# Knowledge, Attitude, Perceived Barriers and Evidence-based Nursing Practice among Nurses at Tertiary Level Hospital in Dharan, Nepal

นิพนธ์ต้นฉบับ

Original Article


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## บทคัดย่อ


**วัตถุประสงค์:** เพื่อศึกษาระดับการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์ ความรู้ ทัศนคติ การรับรู้อุปสรรค และปัจจัยทำนายการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์ของพยาบาลในโรงพยาบาลระดับตติยภูมิในประเทศเนปาล **วิธีการศึกษา:** กลุ่มตัวอย่างเป็นพยาบาลที่ปฏิบัติงานใน Koirala Institute of Health Sciences เมืองธาราน ประเทศเนปาล จำนวน 234 คน เลือกกลุ่มตัวอย่างโดยการสุ่มอย่างเป็นระบบ เก็บข้อมูลช่วงเดือนมีนาคม 2559 โดยให้กลุ่มตัวอย่างตอบแบบสอบถาม วิเคราะห์ข้อมูลด้วยสถิติพรรณนา สัมประสิทธิ์สหสัมพันธ์เพียร์สัน และการถดถอยพหุคูณ **ผลการศึกษา:** พบว่าพยาบาลมีความรู้ ทัศนคติ การรับรู้อุปสรรค และการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์ในระดับปานกลาง ความรู้และการรับรู้อุปสรรคในการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์มีความสัมพันธ์กับการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์อย่างมีนัยสำคัญทางสถิติ ($r$ = 0.45, $P$-value = 0.01 และ $r$ = -0.30, $P$-value = 0.01 ตามลำดับ) ส่วนทัศนคติไม่สัมพันธ์กับการปฏิบัติการพยาบาล ผลการวิเคราะห์การถดถอยพหุคูณ พบว่าความรู้และการรับรู้อุปสรรคสามารถร่วมกันทำนายความแปรปรวนของการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์ได้ร้อยละ 24 ($P$-value < 0.001) โดยความรู้มีอิทธิพลต่อการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์มากที่สุด ($\beta$ = 0.40, $P$-value < 0.001) รองลงมาคือ การรับรู้อุปสรรคในการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์ ($\beta$ = -0.21, $P$-value < 0.001). **สรุป:** การปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์ในพยาบาลประเทศเนปาลอยู่ในระดับปานกลาง และสัมพันธ์กับความรู้และการรับรู้อุปสรรค ผู้บริหารการพยาบาลควรส่งเสริมให้พยาบาลมีการปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์เพิ่มขึ้น โดยการเพิ่มพูนความรู้และหาวิธีการเพื่อลดอุปสรรคของการปฏิบัติโดยหลักฐานเชิงประจักษ์ของพยาบาล



**คำสำคัญ:** การปฏิบัติการพยาบาลโดยใช้หลักฐานเชิงประจักษ์, ความรู้, การรับรู้อุปสรรค, เนปาล


## Abstract


**Objective:** To determine the level of evidence-based nursing practice, and its related knowledge, attitude, and perceived barriers, and the predicting factors of evidence-based nursing practice among nurses at a tertiary level hospital in Nepal. **Method:** A total of 234 nurses who were randomly selected by using systematic random sampling technique participated in this study. Data were collected during March to April 2016 in B. P. Koirala Institute of Health Sciences, Dharan, Nepal. Participants were asked to complete 5 self-reported questionnaires. Descriptive statistics, Pearson's correlation and multiple regression were computed for data analysis. **Results:** Evidence-based nursing practice, knowledge, attitude, and perceived barriers were all at a moderate level. Knowledge of evidence-based nursing practice and perceived barriers towards evidence-based nursing practice were significantly correlated with the practice ($r$ = 0.45, $P$–value = 0.01 and $r$ = -0.30, $P$–value = 0.01 respectively). However, attitude towards the practice was not associated with the practice. Results of multiple regression showed that knowledge and perceived barriers together explained about 24% of the practice variance ($P$-value < 0.001). Knowledge distinctively acted as the most significant predictor of evidence-based nursing practice ($\beta$ = 0.40, $P$-value < 0.001), followed by perceived barriers ($\beta$ = -0.21, $P$-value < 0.001). **Conclusion:** Evidence-based nursing practice of Nepalese nurses was at a moderate level and was significantly associated with knowledge and perceived barriers. These findings suggest that nurses administrators should focus on evidence-based nursing practice and take measures to improve its implementation towards quality of care.



**Keywords**: evidence-based nursing practice, knowledge, attitude, perceived barriers, Nepal


## Introduction

Health care system is the organization of people, institutions, and resources that deliver health care services to meet the health needs of target populations. In 2000, World Health Organization (WHO), encourages that "A health system consists of all organizations, people and actions whose primary intent is to promote, restore and maintain health".[1] With its statement "*To Err Is Human*," the Institute of Medicine (IOM) , recognized that quality and safety of healthcare requires collaboration among patient-centered teams of professionals. Research has shown that clinical decisions based on inaccurate sources of information can lead to medical errors, high treatment costs, and poor patient outcomes.[2]

In the recently articulated vision for the future of nursing in the Future of Nursing report[3], it focuses on the convergence of knowledge, quality, and new functions in

nursing. It emphasizes utilizing knowledge in clinical decision making and producing research evidence on interventions that promote uptake and use by individual providers and groups of providers. According to the ethical code for nurses, they should be active in the development of nursing care and thereby make use of nursing research in practice.[4] Evidence-based practice (EBP) is one of the main professional competencies for health care professionals and a priority for medicine and nursing curriculum as well. EBP leads to improvement of effective and efficient care and patient outcomes. Nurse educators have a responsibility to teach the future nurses, and an opportunity to promote patient outcomes.[5] Today, EBP is emphasized to increase the quality of care and patient safety in healthcare, and health professionals are expected to implement evidence into their daily clinical practice.[6] Good evidence-based professional policy, guidelines and protocols should therefore be worked out using the best available evidence and clinical knowledge tools for ensuring that research is integrated into clinical practice.

The South Asian region comprising of 8 countries (India, Bangladesh, Bhutan, Maldives, Pakistan, Afghanistan, Nepal & Maldives) is diverse in geographical, linguistic and cultural characteristics but has common health challenges. It harbors one quarter of the world population but bears a triple burden of persisting infectious diseases, increasing chronic conditions and a growing rate of injuries and violence. Furthermore, these countries have one of the poorest health indicators in the world.[7] Unfortunately, large and well equipped hospitals in south Asian regions are able to provide service to only a small privileged fraction of the population and majority of patients are being treated by insufficiently trained or untrained practitioners. However, the overall economic growth of South Asian countries in the past decade and practice of evidence-based medicine in some tertiary care centers have raised a hope of quality care and best healthcare service.

Carrying out EBP requires that the practice of healthcare professionals is based on the most up-to-date evidence or knowledge.[8] Few studies in Nepal have investigated nurses' perspectives regarding carrying out research as well as reading and utilizing research. While research is considered to be an important part of nursing practice, professional practices are often still guided by traditional methods and rituals, and nurses do not generally utilize research findings in providing care. Although the studies are carried out in several countries, the factors inhibiting research utilization have not been well explored in the Nepalese national health system and particularly within the discipline of nursing in Nepal.[9]

Nurses play a key role in facilitating consensus regarding evidence to be used and ensuring availability of resources for empowering nurse accountability for outcome-oriented patient care through utilizing evidence based nursing practice. EBP marks a shift among health care professionals from a traditional emphasis on authoritative opinions to an emphasis on data extracted from prior research and studies.[5] Attitudes and interest varied with levels of education and position. So it can be seen that most EBP activities performed by professional nursing associations were found to be competence- and attitude-oriented.[10] Several previous studies have tried to investigate possible barriers to adopting EBP. One barrier that some studies revealed was the enormous amount of health care literature, published in a variety of sources, which makes it almost impossible for nursing professionals to keep up to date.[10,13,14]

Although previous studies have examined nurses' knowledge, attitude, and perceived barriers towards evidence based practice, predicting factors were least explored and thus the current study was expected to fill this gap of knowledge. This will allow nurse managers to view the problem of using evidence-based practice from nurses' view, through lenses of their knowledge, attitude and perceived barriers, ultimately broadening the scope of implementation. Moreover, with the large number of nurses providing care in Nepal, few scientific studies on evidence based nursing practice, and only previous study reporting barriers and facilitators of research utilization, it alarms the need of this study in Nepal. This study aimed to investigate evidence-based nursing practice and predicting factors of evidence-based nursing practice among nurses in Nepal. The objectives of this study to determine level of evidence-based nursing practice, knowledge of evidence-based nursing practice, attitude towards evidence based nursing practice and perceived barriers towards evidence-based nursing practice and the predictive relationship of nurse's knowledge, attitude towards and perceived barriers to evidence based nursing practice in Nepal. It was hypothesized that nurse's knowledge of evidence-based nursing practice, attitude towards evidence-based nursing practice and perceived

barriers towards evidence-based nursing practice could predict utilization of research for evidence-based nursing practice.

The conceptual framework of this study was synthesized from Rogers's theory of Diffusion of Innovations[11] and literature review of evidence-based practice (EBP), knowledge of nurses regarding EBP, attitude towards EBP and perceived barriers to implement EBP. Rogers's "diffusion of innovations" offers a conceptual model for demonstrating the basic elements of how innovations such as evidence-based practices are diffused among individuals and through organizations. An innovation is an idea, practice, or object that requires the acquisition of new knowledge or the formation of a new opinion or attitude toward that idea, practice, or object. Consistent with Rogers's definition of an innovation, research information for evidence–based practices are considered to be innovations. The report or presentation of the research findings is the communication channel and the healthcare setting represents the social system.[12] Therefore, in this study, research information was the innovation, while healthcare setting or nursing setting was a social system. The report or presentation of research information was the communication channel. In the innovation-decision process, knowledge was the knowledge of evidence-based nursing practice. In addition, persuasion was the attitude towards evidence-based nursing practice, and decision to accept or reject the information here was the perceived barriers of nurses to use research information to evidence-based nursing practice. Knowledge should be properly imparted in the nursing education regarding evidence based practice.[14] Furthermore, positive attitude towards EBP results in high use of EBP in nursing.[2,15] Barriers to implementation of evidence-based practices include lack of knowledge or skills, absence of organizational support, language barriers, lack of physician support, and lack of time.[15]

# Methods

This research was a predictive cross-sectional study. The data collection was conducted from March to April, 2016 at all clinical units in B. P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal. A systematic random sampling technique was used to recruit the nurses who met the following criteria: 1) currently working in this hospital, 2) being Nepalese registered nurses, 3) having Proficiency Certificate Level [PCL] or bachelor's degree of nursing. Sample size was calculated using Cochran (1997) formula as $n_0 = (t)^2 \times (p)(q) / (d)^2$, and subsequently $n_1 = n_0 / (1 + n_0 / \text{population})$. With t of 1.96, p and q of 0.5, d of 0.05, $n_0$ of 384 and population of 600, the sample size ($n_1$) of 234 participants was required.

**Instruments**

There were **five self-reported questionnaires** used for data collection in this study. The first questionnaire collected **demographic characteristics** of the participants which included age, sex, working department, level of education, position in the department, training on research conduction and years of experience.

The second questionnaire asked the participants about their **evidence-based nursing practice**. Practice referred to the nurse's incorporation of research evidence and innovations into clinical practice such as in decision making and nursing service. It was measured using 7 items developed by researchers based on literature review with content validity for scale (S-CVI) of 0.83 as evaluated by the panel of five experts. The response was a five-point Likert-type scale ranging from 1-strongly agree to 2-disagree, 3-neutral, 4-agree and 5- strongly agree. The total score of evidence-based nursing practice was categorized into three levels of low (7.00 - 16.33 points), moderate (16.34 - 25.67 points), and high (25.68 - 35.00 points) levels of practice. This was based on the concept of Federick[17] where the difference of possible maximum score and the possible minimum score divided by 3.

The third questionnaire measured the participant's **knowledge about evidence-based nursing practice**. Knowledge referred to nurse's awareness regarding research evidence, its terms, skills to analyze the research information, and retrieval of information and its importance in nursing service and practice. The questionnaire was the Evidence Based Practice Questionnaire (EBPQ**)** developed by Upton and Upton (2006).[18] This knowledge sub-scale of EBPQ contained 14 items using a response with seven-point Likert-type rating scale ranging from 1-strongly disagree to 7-strongly agree. Based on Federick's method[17], the total score of EBPQ could be categorized into three levels of low (14.00 - 42.00 points), moderate (42.01 - 70.00 points), and high (70.01 - 98.00 points) levels of knowledge.

The fourth questionnaire evaluated the participant's **attitude towards evidence-based nursing practice**. Attitude referred to nurse's perceived value of, role in, and interest in nursing research. It was measured using Evidence Based Practice Questionnaire (EBPQ**)** developed by Upton and Upton (2006).[18] This attitude sub-scale of EBPQ contained 4 items using a response with seven-point Likert-type rating scale ranging from 1-strongly disagree to 2-somewhat disagree, 3-disagree, 4-neutral, 5-agree, 6-somewhat agree, and 7-strongly agree. The total score of attitude was categorized into low (4.00 - 12.00 points), moderate (12.01 - 20.00 points), and high (20.01 - 28.00 points) levels of attitude based on Federick's method.[17]

The fifth questionnaire evaluated the participant's **perceived barriers towards evidence-based nursing practice**. Perceived barriers referred to the nurse's perception on obstacles or difficulties towards implement-tation of evidence-based nursing practice. It was measured by the barrier scale developed by Funk et al. (1991).[18] This barrier scale contained 29 items with four components of barriers embedded including organizational factors (8 items), individual factors (8 items), communicational factors (6 items) and quality of research (6 items). The response of the barrier scale was a five-point Likert-type rating scale ranging from 1-to no extent, to 2-to a little extent, 3-to a moderate extent, and 4-to a great extent, and 5-no opinion. The total score of barrier was categorized into low (28.00 - 65.33 points), moderate (65.34 - 102.37 points), and high (102.38 - 140.00 points) levels of barrier based on Federick's method.[17]

**Questionnaire quality assurance**

All questionnaires were developed in English and used among nurses to measure the variables. Since English language is not the barrier in Nepal, researcher used the original version of questionnaires. Practice scale was developed by researcher therefore, five experts were selected to perform content validity of the tool and S-CVI of 0.83 was obtained. In terms of reliability, questionnaires were tested for internal consistency reliability with 30 nurses who had similar characteristics to the sample of this study in BPKIHS, Dharan, Nepal. All questionnaires were found to have acceptable levels of reliability with Cronbach's alpha coefficients of 0.77, 0.84, 0.63 and 0.85 for practice, knowledge, attitude and barrier scales, respectively.

**Data collection procedure**

Ethical approval was received from the Institutional Research Board, Faculty of Nursing, Burapha University, followed by the Nepal Health Research Council (NHRC) and the Institutional Research Committee (IRC), BPKIHS. After receiving the permission from the rector and matron of BPKIHS, Dharan, the researcher (Shrestha) met head nurses of each department, introduced herself and explained them about the purposes and method of the study. The researcher gave the set of questionnaires along with consent form and participant's information sheet in a sealed envelope to the head nurse. With the head nurse's help, participants were given these materials, and asked to complete the questionnaires and fill in the written consent form. Participants were asked to return all completed documents to the head nurse within one week. This set of questionnaires took about 15 - 25 minutes to complete. Once collected, questionnaires were checked for completeness and accuracy. The questionnaires were stored in private and secured place which could be accessible by the researcher only.

**Data analysis**

All data were analyzed by using statistical program. Descriptive statistics of the demographic data and scores and levels of knowledge about, attitude towards and perceived barriers towards evidence-based nursing practice were presented as frequency with percentage and mean with standard deviation. Pearson's correlation analysis and standard multiple regression analysis were used to measure variable relationships and predicting factors of evidence based nursing practice, respectively. All statistical significances were set at a type I error of 5%.

## Results

Of 234 participating nurses, all of them were female. The majority were in their 20 to 29 years of age (75.2%), followed by 30 or older (18.4%), and less than 20 years (6.4%). Their mean age was 25.50 years (±4.89). Slightly higher than half of the participants were single (54.3%), while 44.9% were married and the rest 0.4% were widowed. In terms of education, most of them had proficiency certificate level degree (83.8%) while 16.2% had a bachelor's degree in nursing.

Regarding experience, 35.9% of participants had nursing experience of one to three years. About four-fifth of the participants were staff nurse (82.1%) and amazingly a similar ratio of participants (81.6%) did not receive any trainings regarding research conduction or survey study.

**Description of study variables**

With the possible range of score of evidence-based nursing practice of 7 – 35 points, mean score of evidence-based nursing practice was 28.13 which reflected a moderate level (Table 1). In terms of knowledge, a mean score of 76.89 indicated a moderate level of knowledge. The mean score of attitude towards evidence-based nursing practice of 12.82 suggested a moderate level of attitude. Lastly, the mean score of perceived barriers towards evidence-based nursing practice of 69.46 also indicated a moderate level of perceived barrier.

**Table 1** Description of study variables (N = 234).

| Variables | M | SD | Possible score | Actual score | Interpretation |
|---|---|---|---|---|---|
| Evidence-based nursing practice | 28.13 | 3.21 | 7 - 35 | 20 - 35 | Moderate |
| Knowledge of evidence-based nursing practice | 76.89 | 8.22 | 14 - 98 | 58 - 95 | Moderate |
| Attitude towards evidence-based nursing practice | 12.82 | 3.08 | 4 - 28 | 7 - 20 | Moderate |
| Perceived barriers towards evidence-based nursing practice | 69.46 | 16.78 | 28 - 140 | 29 -118 | Moderate |

**Correlations among factors affecting evidence-based nursing practice**

Evidence-based nursing practice was significantly and positively associated with knowledge of evidence based nursing practice ($r$ = 0.45, $P$–value = 0.01), and significantly negatively associated with perceived barriers towards evidence based nursing practice ($r$ = -0.30, $P$–value = 0.01), but not with attitude towards evidence-based nursing practice ($r$ = -0.01, $P$–value = 0.89).

**Table 2** Pearson's correlation coefficients among study variables (N = 234).

| Variables | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1. Knowledge of evidence-based nursing practice | - | | | |
| 2. Attitude towards evidence-based nursing practice | 0.53 | - | | |
| 3. Perceived barriers towards evidence-based nursing practice | -0.21* | 0.13 | - | |
| 4. Evidence-based nursing practice | 0.45* | -0.01 | -0.30* | - |

* $P$-value < 0.01.

**Predicting factors of evidence-based nursing practice**

Multiple regression analysis revealed that two independent variables including knowledge about and perceived barriers towards evidence-based nursing practice together significantly explained 24% of the variance of the evidence-based nursing practice ($R^2$ = 0.24, $F_{(2, 231)}$ = 36.47, $P$-value < 0.001) (Table 3). Based on the extent of β value, knowledge of evidence-based nursing practice (β = 0.40, $P$–value < 0.001) was more prominent as a predictor of evidence-based nursing practice than perceived barriers (β = -0.21, $P$–value < 0.001).

**Table 3** Predicting factors of evidence-based nursing practice by multiple regression analysis (N = 234).

| Predictor variables | β | $t$ | $P$ –value |
|---|---|---|---|
| Knowledge of evidence-based nursing practice | 0.4 | 6.78 | < 0.001 |
| Perceived barriers towards evidence-based nursing practice | - 0.21 | 3.53 | < 0.001 |

$R^2$ = .24, $F_{(2,231)}$ = 36.47***

## Discussions and Conclusion

The findings of this study impose a greater impact on administrators and nurse managers that Nepalese nurses at tertiary level of care mostly perceives organizational factors as the major barriers. Moreover, trainings regarding research conduction and motivation to conduct research studies to validate their practice can help change the perception of nurses towards the barriers to implement evidence-based nursing practice.

The overall mean score of knowledge of evidence-based nursing practice was 76.89 points which was in a moderate level. Regarding the result of Pearson's correlation, it showed that knowledge of evidence-based nursing practice was significantly positive associated with the practice. The result of multiple regression indicated that knowledge of evidence-based nursing practice was a significantly predictor of the practice. Our finding was supported by the finding by Salem, Alamrani, and Albloushi (2009)[10] which concluded there was a positive correlation of knowledge with practice *(r* = 0.56, $P$–value < 0.001). Furthermore, a study done in USA found the strongest correlation of the EBPQ factors was between the practice of evidence-based practice and knowledge/skills associated with evidence-based practice ($r$ = 0.591, $P$–value < 0.05), indicating that higher knowledge scores were associated with higher practice scores.[4]

The findings reflected moderate nurse's knowledge of evidence-based nursing practice at the tertiary level hospital. Moreover, only 16.2% of nurses in this study held a bachelor's degree. Therefore, nurses should be well informed and educated about evidence-based nursing practice and its advantages. They should also be trained about various types of research and information technology skills so that they can make use of evidence to implement it in the daily practice.

The overall mean score of attitude towards evidence-based nursing practice was 12.82 points which was in a moderate level. Regarding the result of Pearson's correlation analysis, it showed that attitude towards evidence-based nursing practice was not associated with the practice. Since it was associated with the practice, the attitude towards evidence-based nursing practice variable was not entered in multiple regression analysis. Contrastingly, finding by Salem, Alamrani and Albloushi (2009) concluded that attitude had a positive significant correlation with practice ($r$ = 0.40, $P$–value < 0.001).[10] Moreover, our result is different from the findings found in a study conducted by Mehrdad and colleagues (2012) that high level of positive attitude causes inclination to implement the evidence-based practice.[15]

The overall mean score of perceived barriers towards evidence-based nursing practice was 69.46 points which was in a moderate level. Regarding the result of Pearson's correlation analysis, it showed that perceived barrier towards evidence-based nursing practice was significantly negatively associated with the practice. The result of multiple regression showed that the barrier was a significant predictor of evidence-based nursing practice. As rated by the nurses in this study, majority of them perceived organizational factors as a major barrier followed by quality of research, communicational factors and individual factors as the least one. Among the four factors, quality of research where statement of the research has not been replicated was rated as the highest barrier ($M$ = 3.21), whereas individual factor (the nurse was unaware of the research) was rated as the least barrier ($M$ = 1.91). Our results were consistent with those of other studies.[10,20,22-24] The findings of our study impose a greater impact on administrators and nurse managers that Nepalese nurses at tertiary level of care mostly perceive organizational factors as the major barriers. Moreover, trainings regarding research conduction and motivation to conduct research studies to validate their practice can help change the perceptions of nurses towards the barriers to implement evidence-based nursing practice.

In terms of implications, findings of this study showed a moderate level of evidence-based nursing practice, knowledge, attitude and perceived barriers. Nurses at all levels of care can improve their existing knowledge and attitude by showing their keen interests in evidences that support their practice by upcoming with their involvement in research activities and making the practice of giving rationale in every clinical decision they make. Moreover, nursing administrators can take measures to help nurses enhance their knowledge may be by establishing library in workplace, providing trainings and motivating staffs to do survey activities and support the ideas and innovations of nurses whenever necessary.

Our study was with a limitation. The study was conducted only in one hospital. Even though this hospital is the largest tertiary level hospital located in eastern part of country, generalization of the study results to other settings could be limited.

In terms of recommendations, future research should be in experimental design to examine the effectiveness of intervention in order to improve knowledge and practice of evidence-based nursing care. More than one setting of data collection is recommended to cluster on generalization of the findings.

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