Research Article

# Evidence-based Practice Utilization and Associated Factors among Nurses Working in Public Hospitals of Jimma Zone Southwest Ethiopia: A Cross Sectional Study

**Bikila Dereje\*, Endalew Hailu and Mesfin Beharu**

*School of Nursing and Midwifery, Jimma University, Ethiopia*

## ABSTRACT

**Background:** Evidence-based Practice is the application of the best scientific evidence for clinical decision making in professional patient care. Most of the time, Nursing care practice in Ethiopia is based on experience, tradition, intuition, common sense and untested theories. There is lack of information on the level of utilization of evidence based practice by nurses in Ethiopia.

**Methods:** An institutional based cross sectional study design was employed from March 10 to April 1, 2018. Stratified random sampling was deployed to select 270 respondents. Data was collected using a pretested, structured and self-administered questionnaire and in-depth interview guide. Data were entered using Epi-data version 3.1 and analyzed by SPSS version 20. Bivariate and multivariable logistic regressions were under taken to identify the associated factors.

**Results:** In total, 253 returned questionnaires which makes response rate of 93.7%. More than half 131(51.8%) of respondents used evidence-based practice. Further the study indicated that, being head nurse was 5.2 times AOR=5.227, 95%CI=(1.252, 21.819) more likely used EBP than staff nurses. Being knowledgeable about EBP was 2.1 times AOR=2.084, 95%CI=(1.118,3.886) more likely used EBP than those not knowledgeable about EBP.

**Conclusion:** The utilization of EBP among nurses working in public hospitals of Jimma zone was 51.8%. Nevertheless, only 16.5% of respondents often utilized EBP in their clinical practice.

**Keywords:** Evidence based practice; Nurse; Ethiopia

## INTRODUCTION

Evidence based-practice (EBP) is the application of the best scientific evidence in clinical decision-making by integrating clinical experience and incorporating patient values and preferences, in the practice of professional patient care [1,2]. It is about making decisions through the conscientious, explicit and judicious use of the best available evidence from multiple sources [3,4].

EBP is used across numerous professions as an approach to professional practice and it is rapidly growing in the fields of nursing [5]. In clinical decision making using EBP is a vital and an effective way for nurses to improve quality of patient care [6]. A systematic review studies promoting EBP involving face-to-face contact led to significant effects on patient benefits and nurses' EBP knowledge. EBP is a systematic process of reviewing the best available research evidence and then incorporating clinical experience and patient preferences into the combination [7]. Evidence exists for best practices in: assessment of patient conditions, diagnosis of patient problems, planning patient care, interventions to improve the patient's function, condition, & evaluation of patient responses provided clinical care [8]. Nurses' beliefs in the value of EBP improving care quality and clinical outcomes and in the degree to which clinical nursing practice and their own care is based on evidence are the foundation on which nurses' integration of EBP into clinical care delivery [9]. The rate and extent whereby EBP adopted are influenced by the nature of the evidence-based topic and the manner in which the evidence-based knowledge is communicated to members of a social system/ context of practice [10].

### Statement of the problem

The EBP paradigm has been embraced by healthcare professionals

**Citation:** Dereje B, Hailu E, Beharu M (2019) Evidence-based Practice Utilization and Associated Factors among Nurses Working in Public Hospitals of Jimma Zone Southwest Ethiopia: A Cross Sectional Study. Adv Pharmacoepidemiol Drug Saf 7:321. doi:  10.24105/2327-5146.7.321

as an important means to improve quality of patient care, but its implementation is still deficient [11]. Much of the evidence used to guide nursing practice worldwide does not arise from findings arrived at through rigorous research studies [12].

Nurses were positive towards EBP, but only practiced it to a small extent [13] and even though nurses understand EBP, but nevertheless of them choose not to value EBP for a many of reasons [9]. Even though research supports that, EBP promotes high value healthcare, nurses do not consistently implement EBP. Nurses had a moderate amount of knowledge about EBP, and very few nurses were utilized EBP which indicates EBP was not the standard of care throughout the globe [12-16]. This implies barriers to utilizing EBP remained high for nurses; as a result, nurses weren't consistently using EBP [17].

Moving from tradition-based to evidence-based care delivery is no small challenge. Integrating evidence into daily clinical practice and decision making has many challenges include time limitations, inadequate EBP knowledge or education, organizational resistance, heavy workloads, insufficient support from colleagues, shortage of personnel and resources that facilitate EBP, and a deficiency of strong studies on the efficiency of EBP utilization in nursing practice [10,18,19].

Also numerous barriers exist that create a gap between new evidence and utilization of that evidence in patient care. Most frequently perceived barriers were physicians will not cooperate with EBP utilization, the nurse is unwilling to change/try new ideas, the nurse does not have time to read research, the nurse does not feel she/he has enough authority to change patient care procedures, and lack of institutional or financial support; not able to understand research reports; and the dependence of nurses on doctors and managers in making changes in clinical practice [19,20].

There were five major organizational barriers which emerged from the selected studies: workload, other staff/management not supportive of EBP, lack of resources, lack of authority to change practice, and a workplace culture resistant to change. Even for an individual who is motivated and competent in the use of EBP, all of these barriers will impact their ability to increase and maintain their use of EBP in the workplace [21]. Nursing students possessed moderate knowledge towards EBP and had no opportunity access to internet and journals at their workplace for the purpose of obtaining EBP information [22].

Unlike western country, EBP is not widely embraced in low and middle income countries, and the methods of EBP is something relatively new and often overwhelming challenge for many healthcare organizations. In Africa for example, EBP is being emphasized and being advocated for nurses in countries like South Africa, Ethiopia, Kenya, Nigeria, Egypt, Botswana, Burundi and Malawi [23-26]. Yet, the development of EBP in nursing practice is in its infancy. For example, a recent study from Nigeria reported that EBP is not widely developed in context of country's health care system [23]. EBP in Africa is remaining in challenge. One reason for this challenge is Africa lag behind in research and lack of funds [26]. Developing countries have limited resources, as a result poor access to information makes endeavor near impossible for health professionals working with vulnerable communities in low-income [27].

According to studies reported, low utilization of EBP by nurses and poor quality of patient care outcome had positive relationships. In developing country, majority of nurses were strongly challenged to integrate and use EBP in their clinical decision making process. Lack of ability to integrate and use the up to dated information/

current evidence in clinical practice is a risk for quality of patient care outcome [6,28-31].

EBP utilization has the desirable outcomes in nursing care. It will be significant for nursing and health care professionals to provide quality of care in meeting the needs of patients and families as a whole Specifically it improves patient outcomes, decrease health care costs, which is a priority of governmental and funding agencies zone [31]. Most of the time, Nursing care practice in Ethiopia is based on experience, tradition, intuition, common sense and untested theories. To our knowledge, there have been few studies on the level of EBP utilization by nurses in Ethiopia. There is also minimal of study done on the level of EBP utilization in Jimma zone [24,29]. Therefore, the aim of this study was to assess Evidence-Based practice Utilization and associated factors among nurses working in Jimma zone public hospitals, Southwest Ethiopia.

## METHODS

### Study design and period

An institutional based cross sectional study design using a mixed method approach was employed from March 10 to April 1, 2018 in South west Ethiopia.

### Source population and study population

All nurses and sampled nurses working in Public Hospitals of Jimma Zone were sources and study population respectively.

### Inclusion and exclusion criteria

Nurses with ≥ 6 months' work experiences and willing to participate in the study were included and who were on leave (sick, annual and maternal leave) during data collection period were excluded.

### Sample size and sampling technique

The sample size for this specific study was calculated using formula for a population proportion for known target population. By adding 10% non-response rate the final sample size was 270. For qualitative study, 12 key informants were involved. Stratified random sampling technique was deployed to select 270 respondents from all public hospitals of Jimma Zone (Figure 1). The Human Resource list of nurses in each hospital was used as a sampling frame to identify respondents. We assumed that all nurses working in the same hospital were homogenous regarding utilization of EBP.

For qualitative study purposive sampling was applied to select key informants. Then key informants were selected based on certain criteria. The inclusion criteria were being nurse managers (Nursing service directors, Supervisors, and head nurses) to get depth information. Based on that, nurse managers who were on current role at the hospital and those who have interest to participate in the study were included. Accordingly, total of 12 key informants were selected.

### Data collection tools

For quantitative, data were collected using a pre-tested, structured self-administered questionnaire, which was adapted from different studies [24,28,30-37]. The quantitative study tools contain six parts with 60 items.

Qualitative data involved interviews with key informants selected to explore their perspectives. Interview guides were used to get information concerning utilization of EBP and associated factors from the nurse's point of view. Detail information was explored with complete picture of utilization of EBP and associated factors. Two open ended questions were prepared with their probes. The
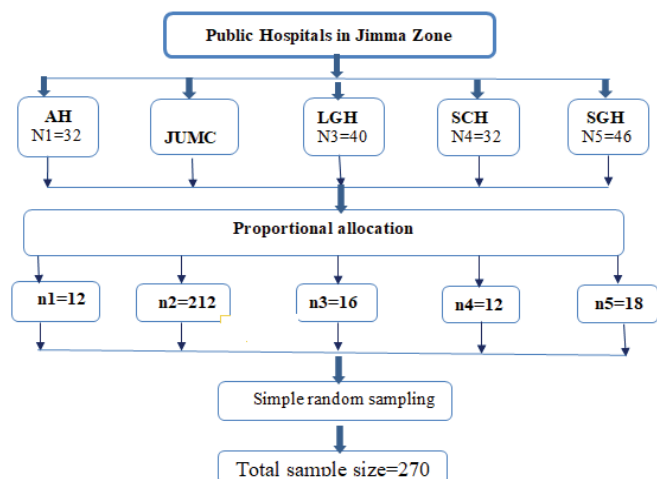
**Figure 1:** Schematic presentation of the sampling technique of study participants for utilization of evidence based practice and associated factors among nurses working in public hospitals of Jimma zone, Southwest Ethiopia, 2018.

trustworthiness of the in depth interview guide was checked by experts in the area of study.

### Data collection procedures

Quantitative data were collected from nurses by eight BSc nurses facilitators through distributing structured self-administered questioner for the nurses after explaining the purpose and technique of filling the questionnaire. Continuous follow-up and supervision was made by facilitators and Principal Investigator (PI) throughout the data collection period.

Qualitative data was collected by PI from key informants. Key informants took approximately for in-depth interview based on purposive sampling. Each in depth interview was taken 30-35 minutes. Notes and audio recorder were used for recording the information obtained from key informants.

### Data quality control assurance

Quantitative data was checked daily for completeness and consistency throughout the data collection period by facilitators and PI, then each completed questionnaire was given a unique code. Prior to data collection pre-test was conducted on 5% [14] of the total sample size in order to check the reliability of the instrument, to estimate the time needed to collect data and to modify the questionnaire accordingly. The tool was checked for reliability (internal consistency) using the Cronbach's alpha coefficient which was 0.78 and time taken for each questionnaire were 30 minutes. One day training was provided for facilitators by the PI. For qualitative data the individual interviewee was interviewed separately to prevent the contamination of information.

### Data processing and analysis

The filled data was entered in to Epidata version 3.1. Then it was exported to statistical Package for Social Sciences (SPSS) version 20 for analysis. Descriptive statistic (frequency, percent and mean) was computed to summarize the data. Binary logistic regression was used to determine the association between outcome variable and predictors. Statistical tests at 95% CI were made. Initially bivariate logistic regression analysis was carried out to see the association between the outcome and each predictor, and then variables with P-value less than 0.25 were selected to be a candidate for multivariable logistic regression analysis. In multivariable

logistic regression analysis, variables having P-values <0.05 were used to declare statistical significance. Adjusted odds ratios (AOR) together with their corresponding 95% confidence intervals were determined to measure the strength and level of significance of the association. The Hosmer-Lemeshow goodness of fit was considered to check model fitness. The result of this study was displayed in Tables 1-5 and Figures 1-3.

For qualitative study based on notes, memos were written. Each interview was transcribed and translated to English by cross checking both audio record and the note. Transcripts of each interview was read and re-read in order to gain an understanding of the whole situation and then re-read slowly to determine its significant features. The data was classified into analytic units and themes were developed in to utilization of EBP, barriers and facilitators. The accuracy of transcripts was checked by repetitive audiotape and by reading transcripts. The final result was presented in narratives and triangulated to supports the quantitative result.

## ETHICAL CONSIDERATIONS

Ethical approval was obtained from Institutional Review Board (IRB) Institute of Health of Jimma University. Following the approval by IRB, Official letter of co-operation and support was written to public hospitals in Jimma Zone from Institute of health science. After getting permission from these hospitals, ethical issues within the study were taken into consideration during the study. Facilitators were informed about the study, and then written informed consent was obtained from the study participants. Confidentiality was assured for all the information provided, no personal identifiers (anonymity) used on the questionnaires.

## RESULTS

### Socio-demographic characteristics participants

Among the total 270 distributed questionnaires, 253 completed questionnaires were returned, which makes response rate of 93.7%. Regarding socio-demographic, 139 (54.9%), 95 (37.5%) and 94 (37.2%) of respondents were males, fall between age group of 25-29 years, and between 1-5 years' work experience respectively. Almost half of respondents 129 (51.0%) were married, less than half of respondents 101(39.9%) were Oromo by ethnicity and 87 (34.4%) orthodox by religion. For in-depth interview 12 key inforyEARSmants were involved in the study (Table 1).

## QUANTITATIVE RESULTS AND FINDINGS

### Utilization of evidence-based practice

More than half of respondents, 131 (51.8%) used EBP (Figure 2). Regarding level of utilization of EBP, among those used EBP, 58 (23.1%), 31 (12.2%) and 42 (16.5%) of them sometimes, usually and often used EBP respectively.\

### Factors Associated With Utilization of EBP

#### Individual barriers to utilization of evidence-based practice

Less than half, 80 (31.6%) and 80 (31.6%) respondents agreed that lack of autonomy to change practice and inability to properly interpret the results of research were barriers to utilization of EBP respectively.

Organizational barriers to utilization of EBP

Nearly half, 123 (48.6%) and more than half, 141 (55.7%), 158 (62.5%), and 134 (53.0%) of respondents agreed that insufficient

**Table 1:** Distribution of respondents by their socio demographic characteristics, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253), other=Wakefata, none.

| Socio-demographic characteristics | Years | For quantitative | | For qualitative | |
|---|---|---|---|---|---|
| | | Frequency (n=253) | Percent (%) | Frequency (n=12) | Percent (%) |
| Age | 20-24 year | 68 | 26.9 | - | - |
| | 25-29 year | 95 | 37.5 | 6 | 50 |
| | 30-34 year | 50 | 19.8 | 5 | 41.7 |
| | 35-39 year | 33 | 13 | 1 | |
| | 40-44 year | 7 | 2.8 | - | - |
| Sex | Female | 114 | 45.1 | 5 | 41.7 |
| | Male | 139 | 54.9 | 7 | 58.3 |
| Marital status | Single | 124 | 49 | 5 | 41.7 |
| | Married | 129 | 51 | 5 | 58.3 |
| Ethnicity | Oromo | 101 | 39.9 | 6 | 50 |
| | Amhara | 92 | 36.4 | 3 | 25 |
| | Tigre | 17 | 6.7 | - | - |
| | Gurage | 21 | 8.3 | - | - |
| | Other | 22 | 8.7 | 3 | 25 |
| Religion | Orthodox | 87 | 34.4 | 4 | 33.3 |
| | Muslim | 79 | 31.2 | 5 | 41.7 |
| | Protestant | 72 | 28.5 | 3 | 25 |
| | Catholic | 8 | 3.2 | - | - |
| | Other | 7 | 2.8 | - | - |
| Work experience | 1-5 year | 94 | 37.2 | 5 | 41.7 |
| | 6-10 year | 64 | 25.3 | 5 | 41.7 |
| | 11-15 year | 62 | 24.5 | 2 | 16.6 |
| | 16-20 year | 23 | 9.1 | - | - |
| | >20 year | 10 | 4 | - | - |
| Educational level | Diploma | 85 | 33.6 | - | - |
| | BSc | 168 | 66.4 | 9 | 75 |
| | MSc | ~ | ~ | 3 | 25 |
| Hospitals | Teaching hospital | 202 | 79.8 | 8 | 66.7 |
| | General hospitals | 51 | 20.2 | 4 | 33.3 |
| Unit ward | Medical-surgical | 130 | 51.4 | 6 | 50 |
| | Intensive care unit | 16 | 6.3 | 1 | |
| | Emergency unit | 41 | 16.2 | 1 | |
| | Pediatrics | 44 | 17.4 | 1 | |
| | Gynecology | 22 | 8.7 | - | - |
| | Others | - | - | 3 | 25 |
| Role at the hospital | Head nurse | 19 | 7.5 | 9 | 75 |
| | Staff nurse | 234 | 92.5 | - | - |
| | Others | - | - | 3 | 25 |
| Salary | <3653 ETB | 33 | 13 | - | - |
| | 3653-6488 ETB | 51 | 20.2 | 8 | 66.7 |
| | >6488 ETB | 5 | 2 | 4 | 33.3 |

time, heavy workload, insufficient resources at workplace and relevant literature is not available were identified as barriers for utilization of EBP respectively.

## Facilitators for utilization of evidence-based practice

More than half 147 (58.1%) of respondents were cited to "To M to G extent" as they perceived support from doctors. To M to G extent=to a moderate to great extent.

## Qualitative results findings

From qualitative results: What are factors which facilitating utilization of EBP? The 28 years old key informant said that "we have educated human power to use EBP and nurses are ready to help clients/patients." Majority of them said that "even if it is not enough sometimes there is training for some nurses, hospital protocols and guidelines." Some of them said that "there are experienced nurses/ colleague, doctors and other health professionals to support nurses in their clinical practice. Nurses managers are supporting nurses to
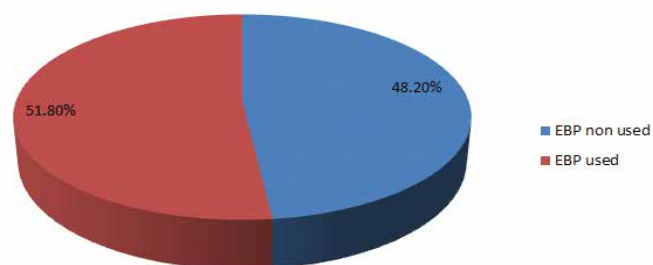
**Figure 2:** Respondents' utilization of evidence based practice, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253).



**Figure 3:** Facilitators for utilization of evidence based practice, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253).

give safe and modern care for patients." Most of key informants said that "most of nurses were ask doctors and colleagues during ward rounds while some nurses were ask for up to dated information to use in their clinical practice."

What are factors which hindering utilization of EBP? Majority of key informants reported barriers to utilization of EBP such as: insufficient resources (e.g. current literature; internet access; updated guidelines; computers); lack of financial support (incentives); closed minds (we have always done it this way); and lack of support (e.g. management, physicians).

The 29 years old key informant said that "nurses have no interest, they don't want to read and update themselves even they have no confidence." Most of them said that "no hospital library, updated guidelines, internet services, motivation, enough training and no enough computers for nurses to updating themselves." Almost half of them said that "there is no good communication between hospital managements and nurses, physicians and nurses and other health professionals and nurses." Others said that "there is no nurses' satisfaction, and some nurses have no interest and they not need to update themselves." The 30 years old man said that "there are times when I do not know things and I do not have even time to sit down."

From qualitative study, when asked; what do you say about utilization EBP in clinical practice? Among interviewed key informants, few of them said that "We have no information/exposure about utilization of EBP in clinical practice", while others said that "Utilization of EBP in clinical practice is good for patient's care improvement, it saves time and increase nurses satisfaction."

When asked; what do you say about utilization of EBP in your hospital by nurses? Few key informants said that "we don't know whether nurses used EBP" but rest of them said that "nurses directly or indirectly utilized EBP in clinical practice unless no patient improvement. Most of nurses used evidence from hospital protocols, guidelines and others asked information from senior staff nurses /colleagues and other health professionals like doctors."

How frequently nurses use EBP in your hospital? Most of key informants said that "most of nurses sometimes used EBP and some nurses often ask for up to dated information to use in their clinical practice and many of nurses sometimes used hospital protocols and guidelines."

### Bivariate and Multivariable Analyses of Factors Associated with Utilization of EBP

Utilization of EBP was assessed for its association with socio demographic characteristic, individual and organizational
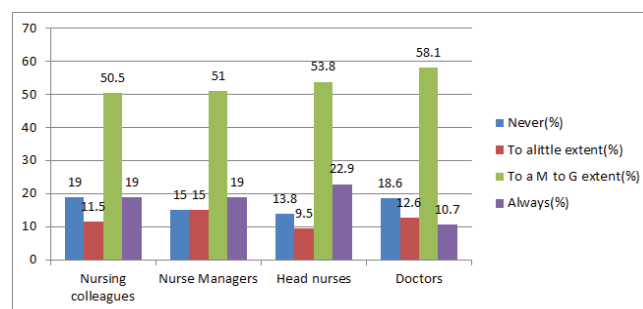
variables. Both bivariate and multivariable logistic regression analyses were done to see the association between outcome variable and predictors. All predictors were entered in to bivariate logistic regression and variables such as sex, marital status, hospital type, work unit, work experiences, educational level, current role at the hospital, knowledge about EBP, lack of autonomy to change practice, inadequate understanding of research terms, inability to understand statistical terms used in research, difficulty in judging the quality of research, inability to properly interpret the results of research, no confident in judging the quality of research, insufficient proficiency in English language, unjustified research conclusions to nursing and EBP has little benefits for nurses were selected to be candidate for multivariable logistic regression analysis (Tables 4 and 5).

In multivariable logistic regression analysis model; sex (p=0.005), hospital type (p=0.001), educational level (p=0.001), current role at the hospital (p=0.023), knowledge about EBP (p=0.021), lack of autonomy to change practice (p=0.049) and inability to properly interpret the results of research (P=0.025) were statistically associated with utilization of EBP (Tables 4 and 5).

Males were 2.4 times (AOR=2.401), 95% CI=(1.296,4.448) more likely used EBP than female nurses. Nurses working in teaching hospital were 4.8 times (AOR=4.798), 95% CI= [1.913,12.034) more likely used EBP than nurses working in non-teaching hospital. Having BSc educational level was 3.2 times (AOR=3.186), 95%CI= (1.634,6.210) more likely used EBP than having educational level of clinical nurse. Being head nurse was 5.2 times (AOR=5.227), 95% CI=(1.252,21.819) more likely used EBP than staff nurses. Being knowledgeable about EBP increase the chance of using EBP by 2.1 times (AOR=2.084), 95% CI=(1.118,3.886) when compared with not knowledgeable about EBP (Table 4).

Nurses who disagreed to lack of autonomy to change practice and inability to properly interpret the results of research 2.5 times (AOR=2.590) [95%CI=[1.004, 6.679] and 4.2 times (AOR=4.282), 95%CI=(1.203,15.244) more likely utilized EBP than nurses those agreed, respectively (Table 5).

### DISCUSSION

In this study even though half of respondents used EBP in their clinical practice, only 23.1% and 16.5% of them sometimes and often used EBP respectively. This is inconsistent with the finding of South Korea 46% of nurses often utilized EBP [38] and Nigeria [39] where 55.5% and 30.9% of them sometimes and often used EBP respectively. This indicates that nurses working in current study area used EBP less likely than other countries. This might be related with absence of enough updated materials related to utilization of EBP and different health policy in current study area.

**Table 2:** Individual barriers to utilization of evidence based practice, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253).

| Variables | Mean (SD) |
|---|---|
| Lack of autonomy to change practice | 1.8103 ± 0.88840 |
| Inadequate understanding of research terms | 1.7668 ± 0.85737 |
| Inability to understand statistical terms used in research | 1.7866 ± 0.86482 |
| Difficulty in judging the quality of research | 1.8103 ± 0.86578 |
| Inability to properly interpret the results of research | 1.8142 ± 0.88701 |
| No confident in judging the quality of research | 1.8498 ± 0.85517 |
| Insufficient proficiency in English language | 1.6996 ± 0.80467 |
| EBP has little benefits for nurses | 1.6798 ± 0.73211 |
| The culture of my team is not receptive to EBP implementation | 1.8103 ± 0.70961 |
| Uncertainty to believe the results of the research working to nurses' practice | 1.8893 ± 0.69836 |

**Table 3:** Organizational barriers to utilization of evidence based practice, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253).

| Variables | Mean (SD) |
|---|---|
| Insufficient time at a workplace to implement EBP | 2.1700 ± 0.88122 |
| Heavy workload at a workplace to implement EBP | 2.2688 ± 0.88129 |
| Insufficient resources to implement EBP | 2.3913 ± 0.84106 |
| The relevant literature is not available | 2.2530 ± 0.86330 |
| Lack of authority in the work place to implement EBP | 2.0119 ± 0.86135 |
| Nurse is isolated from experienced colleagues with whom to discuss the research | 1.8458 ± 0.76373 |
| Physicians are not cooperative with the implementation | 2.0988 ± 0.86495 |
| Unjustified research conclusions to nursing | 1.8577 ± 0.76344 |
| Other staffs are not supportive of implementation | 2.0711 ± 0.84684 |
| Unclear implications of EBP for practice in nursing | 1.7945 ± 0.74884 |

But this finding is almost similar with the finding of TASH where 15.7% often used EBP [24]. This indicates that, still it is alarming that level of utilization of EBP is low. This might be related to nurses have been working in similar system. Most key informants said that "Nurses directly or indirectly utilized EBP in clinical practice unless no patient improvement."

This study revealed that, sex was AOR=2.401, 95%CI=(1.296,4.448) associated with utilization of EBP. This indicates that male nurses were 2.4 times more likely used EBP than female nurses. This might be related with male nurses have more opportunity to participate in training related with utilization of EBP than female nurses.

This study showed that, hospital type had AOR=4.798, 95%CI=(1.913,12.034) significant relationship with utilization of EBP. This is similar with study done in Egypt [39]. This indicates that nurses working in teaching hospitals were more likely used EBP than those working in non-teaching hospitals. This might be related with nurses working in teaching hospital have the opportunity to attend academic meeting, rounds, seminars, and regularly look for information, research or evidence to support their nursing practice [40].

This study revealed that, educational level was AOR=3.186, 95%CI=(1.634, 6.210) significantly associated with utilization of EBP. This is contrast with the study of Nigeria [38] in which professional qualification has no relationship with use of EBP but analogous with finding of study done in Israel [41]. This designates that nurses who had higher qualification were more likely used EBP than lower qualification. This might be due to the fact that the BSc level are more technologically inclined, thus enhancing searching strategies, or that they are more exposed to the incorporation of EBP in their curricula and teaching programmes.

This study demonstrated that, current role at the hospital was AOR=5.227, 95%CI=(1.252,21.819) significantly associated with utilization of EBP. This is inconsistent with study done in Israel in which role at the hospital was not significantly associated with utilization of EBP [40]. This suggests that head nurses were more likely used EBP than staff nurses. This might be related with head nurses have been opportunities to take workshop, train about EBP and as a result they have ability to integrate and use the up to dated information/ current knowledge in clinical practice.

This study revealed that, knowledge about EBP was AOR=2.084, 95%CI=(1.118,3.886) associated with utilization of EBP. This finding is inconsistent with the study of Nigeria where knowledge about EBP was not associated with utilization of EBP [39], but similar with finding of TASH [24]. This implies that those nurses who have knowledge about EBP were more likely used EBP than those have no knowledge. This might be related with having up to dated information about EBP through media, training or searching internet.

This study showed that, lack of autonomy to change practice and inability to properly interpret the results of research were associated AOR=2.590, 95%CI=(1.004, 6.679), and AOR=4.282, 95%CI=(1.203, 15.244) with utilization of EBP respectively. This is similar with study finding of Nepal [19]. This indicates that those who have autonomy to change practice and ability to properly interpret the results of research used EBP. This might be related with independently working and having adequate information about utilization of EBP.

This study indicated that, 48.6%, 55.7% and 62.5% of respondents agreed that insufficient time, heavy workload and insufficient resources at workplace were most reported barriers respectively. This findings are slightly lower than study findings of different countries for e.g. in Australia [41] heavy workload & insufficient time, in Iran [42] insufficient resources & heavy workload, in Nigeria [39] insufficient time at work place & inadequate resources, and in Egypt [40] nurses said that "My workload is too high" & insufficient time at work place were reported as barriers by majority of respondents. This indicates that nurses working in other countries reported barriers to utilization of EBP than nurses working in this study area. This might be related with having knowledge about barriers to utilization of EBP and year of work experience. Most of key informants said that "no hospital library, updated guidelines, internet services, enough training and no

**Table 4:** Multivariable logistic regression analyses of socio-demographic characteristics with utilization of evidence based practice, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253).

| Variables | Category | EBP use No (%) | EBP no use No (%) | COR (95%CI) | AOR (95%) |
|---|---|---|---|---|---|
| Sex | Male | 86 (34.0) | 53 (20.9) | 2.488 (1.497,4.136)* | 2.401 (1.296, 4.448)* |
| | Female | 45 (17.8) | 69 (27.3) | 1 | 1 |
| Marital status | Married | 75 (29.6) | 54 (21.4) | 1.687 (1.026, 2.773)* | 1.461 (0.794, 2.687) |
| | Single | 56 (22.1) | 68 (26.9) | 1 | 1 |
| Hospital type | Teaching hospital | 122 (48.2) | 80 (31.6) | 7.117 (3.285, 15.419)* | 4.798 (1.913, 12.034)* |
| | Non-teaching hospitals | 09 (3.6) | 42 (16.6) | 1 | 1 |
| Work unit | Intensive care unit | 13 (5.1) | 03 (1.2) | 4.333 (1.179, 15.926)* | 3.806 (0.840, 17.239) |
| | Emergency unit | 21 (8.3) | 20 (7.9) | 1.050 (0.520, 2.119) | 1.279 (0.548, 2.983) |
| | Pediatrics | 22 (8.7) | 22 (8.7) | 1.000 (0.505, 1.981) | 1.092 (0.490, 2.433) |
| | Gynecology | 10 (4.0) | 12 (4.7) | 0.833 (0.336, 2.064) | 0.806 (0.261, 2.487) |
| | Medical-surgical | 65 (25.7) | 65 (25.7) | 1 | 1 |
| Work experience | >20 year | 06 (2.4) | 04 (1.6) | 1.857 (0.492, 7.014) | 0.637 (0.148, 2.741) |
| | 16-20 year | 15 (5.9) | 08 (3.2) | 2.321 (0.898, 6.000) | 1.792 (0.584, 5.503) |
| | 11-15 year | 41 (16.2) | 21 (8.2) | 2.417 (1.243, 4.699)* | 1.533 (.692, 3.400) |
| | 6-10 year | 27 (10.7) | 37 (14.6) | 0.903 (.476, 1.716) | 0.625 (0.279, 1.399) |
| | 1-5 year | 42 (16.6) | 52 (20.6) | 1 | 1 |
| Educational level | BSc | 107 (42.3) | 61 (24.1) | 4.458 (2.526,7.863)* | 3.186 (1.634, 6.210)* |
| | Diploma | 24 (9.5) | 61 (24.1) | 1 | 1 |
| Current role | Head nurses | 15 (5.9) | 04 (1.6) | 3.815 (1.229, 11.386)* | 5.227 (1.252, 21.819)* |
| | Staff nurses | 116 (45.8) | 118 (46.7) | 1 | 1 |
| Knowledge | Knowledgeabge | 95 (37.6) | 61 (24.1) | 2.639 (1.565, 4.450)* | 2.084 (1.118,3.886)* |
| | Not knowledge | 36 (14.2) | 61 (24.1) | 1 | 1 |

**Table 5:** Multivariable logistic regression analyses of barriers with utilization of evidence based practice, in public hospitals of Jimma zone, southwest Ethiopia, 2018 (n=253).

| Variables | Category | EBP use No (%) | EBP not use No (%) | COR (95% CI) | AOR (95% CI) |
|---|---|---|---|---|---|
| Lack of autonomy to change practice | Disagree | 83 (32.8) | 45 (17.8) | 3.621 (2.010, 6.522)* | 2.590 (1.004,6.679)* |
| | Neutral | 21 (8.3) | 24 (9.5) | 1.718 (0.814, 3.625) | 1.203 (0.436, 3.319) |
| | Agree | 27 (10.7) | 53 (20.9) | 1 | 1 |
| Inadequate understanding of research terms | Disagree | 80 (31.6) | 49 (19.4) | 3.810 (2.044, 7.101)* | 0.813 (0.230, 2.870) |
| | Neutral | 30 (11.9) | 24 (9.4) | 2.917 (1.390, 6.121) | 1.764 (0.620, 5.017) |
| | Agree | - | 49 (19.4) | 1 | 1 |
| Inability to understand statistical terms used in research | Disagree | 80 (31.6) | 47 (18.6) | 3.475 (1.894,6.375)* | 0.879 (0.251, 3.079) |
| | Neutral | 27 (10.7) | 26 (10.2) | 2.120 (1.025, 4.386) | 0.900 (0.297, 2.729) |
| | Agree | 24 (9.5) | 49 (19.4) | 1 | 1 |
| Difficulty in judging the quality of research | Disagree | 84 (33.2) | 39 (15.4) | 7.348 (3.796,14.227)* | 2.723 (0.710, 10.447) |
| | Neutral | 30 (11.9) | 25 (9.9) | 4.094 (1.919, 8.733) | 1.649 (0.474, 5.738) |
| | Agree | 17 (6.7) | 58 (22.9) | 1 | 1 |
| Inability to properly interpret the results of research | Disagree | 86 (34.0) | 41 (16.2) | 7.225 (3.797,13.746)* | 4.282 (1.203,15.244)* |
| | Neutral | 27 (10.7) | 19 (7.5) | 4.895 (2.227, 10.756) | 3.698 (1.052,12.997) |
| | Agree | 18 (7.1) | 62 (24.5) | 1 | 1 |
| No confident in judging the quality of research | Disagree | 68 (26.9) | 46 (18.2) | 2.146 (1.188, 3.875)* | 0.690 (0.285, 1.67 |
| | Neutral | 32 (12.6) | 31 (12.3) | 1.498 (0.764, 2.938) | 1.167 (0.494, 2.756) |
| | Agree | 31 (12.3) | 45 (17.7) | 1 | 1 |
| Difficult to understand research published in English | Disagree | 81 (32.0) | 50 (19.8) | 3.069 (1.589, 5.928)* | 1.194 (0.465, 3.06 |
| | Neutral | 31 (12.3) | 36 (14.2) | 1.632 (0.783, 3.401) | 0.537 (0.209, 1.379) |
| | Agree | 19 (7.5) | 26 (14.2) | 1 | 1 |
| Unjustified research conclusions to nursing | Disagree | 48 (19.0) | 46 (18.2) | 1.478 (0.763, 2.862) | 0.445 (0.182, 1.085) |
| | Neutral | 59 (23.3) | 42 (16.6) | 1.990 (1.033,3.833)* | 1.100 (0.486,2.490) |
| | Agree | 24 (9.5) | 34 (13.4) | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| EBP has little benefits for nurses | Disagree | 68 (26.9) | 53(20.9) | 2.138 (1.026,4.455)* | 0.777 (0.295, 2.046) |
| | Neutral | 48 (19.0) | 44(17.4) | 1.818 (0.851, 3.886) | 0.736 (0.284, 1.907) |
| | Agree | 15 (5.9) | 25(9.9) | 1 | 1 |

enough computers for nurses to updating themselves."

This study finding showed that, 53.0%, 37.5%, 42.7% and 39.5% respondents agreed that relevant literature is not available; lack of authority in the work place; Physicians and other staffs are not cooperative with the utilization of EBP were reported as barriers respectively. These findings are slightly lower than other study findings for e.g. in Australia [41] where lack of authority & physicians will not cooperate and in Kenya [29] where relevant literatures were not available were reported as barriers by majority of the respondents but similar with study of South Africa [5] where Physicians were not supportive of utilization EBP. This indicates that nurses working in current study area reported barriers to utilization of EBP less likely than nurses working in other countries. This might be related with unfamiliarity of nurses with barriers to utilization of EBP and different year of work experiences. Almost half of them said that "there is no good communication between hospital managements and nurses, physicians and nurses and other health professionals and nurses." Others said that "there is no nurses' satisfaction, and some nurses have no interest and there is no need to update themselves."

This study revealed that, 60.1% of respondents asking their colleague to M to G extent, and 4% of them always use Nursing journals as sources for utilization of EBP. This similar with study findings in Australia [41] where 26.6% of nurse asked their colleagues and 8.7% of them read journals. This showed that majority of nurses do not search for scientific research rather they seek information from their ward colleague who have better knowledge and skill in performing different EBP activities. This might be related with heavy workload or insufficient time to read different journals.

## STRENGTH AND LIMITATION OF THE STUDY

In this study both quantitative and qualitative data collection methods were used which helped to dig out some factors influencing the utilization of EBP. This study was conducted in different hospitals which helps the generalizability of the results.

Cross sectional study design was used in this study, because it cannot tell us about causal relationship (only an association). Self-administered questionnaire was used to obtain the data which may introduce information biases and under or overestimate the result. Social desirability bias may affect the result of this study.

## IMPLICATIONS OF THE STUDY

The findings of this study have implications for practice, education, policy, and research. It will be supremely significance to the policy makers and more specifically to the nursing and health care professionals to provide quality of care in meeting the needs of patients and families as a whole specifically it improves patient outcomes, decrease health care costs, which is a priority of governmental and funding agencies.

## CONCLUSION

The prevalence of utilization of EBP among nurses working in public hospitals of Jimma zone was 51.8%. Nevertheless, only 16.5% of respondents often utilized EBP in their clinical practice. Lack of autonomy to change practice, inability to properly interpret the results of research, insufficient time, heavy workload, insufficient

resources, relevant literature is not available, lack of authority, and Physicians and other staffs are not cooperative with the utilization of EBP at work place were barriers reported by majority of the respondents. Generally, variables such as sex, hospital type, educational level, current role at hospital and knowledge about EBP have significant association with utilization of EBP.

To conclude common EBP utilization in public hospitals, continuous hard works are needed. Not only nurses need to become more familiar with EBP utilization, but also other health professionals. Future research should therefore also focus on the assessment of EBP utilization among all health professional.

## AUTHOR CONTRIBUTIONS

BD involved substantial contributions to conception and design of the study, data collection and data analysis, interpretation of data and drafting and critically reviewing the manuscript. Likewise EH and MB involved in designing of the study, analysis of the data and critically reviewing the manuscript. All authors read and approved the final manuscript.

## CONFLICTS OF INTEREST

There are no conflicts of interest.

## ACKNOWLEDGEMENT

## REFERENCES

1. http://www.borhan.org.sa/files/Evidence-based%20Practice%20-%20An%20Implementation%20Guide%20for%20Healthcare%20 Organizations.pdf

2. Melnyk BM, Overholt FE. Evidence-based practice in nursing & healthcare: A guide to best practice. 2nd Edn. Lippincott Williams & Wilkins. 2011.

3. Barends E, Rousseau DM, Briner RB. Evidence-based management: The basic principles. 2014.

4. Del Monte JMS. Research & evidence-based practice manual( 3rd Edn). 2014; p. 13-14.

5. Jordan P, Bowers C, Morton D. Barriers to implementing evidence-based practice in a private intensive care unit in the Eastern Cape. S Afr J Crit Care. 2016;32: 50-54.

6. Hui BDT. Individual and organizational barrier to evidence-based evidence practice utilization in clinical decision making among nurses. Int J Curr Res. 2017;9: 47608-47614.

7. Koota E, Kääriäinen M, Melender HL. Educational interventions promoting evidence-based practice among emergency nurses: A systematic review. Int Emerg Nurs. 2018;41: 51-58.

8. Farzinfard F, Kenari MA. Effect of evidence-based education to nursing students on the care skills for patients with mental disorders in the psychiatric ward of mart year Beheshti university

of medical sciences, Tehran, Iran. Int J Nurs Pract. 2015; 5.

9. Saunders H, Vehvil MPHK. Nurses evidence-based practice beliefs and the role of evidence-based practice mentors at university hospitals in Finland. Worldviews Evidence-Based Nurs. 2016;14: 35-45.

10. Titler MG. Nursing science and evidence-based practice. West J Nurs Res.2011;33: 291-295.

11. Ubbink DT, Guyatt GH, Vermeulen H. Framework of policy recommendations for implementation of evidence-based practice: A systematic scoping review. BMJ open. 2013;3: e001881.

12. Parse RR. Research as evidence: The many meanings. Nurs Sci Q. 2013;26: 109.

13. Stokke K, Olsen NR, Espehaug B, Nortvedt MW. Evidence based practice beliefs and implementation among nurses: A cross-sectional study. BMC nursing. 2014;13: 8.

14. Melnyk BM. New evidence-based practice competencies for practicing nurses and advanced practice nurses: From development to real world implementation. 2014.

15. Melnyk BM, Gallagher-Ford L, Long LE, Fineout-Overholt E. The establishment of evidence-based practice competencies for practicing registered nurses and advanced practice nurses in real-world clinical settings: Proficiencies to improve healthcare quality, reliability, patient outcomes, and costs. Worldviews Evid Based Nurs.2014;11: 5-15.

16. hdl.handle.net/10755/304374

17. Shafiei E, Baratimarnani A, Goharinezhad S, Kalhor R, Azmal M. Nurses' perceptions of evidence-based practice: A quantitative study at a teaching hospital in Iran. Med J Islam Repub Iran.2014;28: 135.

18. Connor L. Pediatric nurses â€TM knowledge, values and implementation of evidence-based practice and use of two patient safety goals. J Pediatr Nurs. 2018;41: 123-130.

19. Wallis, Laura. Barriers to implementing evidence-based practice remain high for U.S. nurses. Am J Nurse. 2012;112: 12-15.

20. Saunders H, Julkunen VK. The state of readiness for evidence-based practice among nurses: An integrative review. Int J Nurs Stud. 2016;56: 128-140.

21. Sapkato S. Research utilization among nurses: Barriers and facilitators. J Chitwan Medical College. 2014;4: 2-6.

22. Van der Goot WE, Keers JC, Kuipers R, Nieweg RM, De Groot M. The effect of a multifaceted evidence-based practice programme for nurses on knowledge, skills, attitudes and perceived barriers: A cohort study. Nurse Educ Today. 2018;63: 6-11.

23. Williams B, Perillo S, Brown T. Nurse education today what are the factors of organisational culture in health care settings that act as barriers to the implementation of evidence-based practice ? A scoping review. Nurse Educ Today. 2015;35: e34-e41.

24. Labrague LJ, McEnroe Pettite D, Tsaras K, D'Souza MS, Fronda DC, Mirafuentes EC, et al. Predictors of evidence based practice knowledge, skills and attitudes among nursing students. Nurs Forum. 2018.

25. Naidoo JR, Adamu A. Exploring the perceptions of registered nurses towards evidence-based practice in a selected general hospital in Nigeria. Afr J Nurs Midwifery. 2015;17: 33-46.

26. Hadgu G, Almez S, Tsehay S. Assessment of nurses' perceptions and barriers on evidence based practice in Tikur anbessa specialized hospital addis ababa Ethiopia. Am J Nurs Sci. 2015;4: 73-83.

27. Mutisya AK, KagureKarani A, Kigondu C. Research utilization among nurses at a teaching hospital in Kenya. J Caring Sci. 2015;4: 95.

28. Kronenfeld M, Stephenson PL, Nail-Chiwetalu B, Tweed EM, Sauers EL, McLeod TV, et al. (2007) Review for librarians of evidence-based practice in nursing and the allied health professions in the United States. J Med Libr Assoc. 2007;95: 394.

29. Pearson A, Jordan Z. Evidence-based healthcare in developing countries. Int J Evid Based Healthc. 2010;8: 97–100.

30. Majid S, Foo S, Luyt B, Zhang X, Theng YL, Yun KC, et al. Adopting evidence-based practice in clinical decision making: Nurses perceptions, knowledge, and barriers. J Med Libr Assoc. 2011;99: 229.

31. https://www.ahrq.gov/professionals/prevention-chronic-care/decision/uspstf/index.html

32. Dalheim A, Harthug S, Nilsen RM, Nortvedt MW. Factors influencing the development of evidence based practice among nurses: A self-report survey. BMC health services research. 2018;12: 367.

33. Gerrish K, Cooke J. Factors influencing evidence-based practice among community nurses. J Community Nurs. 2013;27: 98-101.

34. Wang LP, Jiang XL, Wang L, Wang GR, Bai YJ, et al. Barriers to and facilitators of research utilization: A survey of registered nurses in China. PloS one. 2013;8: e81908.

35. Farokhzadian J, Nayeri ND, Borhani F, Zare MR. Nurse leaders' attitudes, self-efficacy and training Needs for Implementing evidence-based practice: Is it time for a change toward safe care? Br J Med Res. 2014;7: 662.

36. Chijindu AV, Samantha EC, Augusta E. Evaluation of barriers to the implementation of evidence-based practice (EBP) among nurses working at federal teaching hospital abakaliki (FETHA II). In J Nurs Mid Health Case. 2016;2: 71-90.

37. Kang H. Evidence-based practice and job satisfaction of nurses in long-term care. Open J Nurs. 2016;6: 977.

38. Famutimi EO, Eke FJH. Knowledge and utilization of evidence-based nursing practice among nurses of Offa specialist hospital, kwara state. IOSR J Nurs Heal Sci. 2015;4: 51-62.

39. Baiomy S, Khalek EMA. Factors influencing effective implementation of evidence based practice among nurses in assiut city hospitals , Egypt : A comparative Study. IOSR J Nurs Heal Sci. 2015;4: 11-19.

40. Eizenberg MM. Implementation of evidence based nursing practice: Nurses' personal and professional factors? J Adv Nurs. 2011;67: 33-42.

41. Shifaza F, Evans D, Bradley H. Nurses perceptions of barriers and facilitators to implement EBP in the Maldives. Adv Nurs. 2014;7.

42. Khammarnia M, Mohammadi MH, Amani Z, Rezaeian S, Setoodehzadeh F. Barriers to implementation of evidence based practice in Zahedan teaching hospitals, Iran, 2014. Nurs Res Pract. 2015.