)
The facilities are inadequate for implementation	13 (4.3%)	45 (15.0%)	167 (55.5%)	61 (20.3%)	15 (5.0%)
Other staff are not supportive of the implementation	57 (18.9%)	104 (34.6%)	89 (29.6%)	20 (6.6%)	31 (10.3%)
Physicians will not cooperate with the implementation	8 (2.7%)	43 (14.3%)	118 (39.2%)	49 (16.3%)	81 (27.1%)
The nurse feels results are not generalizable to their own setting	16 (5.3%)	36 (12.0%)	114 (37.9%)	75 (24.9%)	60 (19.9%)
The administration will not allow the implementation	27 (9.0%)	45 (15.0%)	111 (36.9%)	42 (14.0%)	76 (25.2%)

Table 7: Presentation and accessibility of the research

Questions	To no extent	To a little extent	To a moderate extent	To a great extent	No opinion
Statistical analyses are not understandable	29 (9.6%)	63 (20.9%)	142 (47.2%)	19 (6.3%)	48 (15.9%)
The relevant literature does not comply in one place	13 (4.3%)	54 (17.9%)	125 (41.5%)	23 (7.6%)	86 (28.6%)
Research reports/articles are not readily available	20 (6.6%)	79 (26.2%)	148 (49.2%)	22 (7.3%)	31 (10.3%)
The implication for practice is not made clear.	17 (5.6%)	72 (23.9%)	153 (50.8%)	13 (4.3%)	46 (15.3%)
The research is not reported clearly and readably	41 (13.6%)	55 (18.3%)	98 (32.6%)	13 (4.3%)	94 (31.2%)
The research is not relevant to the nurse's practice	58 (19.3%)	123 (40.9%)	96 (31.9%)	8 (2.7%)	16 (5.3%)

Discussion

Study results indicate that the nurses viewed EBP positively and consistently with awareness of EBP. However, their level of knowledge towards EBP was not highly satisfactory and unclarity on each of the criteria of EBP. This result is consistent with previous studies describing the insufficient knowledge of EBP among nurses (Ammouri et al., 2014; Li et al., 2019).

According to the results obtained, awareness regarding EBP culture is positively associated with the nurses' knowledge and skills of EBP culture. In addition, there was a significant association noticed between the awareness of EBP and the finding of scientific evidence (scientific research findings and evidence-based clinical guidelines) for implementing evidence-based nursing care, where a similar amount of

responses were obtained (64.8%, 57.1%). Similarly, an awareness towards EBP is a significant influencer for effective initiation and implementation (Abuejheisheh et al., 2020). Study results conveyed an unsatisfied level of evidence-based practice among nurses. Accordingly, out of 301 participants, only 133 (44.2%) agreed to seek EBP solutions to patient care procedures. Similarly, an insufficient level of practice towards EBP was noticed among Chinese and Oman nurses, while favorable results were obtained for knowledge and attitude (Ammouri et al. 2014; Li et al. 2019). On the other hand, even though the study participants showed a considerably low level of practice towards EBP, there was a significant association between academic qualification and years of experience with the level of practice. The finding consistent with a study discovered that educational qualification and years of

experience had optimized the practical aspect of EBP (Ammouri et al. 2014).

On the other hand, there was a robust association noticed between nurses' knowledge and skills to implement EBP with nurses' years of experience ($\Phi > 0.25$) and a strong association between knowledge and skills with the nurses to implement EBP with academic qualifications ($\Phi > 0.25$). As comparably, a few studies (Li et al., 2019b) (Ammouri et al., 2014) have confirmed a positive relationship between the nurses' years of clinical experience and their competency in EBP. Additionally, the studies revealed that nurses with more years of clinical expertise consist of more knowledge and greater engagement in EBP culture.

Similar to (Ozga et al., 2019) study findings indicate several factors that affect the attitude toward EBP, including poor interpersonal collaboration such as poor support and guidance, inadequate facilities, and insufficient time. However, the study participants have reported that these factors supposedly contribute to a negative perception of the implementation of EBP generally. In addition, the study discovered a strong association between the attitude of the nurses on EBP with academic qualifications and years of experience ($p < 0.05$ and $\phi > 0.15$). This association consisted of a study stating that positive organizational culture, high educational qualification, and research experience led to a positive attitude toward EBP.

A positive correlation has been noticed between the exposure to the critical analyzing skill of articles, as a similar result, was obtained from experiences in research activity and understanding of research articles. Out of 301 participants, 104 (34.6%) agreed that they have participated in the collection of data for research/quality improvement projects, while a similar number of participants have agreed to critique synthesis reports/systemic reviews for the general understanding and could make a sound judgment about its strength and weakness. In similar, Parahoo (2000) emphasized that the nurse's insufficient exposure to research evidence could lead to

difficulty in perceiving the significance of research unitization, which ultimately resulted in poor implementation of scientific evidence in patient care procedures (Parahoo 2000).

In 2000, (Parahoo, 2000) categorized the barriers of EBP into two main categories: setting barriers and related professional barriers. Accordingly, study results demonstrated that the nurse's awareness of EBP, insufficient time, lack of authority to change practice, lack of support and guidance from physicians and administration, and lack of knowledge on research were the related professional barriers. Lack of access to research materials and lack of facilities, especially the staffing shortage, were setting-related barriers. This result was adherence to several studies conducted worldwide (Huang et al. 2017; Li et al. 2019; Parahoo 2000; Reid et al. 2017; Retsas et al. 2000).

Conclusions: EBP is a fresh concept in Sri Lanka; this is the initial attempt to assess the EBP culture in Sri Lankan clinical settings. Results conveyed that nurses' attitudes and awareness towards EBP were more optimistic than their knowledge/skills and practice. According to unit culture, the EBP has not been implemented yet due to the unavailability of essential elements. However, nurses are willing to initiate and enforce innovations found to be effective for patients. Besides, the priority for EBP is not specified at the organizational level; consequently, the importance of EBP is not recognized yet. Therefore, the nurse's knowledge and skills for effectively utilizing the best scientific evidence in patient care are significantly poor. Further, a significant association was found between knowledge and practice with academic qualification and years of experience. The utmost barriers to implementing EBP among nurses were lack of time to engage in research activities and read articles, insufficient resources, especially staffing and tech facilities, and insufficient support and guidance from senior nurses (ward-in-charge, matrons) and physicians. Closing the gap requires collective efforts in implementing continuous training programs focused on

evidence-based practices (EBP), improving education, ensuring adequate facilities (including internet facilities and increased staffing), and providing support and guidance from professionals. To advance this research, it is crucial to undertake an examination of diverse perspectives on the issue. By exploring different viewpoints, a comprehensive understanding of the challenges and potential solutions can be gained, leading to more effective strategies for bridging the gap.

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