

**EVIDENCE BASED PRACTICE AT POINT OF CARE AMONG HEALTH PERSONNEL  
IN A TEACHING HOSPITAL, BHARATPUR**Lecturer Asmita Shrestha<sup>\*1</sup> and Professor Raj Kumar Mehta<sup>2</sup><sup>1</sup>Charak Academy Pvt. Ltd, Pokhara, Nepal.<sup>2</sup>School of Nursing, Chitwan Medical College, Chitwan, Nepal.

Article Received on: 25/02/2024

Article Revised on: 15/03/2024

Article Accepted on: 04/04/2024



Lecturer Asmita Shrestha

Charak Academy Pvt. Ltd,

Pokhara, Nepal.

**ABSTRACT**

**Introduction:** Evidence-based practice (EBP) is the integration of the current best evidence with the clinical expertise in making decision about the care of individual. EBP is the gold standard for safe and compassionate health care. EBP is important to improve outcomes of the patient, family, clinician and organizations. The objective of the study was to identify the use, knowledge, attitude and perceived barrier of EBP among health personnel at point of care. **Methods:** A descriptive, cross sectional study design was used to assess the knowledge, attitude and perceived barrier of EBP among health personnel of a teaching hospital using stratified proportionate random sampling technique. A structured, self-administered questionnaire was used to collect the data. Obtained data was analyzed using descriptive statistics and inferential statistics. **Results:** Majority (72.3%) of health personnel use EBP at point of care though they had low knowledge regarding EBP (79.5%). More than half (56.2%) had positive attitude towards EBP. The greatest barrier was slow pace of publication of research reports/articles (62.5%), lack of authority to change patient care procedures (58.9%), inadequate facilities for implementation and not generalizable results to own setting (56.3% each), the relevant literature not compiled in one place (51.8%) and the nurse/doctors is isolated from knowledgeable colleagues (50.9%). **Conclusion:** The study concluded that majority of the respondents had low knowledge regarding EBP and more than half of the respondents had positive attitude towards EBP. The organization/setting related barriers were the highest ranked barriers. Therefore, it is essential to provide educational and training program regarding EBP to improve the knowledge, attitude and practice of EBP at point of care among health personnel.

**KEYWORDS:** Evidence-based practice (EBP), Knowledge, Attitude, Use of EBP, Perceived barrier and Point of Care.

**INTRODUCTION**

Evidence-based practice (EBP) is the integration of the current best evidence with clinical expertise in making decision about the care of individual patients.<sup>[1]</sup> EBP is important to improve outcomes of the patient, family, clinician and organizations.<sup>[2]</sup>

EBP is considered as a corner stone in the modern era of clinical practice.<sup>[3]</sup> As health personnel play a crucial role in the delivery of health care, they need to embrace new and innovative techniques to provide effective and best possible treatment to their patients. EBP is new paradigm in health care especially in developing countries like Nepal. So, becoming less familiar with EBP is not just an issue but a big challenge to Nepalese health personnel in order to standardize the health care practices.<sup>[4]</sup>

Health professionals perceived the barriers in implementing EBP such as lack of time, knowledge, autonomy, incentives, continuing education, motivation,

support, facilities, authority, accessibility and availability of evidences and complexity of research report.<sup>[4],[5]</sup> EBP is important part of the health care as it improves the quality of care, patient outcome, reduces cost of health care and standardize the profession. However, there are many barriers that affect the use of EBP at point of care. Hence, the study aims to study the knowledge, attitude and perceived barrier regarding EBP at point of care among health personnel.

**METHODOLOGY****Research Design**

Descriptive cross sectional design was used to assess the knowledge, attitude and perceived barrier of EBP among health personnel.

**Research Setting and Population**

The study was conducted in Chitwan Medical College Teaching Hospital (CMC-TH), Bharatpur, Chitwan, Nepal. The population of the study was 156 among

which nurses (BN/B.Sc.) were 65, medical officers were 31, residents (MD/MS and HIEM) were 48 and fellows (PCCM and Cardiology) were 12.

### Sampling

To estimate the sample size, Cochran's formula was used.

In the study, the required sample was  $n$ .

To calculate sample size,

At 95% Confidence Interval,  $Z_{\alpha/2} = 1.96$

$P = 50\%$  which is  $P = 0.50$  (prevalence of knowledge, attitude and perceived barrier of EBP is unknown)

$q = 1 - p = 1 - 0.5 = 0.5$

$d = 5\% = (0.05)$  maximum permissible error

$n$  = required sample size

$N = 156$  (total population)

Required sample size was calculated by using the following formula,

$$n_o = \frac{z^2 pq}{d^2} \text{ (Cochran, 1997)}$$

Hence, substituting the formula

$$n_o = \frac{(1.96 \times 1.96)(0.5)(0.5)}{(0.05)^2}$$

$$n_o = 384$$

Sampling frame (population) ( $N$ ) = 156

Adjusting the above sample size for a finite population

$$n = \frac{n_o}{1 + \frac{(n_o - 1)}{N}} \text{ (Cochran, 1997)}$$

$$= \frac{384}{1 + \frac{384 - 1}{156}}$$

$$= 111.30$$

$$= 112$$

The required sample size ( $n$ ) was 112

Where,

There were 65 nurses (BN/B.Sc.) which is 41.66% of 156 so, sample was 47

There were 31 medical officers which is 19.87% of 156 so, sample was 22

There were 48 residents (MD/MS and HIEM) which is 30.77% of 156 so, sample was 34

There were 12 fellows (PCCM and Cardiology) which is 7.69% of 156 so, sample was 9

Stratified proportionate random sampling technique was adopted for the selection of health personnel. Participants were randomly selected generating random numbers in Microsoft excel.

### Instrumentation

Structured, self-administered questionnaire was developed by researcher herself based on extensive literature review for the socio-demographic and job-related information, knowledge regarding EBP and attitude towards EBP. Barrier Scale developed by Funk *et al.*<sup>[6]</sup> was used to find out the perceived barrier of EBP.

Questions related to socio-demographic and job-related characteristics of participants included 14 items, questions related to knowledge regarding EBP included 18 items, rating scale related to the attitude towards EBP included 16 statements among which 8 were positive statement and 8 were negative statement. Barrier Scale contained 28 items including subscales; health personnel, research, organizational/setting and communication/presentation subscale.

The validated instrument was pretested among 30 health personnel in College of Medical Sciences (CMS), Bharatpur to test the feasibility of the instrument. After pretesting the instrument, necessary modification was done. Reliability of the self-developed instrument was tested by item analysis using the formula.

Difficult index =  $(H+L)/N \times 100$  and

Discrimination index =  $2(H-L)/N$

Reliability of barrier scale is 0.84 to 0.96 and the subscales adopter (health personnel), organization (setting), communication (presentation), innovation (research) cronbach's alpha values are 0.80, 0.80, 0.72 and 0.65 respectively.<sup>[7]</sup> Prior to data collection, ethical approval was obtained from Chitwan Medical College Institution Review Committee (CMC-IRC), Chitwan. Written informed consent was taken from each respondent prior to data collection. Confidentiality was maintained by giving code number and not disclosing the information for the purpose other than research. Respondents' dignity was maintained by giving right to reject or discontinue from the study at any time. Data was collected by researcher during the period 11<sup>th</sup> August to 6<sup>th</sup> September, 2019. The collected data was organized, coded and entered into Statistical Package for Social Science (IBM SPSS) version 20. Data was analyzed using descriptive statistics (frequency, percentage, mean, median and standard deviation) and inferential statistics (chi square test).

## RESULTS

Table 1: Respondents' Socio-demographic Characteristics.

Variables	Frequency	Percentage
<b>Age in years</b>		
< 25	20	17.9
25-30	79	70.5
> 30	13	11.6
<i>Median- 26, IQR= Q3- Q1= 28-25, min= 22, max= 40</i>		
<b>Sex</b>		
Male	56	50
Female	56	50
<b>Ethnicity</b>		
Brahmin	61	54.5
Janajati	36	32.1
Chhetri	15	13.4
<b>Religion</b>		
Hindu	100	89.3
Non-hindu	12	10.7
<b>Marital status</b>		
Married	31	27.7
Unmarried	81	72.3
<b>Qualification</b>		
Bachelors	103	92
Masters	9	8

n=112

Table 1 shows socio-demographic characteristics of respondents. Majority (70.5%) of the respondents were between 25-30 years with the median age 26 years, Q<sub>1</sub> 25 years and Q<sub>3</sub> 28 years. Since age distribution was not symmetrical, median is used. Half of the respondents

(50%) were male and other half (50%) were female. More than half (54.5%) were Brahmin. Majority (89.3%) of the respondents follow hindu religion. Most of the respondents (72.3%) were unmarried. Majority (92.0%) of the respondents had completed their bachelors.

Table 2: Respondent's Job related Characteristics.

Variables	Frequency	Percentage
<b>Profession</b>		
Nurse	47	42
Doctor	65	58
<b>Designation</b>		
Staff nurse	19	17
Senior staff nurse	18	16.1
Nursing officer	10	8.9
Medical officer	22	19.6
Resident	34	30.4
Fellow	9	8
<b>Working Area</b>		
Emergency	18	16.1
General medicine	24	21.4
General surgery	36	32.1
Critical care	34	30.4
<b>Work experience (in year)</b>		
≤ 1	47	42
1-5	45	40.1
> 5	20	17.9
<b>Attended training regarding EBP</b>		
Yes	59	52.7
No	53	47.3
<b>Gained research experience</b>		
Yes	73	65.2

No	39	34.8
<b>Frequency for searching information regarding EBP</b>		
Often	39	34.8
Regularly	24	21.4
Occasionally	45	40.2
Never	4	3.6
<b>Availability of resources regarding EBP</b>		
Yes	50	44.6
No	62	55.4

n=112

Table 2 represents job related characteristics of the respondents. Most of the respondents (58.0%) were doctors and 30.4% were residents. More than a quarter (32.1%) of respondents were working in general surgery department. Most of the respondents (42.0%) had ≤1 year of work experience. More than half (52.7%) of the respondents had attended research training. Majority (65.2%) of the respondents had gained research experience. Most of the respondents (40.2%) occasionally look for information related to EBP. More than half (55.4%) of the respondents says that there is no resources available in their hospital related to EBP.

**Table 3: Use of EBP by Respondents at Point of Care.**

Use	Frequency	Percentage
Yes	81	72.3
No	31	27.7
Total	112	100

n=112

Table 3 shows the use of EBP at point of care by the respondents. Majority (72.3%) of the respondents use EBP at point of care.

**Table 4: Respondent’s Level of Knowledge Regarding EBP.**

Knowledge	Frequency	Percentage
High (≥75%)	0	0
Moderate (50-75%)	23	20.5
Low (<50%)	89	79.5
Total	112	100

n=112

Table 4 shows the level of knowledge regarding EBP of the respondents. Majority (79.5%) of the respondents had low knowledge regarding EBP.

**Table 5: Respondent’s Level of Attitude towards EBP.**

Attitude	Frequency	Percentage
Positive (≥57)	63	56.2
Negative (<57)	49	43.8
Total	112	100

n=112

Median score= 57, IQR=  $Q_3 - Q_1 = 62 - 52.25$ , minimum-40, maximum-76.

Table 5 shows the level of attitude towards EBP among the respondents. Most of the respondents (56.2%) had positive attitude towards EBP.

**Table 6: Association between Respondent’s Level of Knowledge Regarding EBP and Socio-demographic and Job related Characteristics.**

Variables	Level of Knowledge		$\chi^2$	p-value
	Moderate	Low		
	No. (%)	No. (%)		
<b>Age in years</b>				
< 25	4 (20.0)	16 (80.0)	0.20 €	1.00 €
25-30	17 (21.5)	62 (78.5)		
>30	2 (15.4)	11 (84.6)		
<b>Qualification</b>				
Bachelor	23 (22.3)	80 (77.7)	-	0.2
Master	0 (0.0)	9 (100.0)		
<b>Profession</b>				
Nurse	10 (21.3)	37 (78.7)	0.027	0.869
Doctor	13 (20.0)	52 (80.0)		
<b>Work experience (in year)</b>				
≤ 1	11 (23.4)	36 (76.6)	1.041	0.594
1-5	10 (20.8)	38 (79.2)		
>5	2 (11.8)	15 (88.2)		
<b>Working area</b>				

Emergency	2 (11.1)	16 (88.9)	1.19 €	0.79 €
General medicine	5 (20.8)	19 (79.2)		
General surgery	8 (22.2)	28 (77.8)		
Critical care	8 (23.5)	26 (27.0)		
<b>Frequency for searching information regarding EBP</b>				
Often	8 (20.5)	31 (79.5)	3.54 €	0.28 €
Regularly	2 (8.3)	22 (91.7)		
Occasionally	12 (26.7)	33 (73.3)		
Never	1 (25.0)	3 (75.0)		
<b>Attended training</b>				
Yes	10 (16.9)	49 (83.1)	0.983	0.322
No	13 (24.5)	40 (75.5)		
<b>Gained research experience</b>				
Yes	15 (20.5)	58 (79.5)	0	0.997
No	8 (20.5)	31 (79.5)		
<b>Resources related to EBP</b>				
Yes	10 (20.0)	40 (80.0)	0.016	0.9
No	13 (21.0)	49 (79.0)		

n=112

Significance level at 0.05

€ Fisher Exact Test

Table 6 shows the association between level of knowledge and socio demographic characteristics. There is no significant association between level of knowledge and age, qualification, profession, work experience,

working area, frequency for searching information regarding EBP, training, research experience, and resources related to EBP.

**Table 7: Association between Respondent's Level of Attitude towards EBP and Socio-demographic and Job-related Characteristics.**

Variables	Level of Attitude		$\chi^2$	p-value
	Positive	Negative		
	No. (%)	No. (%)		
<b>Age in years</b>				
<25	7 (35.0)	13 (65.0)	4.898	0.086
25-30	47 (59.5)	32 (40.5)		
>30	9 (69.2)	4 (30.8)		
<b>Qualification</b>				
Bachelor	55 (53.4)	48 (46.6)	-	0.08 €
Master	8 (88.9)	1 (11.1)		
<b>Profession</b>				
Nurse	20 (42.6)	27 (57.4)	6.174	0.013
Doctor	43 (66.2)	22 (33.8)		
<b>Work experience (in year)</b>				
≤1	23 (48.9)	24 (51.1)	2.526	0.283
1-5	28 (58.3)	20 (41.7)		
> 5	12 (70.6)	5 (29.4)		
<b>Working area</b>				
Emergency	11 (61.1)	7 (38.9)	1.051	0.789
General medicine	12 (50.0)	12 (50.0)		
General surgery	22 (61.1)	14 (38.9)		
Critical care	18 (52.9)	16 (47.1)		
<b>Frequency for searching information regarding EBP</b>				
Often	22 (56.4)	17 (43.6)	1.91 €	0.61 €
Regularly	15 (62.5)	9 (37.5)		
Occasionally	25 (55.6)	20 (44.4)		
Never	1 (25.0)	3 (75.0)		
<b>Attended training</b>				
Yes	38 (64.4)	21 (35.6)	3.371	0.066

No	25 (47.2)	28 (52.8)		
<b>Gained research experience</b>				
Yes	42 (57.5)	31 (42.5)	0.14	0.708
No	21 (53.8)	18 (46.2)		
<b>Resources related to EBP</b>				
Yes	31 (62.0)	19 (38.0)	1.213	0.271
No	32 (51.6)	30 (48.4)		

Significance level at 0.05

€ Fisher Exact Test

Table 7 shows the association between level of attitude towards EBP and socio demographic characteristics. There is significant association between level of attitude towards EBP and profession ( $p = .013$ ). There is no

significant association between level of attitude towards EBP and age, work experience, working area, frequency for searching information regarding EBP, training, research experience, and resources related to EBP.

**Table 8: Mean Score of Different Domain of Perceived Barrier to Use of EBP among Respondents.**

Domain	No. of Items	Maximum Possible Score	Obtained Range	Mean $\pm$ SD	Mean Percentage
Health Personnel	8	24	8-16	10.84 $\pm$ 2.063	45.16
Research	6	18	6-12	8.61 $\pm$ 1.812	47.83
Organization/Setting	8	24	8-16	11.83 $\pm$ 2.211	49.29
Presentation/Communication	6	18	6-12	8.61 $\pm$ 1.650	47.83
Total	28	84	28-55	39.91 $\pm$ 6.378	47.51

Table 8 illustrates four domains of the perceived barrier to use of EBP in which they reported high score on organization/setting subscale (49.29%) and lowest score on health personnel subscale (45.16%). The mean score of organization/setting and health personnel subscale was (11.83  $\pm$  2.211) and (10.84  $\pm$  2.063) respectively.

## DISCUSSION

As self-reported by the health personnel, majority (72.3%) of health personnel use EBP at point of care. Majority of doctors (76.9%) and nurses (66.0%) reported that they use EBP at point of care. This shows that the health personnel provide good care to the clients which are evidence-based which is contradictory with the findings of a study in Southwest Ethiopia by Dereje et al. (2019)<sup>[8]</sup> that shows that 51.8% use EBP. This discrepancy may be due to the setting where the study was conducted. Although the self-reported data about use of EBP is high but the health personnel lack adequate knowledge regarding EBP. Ideally, without good knowledge, the practice cannot be good. With high self-reporting of EBP and low knowledge of the same, it can be inferred that the health personnel have over rated their performance at point of care and they are in general, confused about EBP.

Likewise, the study revealed majority (79.5%) had low knowledge regarding EBP which is a miserable condition as it may directly affect the patient care. Among the health personnel who had low knowledge regarding EBP, 58.4% were doctors and 41.6% were nurses making nurses more knowledgeable on EBP in contrast to doctors. The finding is consistent with a study in India by Bhor et al. (2019)<sup>[9]</sup> shows that 51.3% medical private practitioners had poor knowledge regarding EBP.

Similarly, a study in Iran by Haschesu et al. (2019)<sup>[10]</sup> shows knowledge of residents about EBP was low. Although, the knowledge regarding EBP of nurses is better than the doctors, they are of undergraduate level. Nurses who have had theory education and research practice during their academic life were lacking in the practice of research due to factors such as time constraints in their jobs, fund, setting, etc. In case of doctors, even with the inclusion of research in their academic curriculum, they were not provided with in-depth knowledge regarding EBP and are not exposed to research practice in undergraduate level. This concludes that the knowledge of doctors regarding EBP is low, but they have overrated their practice.

The study also revealed that more than half (56.2%) had positive attitude towards EBP among which 68.3% were doctors and 31.7% were nurses. It shows that the health personnel had positive attitude towards EBP despite of low knowledge. This means that if the health personnel are provided with inservice education, training or workshops, it will enhance their knowledge regarding EBP as they have positive attitude towards EBP. The finding is consistent with a study done in India by Manjula et al. (2018)<sup>[11]</sup> shows majority had positive attitude towards EBP. The attitude of the health personnel towards EBP is influenced by the educational environment, setting of the hospital, research practice, resources, etc. The study sample and the tool used to assess the attitude differ in various studies which may cause variation in the result of the study.

In addition, association was measured between level of attitude towards EBP and age, education, profession, work experience, working area, frequency for searching

information regarding EBP, training, research experience, and resources related to EBP. A significant association was seen between level of attitude and profession indicating the profession may influence the attitude of the health personnel towards EBP at point of care. The satisfactions and inconveniences experienced while working and applying either evidence-based or experienced-based practice could influence the attitude towards EBP. The finding is inconsistent with a study by Ammouri *et al.* (2014)<sup>[12]</sup> which shows that years of experience, academic qualification and years of last academic achievement had significant association with EBP knowledge, attitude and practice ( $p < 0.01$ ,  $p < 0.05$ ). This may be due to use of different tool in the study. This difference may be due to the setting, sample size and qualification of the health personnel in the study.

The study revealed that the organization/setting subscale related barriers were the highest ranked barrier followed by research subscale, presentation/communication subscale and health personnel subscale. This signifies that the organization/setting related factors such as facilities for implementation, authority to change practices, cooperation and support of health care team, etc. must be more emphasized to improve EBP. The findings of the study is consistent with a study in Nepal by Paudel & Lawot (2018)<sup>[4]</sup> that shows organization related barrier as top barrier followed by communication, research and nurse. The study revealed that the greatest barrier from organization/setting subscales was the nurse/doctor does not feel s/he has enough authority to change patient care procedures (58.9%) followed by the facilities are inadequate for implementation and the nurse/doctor's perception that results are not generalizable to own setting (56.3% each), from research subscale was the slow pace of publication of research reports/ articles (62.5%), from presentation subscale was the relevant literature is not compiled in one place (51.8%) and from health personnel subscale was the nurse/doctors is isolated from knowledgeable colleagues with whom to discuss the research (50.9%).

## CONCLUSION

Based on the findings, it is concluded that the health personnel have overrated their practice regardless of having low knowledge regarding EBP. However, more than half of the health personnel had positive attitude towards EBP and the organization/setting related barriers were the highest ranked barriers. Therefore, an educational and training program regarding EBP should be planned and implemented by hospital management thus, improving the knowledge, attitude and practice of EBP at point of care among health personnel.

## REFERENCES

1. Sackett DL, Rosenberg WMC, Gray JA, Haynes bhaynes@mcmaster, ca., Richardson WS. Evidence based medicine: What it is and what it isn't. *British Medical Journal Clinical Research*, 1996; 312(7023): 71-72.

2. Journey to evidence-based healthcare. Reflection on nursing leadership. <https://www.reflectionsonnursingleadership.org/features/more-features/journey-to-evidence-based-healthcare>
3. Yahui HC, Swaminathan N. Knowledge, attitudes, and barriers towards evidence-based practice among physiotherapists in Malaysia. *Hong Kong Physiotherapy Journal*, 2017; 37: 10-8.
4. Paudel K, Lawot I. Perceived barriers to use of evidence based practices among nurses of a teaching hospital. *IQSR Journal of Nursing and Health Science*, 2018; 7(2): 29-35.
5. Binila S, Babu NM, Soumya S. Perceived barriers in implementation of evidenced based practice in health care facilities among health professionals. *Indian Journal of Research*, 2016; 5(1): 24-25.
6. Funk SG, Champagne MT, Wiese RA, Tornquist EM. BARRIERS: The barriers to research utilization scale. *Applied Nursing Research*, 1991; 4(1): 39-45.
7. Athanasakis E. Nurses' research behavior and barriers to research utilization into clinical nursing practice: A closer look. *International Journal of Caring Sciences*, 2013; 6(1).
8. Dereje B, Hailu E, Beharu M. Evidence-based practice utilization and associated factors among nurses working in public hospitals of Jimma zone Southwest Ethiopia: A cross sectional study. *General Medicine: Open Access*, 2019; 7(1): 1-10.
9. Bhor KB, Shetty V, Garcha V, Vinay V, Nimbalkar GC. Knowledge, attitude, and perceived barriers toward evidence-based practice among dental and medical academicians and private practitioners in Pune: A comparative cross-sectional study. *Journal of Indian Association of Public Health Dentistry*, 2019; 17(1): 49-53.
10. Haschesu PR, Gavvani VZ, Salahzadeh Z, Ehteshami A, Pira Z, Kasaei M, Rezazadeh E. A study of resident's attitude, knowledge and barriers towards the use of evidence based medicine. *International Journal of Health System and Disaster Management*, 2019; 1(1): 38-42.
11. Manjula R, Srivastava AK, Dorle AS. Evidence based practice: knowledge, attitude and practice among undergraduate and postgraduate medical students of a medical college in North Karnataka, India. *International Journal of Community Medicine and Public Health*, 2018; 5(6): 2411-2415.
12. Ammouri AA, Raddaha AA, Dsouza P, Geethakrishnan R, Noronha JA, Obeidat AA, Shakman L. Evidence-based practice: Knowledge, attitudes, practice and perceived barriers among nurses in Oman. *Sultan Qaboos University Medical Journal*, 2014; 14(4): 537-545.