



# BMJ Open Evidence-based practice utilisation and its associated factors among nurses working at public hospitals in West Shoa zone, central Ethiopia: a cross-sectional study

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## ABSTRACT

**Objective** The aim of this study was to assess the utilisation of evidence-based practice (EBP) and its associated factors among nurses working in public hospitals of West Shoa zone, Oromia, central Ethiopia, in 2021.

**Design** Institution-based cross-sectional study.

**Setting** Government hospitals including four primary hospitals, three general hospitals and a referral hospital. The study was conducted between 10 August and 30 August 2021.

**Participants** 418 randomly selected nurses working in public hospitals of West Shoa. Data were collected via a structured, self-administered questionnaire, entered into EpiData V.3.1 and exported to SPSS V.26 for analysis.

**Outcome measure** Utilisation of EBP (good/poor).

**Results** 52.4% (95% CI 47.6% to 57.3%) of nurses had good EBP utilisation. Level of hospital (adjusted OR (AOR) 0.456 (95% CI 0.253 to 0.821)), administrative position (AOR 2.7 (1.09 to 6.69)), level of education (AOR 0.353 (0.181 to 0.686)), knowledge about EBP (AOR 1.785, (1.13 to 2.82)), availability of time (AOR 0.523 (0.28 to 0.96)), and cooperative and supportive colleagues (AOR 0.429 (0.235 to 0.783)) were associated with good utilisation of evidence-based nursing practice.

**Conclusion** The utilisation of EBP among nurses is low. Level of education, knowledge about EBP, sufficient time at the workplace, and cooperative and supportive colleagues were among the factors associated with good EBP utilisation. The healthcare system in general, hospital management specifically, needs to design strategies to improve evidence-based nursing practice in the area.

## INTRODUCTION

Evidence-based practice (EBP) is a problem-solving approach that incorporates the best available evidence, clinicians' expertise, and patients' preferences and values.<sup>1</sup> It is the nurses' responsibility to be kept up to date to ensure the best care.<sup>2 3</sup> Consciously applying Sackett's EBP model in clinical practice can provide structure and guidance to

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The results are generalisable to the public hospitals of the West Shoa zone.
- ⇒ The results cannot be assumed to be generalisable to all nurses working in West Shoa zone, as other health facilities such as health centres, health posts and private institutions were excluded.
- ⇒ A self-administered questionnaire was used to obtain the data, and social desirability bias may have impacted the findings.

clinicians who engage in EBP, with the goal of improving clinical practice and quality of care. By using EBP model, clinicians can systematically apply EBP to their clinical decisions, helping to ensure the highest quality of care for their patients. The steps of Sackett's model include the following: (1) ask/formulate clinical questions; (2) look (search) for evidence; (3) critically appraise evidence; (4) use/integrate with expertise; (5) evaluate the outcomes and (6) share/teach new evidence to others. Implementing EBP takes resources, time and effort, but the outcome makes it worthwhile.<sup>4-6</sup>

Globally, nursing is the backbone of the healthcare system and nursing practice needs to be evidence based to ensure quality patient care. However, unsafe care is a serious global health issue causing challenges in all countries, so policymakers must continue to critically evaluate the quality and safety of care.<sup>7</sup> From time to time, healthcare organisations are challenged by the endemic of medical errors and unsafe care.<sup>2 4</sup> Besides variations in outcomes, health inequalities and inadequate healthcare services remain a challenge for all nurses. Poorly informed decision-making arises from low utilisation of

EBP, which is one of the main reasons that the service is not optimally provided and can lead to differences in practice that make it less efficient, ineffective and inequitable.<sup>8</sup>

According to Melnyk *et al*'s<sup>9</sup> study, about half of the world's death could be prevented with simple cost-effective interventions of EBP.<sup>9</sup> Of the 2.5 million annual deaths in the world, at least half of them could be addressed directly by evidence-based preventive services.<sup>7</sup> Among these, 75% of the problems were minimised by using EBP interventions.<sup>10</sup> Similarly, EBP has been significantly promoted through training outcomes, knowledge and high educational level that promote the improvement in patient outcomes and cost-savings.<sup>11–14</sup> All variations in healthcare outcomes and cost differences were due to the impacts of changes in the level of EBP implementation in nursing.<sup>11 15</sup>

In developing countries, studies show that while EBP has been linked to improved health, safety and cost outcomes, most healthcare practices in low/middle-income countries including Ethiopia have been challenged.<sup>16 17</sup> Also, its application continues to be observed irregularly at the point of patient care.<sup>18 19</sup>

EBP is often not used optimally in decision-making, which leads to unnecessary loss of life, reduced quality of life and loss of the quality of patient outcomes.<sup>20</sup> Poor access to information, insufficient time at workplace, lack of training and resources, heavy workload, and lack of cooperative and supportive colleagues make efforts near impossible for health professionals working with vulnerable communities in low-income economies like in African countries.<sup>11 17 21 22</sup> In addition, nursing practice in Africa is mostly based on experience, tradition, intuition, common sense and untested theories.<sup>23</sup> In Ethiopia, some of the studies indicate a low level of EBP use and recommend conducting it in different health institutions.<sup>22 24</sup> Thus, this study was carried out to determine the extent of EBP utilisation and its associated factors among nurses working at public hospitals in the Oromia region, Ethiopia, 2021.

## OBJECTIVES

To assess the magnitude of EBP utilisation and its associated factors among nurses working in public hospitals of West Shoa zone, Oromia, central Ethiopia, in 2021.

## METHODS

### Study design and setting

An institution-based cross-sectional study was conducted at public hospitals in West Shoa zone, Oromia region, central Ethiopia from 10 August to 30 August 2021. West Shoa is in the Oromia region, in Ethiopia. In this zone, there are eight public hospitals. Currently, in these public hospitals, 629 nurses are serving the community.

## Study population

All nurses working in public hospitals of West Shoa zone, Oromia region, Ethiopia were the source population. All randomly selected nurses from among the source population were the study population.

## Sample size determination and sampling technique

The sample size was determined using single population proportion formula with the following assumptions: 95% CI, 5% margin error and 55% magnitude of good EBP utilisation of nurses from a study done at Amhara regional hospitals in 2019.<sup>24</sup> The calculated total sample size was 380. By considering a 10% non-response rate, the final sample size was 418. All public hospitals in the West Shoa zone were included in the study. The total calculated sample size (418 out of 629) was professionally allocated to each hospital based on the number of nurses in the hospital.

To proportionate the number of study subjects for each hospital, the formula:  $n = n \times nf / N$  was used; where  $n$  = number of nurses in each hospital,  $nf$  = total sample size and  $N$  = the total number of nurses in the eight hospitals. Ambo General Hospital has a total of 99 (66) nurses, Guder Hospital has total of 55 (37) nurses, Gedo General Hospital has a total of 67 (44) nurses, Jaldu Hospital has a total of 44 (29) nurses, Gindaberet Hospital has a total of 47 (31) nurses, Ambo University Referral Hospital (AURH) has a total of 213 (142) and Bako Hospital has a total of 57 (38) nurses. The sampling framing was prepared for each hospital by having a list of nurses' registration numbers from the respective hospitals' human resources administration. Finally, a simple random sampling technique (computer-generated method) was used to select each study participant.

## Operational definitions

**Utilisation of EBP status:** nurses who score equal to and above the median EBP utilisation score were used as a cut-off point and categorised as having 'good EBP utilisation', otherwise 'poor EBP utilisation'.<sup>24</sup>

**Knowledge status:** nurses who answered correctly and scored equal to or above the median from the knowledge-related questions are categorised as having good knowledge about EBP, otherwise poor knowledge about EBP.<sup>24</sup>

## Data collection tools and techniques

In this study, the data were obtained by a self-administered, structured questionnaire that was adapted from a questionnaire used in different studies done in different areas<sup>11 24 25</sup> (online supplemental file 1). Validity and reliability were established and reported by Aynalem *et al* in the previous study.<sup>24</sup> The questionnaire contains six parts with 58 items. The first part contains sociodemographic information which has 10 items; the second part is about nurses' knowledge of EBP which has 8 items; the third part focuses on sources of information that support EBP which has 9 items; the fourth part was about utilisation of EBP which has 6 items; the fifth part was about perceived

barriers to utilisation of EBP which has 20 items; and the last part was about facilitators for utilisation of EBP which has 5 items. Part two had yes or no questions. Parts three, four and six had levels that ranged from never (1) to always (5). Part five was constructed on a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). For the purpose of analysis, this 5-point Likert scale was merged according to the previous study, making it easier to compare the findings of this study with the other study findings. Accordingly, strongly disagree and disagree were merged to disagree, and agree and strongly agree were merged to agree.<sup>11</sup> In this study, the data were obtained by a structured questionnaire, and the data collection process was done by administering a structured questionnaire to the respondents. The data were collected by nurse professionals recruited from similar healthcare settings different from the study areas.

### Data quality control and management

The 2-day training was given to both data collectors and supervisors by the investigator. A pretest was conducted 1 week before actual data collection on 5% of the nurses who were selected randomly from Sibu Sire Hospital, East Wollega zone, the nearest zone to the study area, to evaluate the clarity and reliability, and to estimate the time needed to complete the tool. Based on the collected information, the necessary modifications were made, and some questions were clarified. From the current study, the tools to measure EBP utilisation among nurses were reliable with Cronbach's alpha at 0.846. While knowledge, source of information, perceived barriers and facilitators were reliable with Cronbach's alpha at 0.87, 0.81, 0.76 and 0.86, respectively.

### Study variables

#### Dependent variable

Utilisation of EBP in nursing.

#### Independent variables

*Sociodemographic variables:* age, sex, marital status, work experience and educational level.

*Individual factors:* knowledge of EBP, certainty/confidence in practising EBP, time to search evidence, ability to understand/interpret research findings and autonomy to change practice.

*Sources of information for utilisation of EBP:* classroom, hospital protocols, national guidelines, training, colleagues, personal experience, nursing journals, internet and textbooks.

*Organisational factors:* work unit, current role at the hospital, workload, access to resources, hospital type and power/authority for the implementation of EBP.

### Data processing and analysis

The collected data were checked for completeness, and a unique code was given for each questionnaire. Then data were entered in EpiData V.3.1.27 and analysed using the SPSS V.26 statistical software package.

For EBP utilisation, six questions each had a 5-point Likert scale with a minimum score of 6 and a maximum score of 30. The data were not approximately normally distributed by Shapiro-Wilk ( $W$  statistic=0.982,  $df=403$ ,  $p=0.001$ ). For this reason, the median was used rather than the mean. Finally, the data were categorised at a cut-off point of 18 ( $\pm 8$ ). Finally, a score of equal and above the cut-off point was categorised as 'good EBP utilisation', otherwise poor 'EBP utilisation'.

Each respondent's total EBP knowledge scores, with a minimum score of 8 to a maximum of 16, were calculated. From this, these data were not approximately normally distributed by the Shapiro-Wilk test ( $W$  statistic=0.902,  $df=403$ ,  $p<0.001$ ). For this reason, the median was used rather than the mean. Finally, the data were categorised at a cut-off point of 14 ( $\pm 1$ ).

Nurses having knowledge scores equal to and above the median score were considered as having 'good knowledge' and those below as having 'poor knowledge'.

Descriptive statistics including frequency distribution, median and IQR were used to describe the variables. Binary logistic regression was used to determine the association between the outcome variable and predictors. Then, variables with a  $p$  value less than 0.05 were selected to be a candidate for multivariable logistic regression analysis. In the multivariable logistic regression analysis, variables having a  $p$  value of  $<0.05$  were used to declare statistical significance. Adjusted ORs together with its corresponding 95% CIs were taken to measure the level of significance of the association. The Hosmer-Lemeshow goodness of fit was considered to check model fitness. Accordingly, the result from the Hosmer-Lemeshow goodness-of-fit model adequately fits at a  $p$  value of 0.501. Finally, the result of this study was summarised and presented in tables, figures, text and graphs.

### Patient and public involvement

None.

## RESULTS

### Sociodemographic characteristics of the study participants

Among the total 418 distributed questionnaires, 403 completed data were returned, which made a response rate of 96.4%. From this, 187 (46.4%) of participants were between the ages 25 and 29 years with median (IQR) of 28 ( $\pm 6$ ); 216 (53.6%) were men and 250 (62%) had less than 5 years of working experience. Regarding educational level, majority of them (336; 83.4%) had BSc (Bachelor of Science) degree and above, and 366 (90.8%) of them were staff nurses (those nurses who have no administrative position) (table 1).

### EBP utilisation among nurses

Ninety-two (22.8%) and 101 (25.1%) nurses often formulate clinical questions and search for evidence, respectively. Also, about 138 (34.2%) of study participants usually integrate evidence and 51 (12.7%) of them always



**Table 1** Distribution of respondents by sociodemographic characteristics

Sociodemographic characteristics		Frequency (n=403)	Per cent
Age	<24 years	45	11.2
	25–29 years	187	46.4
	30–34 years	119	29.5
	35 and above	52	12.9
Sex	Male	216	53.6
	Female	187	46.4
Level of hospital	Referral	140	34.7
	General	137	34
	Primary	126	31.3
Working unit	Medical ward	78	19.4
	Surgical ward	88	21.8
	ICU	52	12.9
	Emergency unit	55	13.7
	Paediatric ward	52	12.9
	OPD	63	15.6
	Others*	15	3.7
Marital status	Single	185	45.9
	Ever married	218	54.1
Ethnicity	Oromo	379	94
	Amhara	15	3.7
	Others**	9	2.2
Religion	Protestant	184	45.7
	Orthodox	146	36.2
	Muslim	28	6.9
	Catholic	28	6.9
	Others***	17	4.2
Work experience	<5 years	250	62
	6–10 years	125	31.1
	>11 years	28	6.9
Educational level	Diploma	67	16.6
	Degree and above	336	83.4
Current role	Staff nurse	366	90.8
	Nurse manager	37	9.2

\*includes; Psychiatry ward, Neonatal care unit (NICU).

\*\*includes; Gurage, Tigre.

\*\*\*includes; Wakefata, None and the number of asterisk indicate, the 1st, 2nd and 3rd variables as working unit, ethnicity, and religion respectively.  
ICU, intensive care unit; OPD, outpatient department.

integrate evidence that they got with patient values and their skills, while 57 (14.1%) and 48 (11.9%) of them appraise the evidence and evaluate the outcome of their practice, respectively. About 58 (14.4%) of them never shared the outcome (table 2).

From this study's finding, the magnitude of nurses who had good EBP utilisation was found to be 52.4% (95% CI: 47.6% to 57.3%) (figure 1).

### Knowledge of EBP among nurses

From the current study finding, the magnitude of nurses who had good knowledge about EBP is found to be 232 (57.6%) (figure 2).

### Perceived factors related to utilisation of EBP

From the individual barriers to using EBP, 35.73%, 35.23% and 34.99% of respondents agreed that lack of autonomy to change practice, the culture of the team not being receptive to EBP implementation and uncertainty about the results of the research to nurses' practice were among the common barriers to using EBP perceived by nurses, respectively (table 3).

### Perceived organisational barriers to utilisation of EBP

More than half (229; 56.8%), nearly half (198; 49.1%) and 180 (44.7%) respondents agreed that insufficient resources at workplace, workload and insufficient time were barriers to EBP utilisation, respectively (table 4).

### Perceived facilitators for the utilisation of EBP

More than half (253; 62.8%), 252 (62.5%) and 242 (60%) of the respondents agreed that improving research knowledge, giving adequate training and enhancing nursing administrative support were among the most perceived facilitators identified by nurses for EBP utilisation, respectively (figure 3).

### Sources of evidence for utilisation of EBP

More than half of respondents (115; 53.8%) always use their personal experience for EBP utilisation, 240 (59.6%) used EBP moderately to a great extent based on hospital protocol, 62 (15.4%) never used the nursing journal for EBP utilisation, 122 (30.3%) always used the internet for EBP utilisation, while 229 (56.8%) and 229 (56.8%) had classroom and colleagues, respectively, to use moderately to a great extent for EBP utilisation (figure 4).

### Bivariate and multivariable analyses of factors associated with the utilisation of EBP

In the bivariate analysis, age, work experience, level of hospital, current role in the hospital, educational status, knowledge, lack of autonomy, inability to understand statistical terms, insufficient time, workload, lack of authority, unjustified research conclusions to nursing, the culture of the team not being receptive to EBP implementation, cooperative and supportive nursing colleagues, and administrative support were selected to be candidates for multivariable logistic regression analysis.

Finally, after controlling confounding variables, the following factors were significantly associated with EBP utilisation at 95% CI with a p value of 0.05 in multivariable logistic regression analysis: level of hospital (p=0.009), being nurse managers (p=0.032), BSc and above level of education (p=0.002), good knowledge

**Table 2** Frequency of evidence-based practice utilisation among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403)

Activities	Never		Sometimes		Usually		Often		Always	
	N	%	N	%	N	%	N	%	N	%
Formulating clinical question	63	15.6	101	25.1	93	23.1	92	22.8	54	13.4
Searching evidence	49	12.2	99	24.6	114	28.3	101	25.1	40	9.9
Appraising evidence	61	15.1	75	18.6	118	29.3	92	22.8	57	14.1
Integrating with expertise	61	15.1	73	18.1	138	34.2	80	19.9	51	12.7
Evaluating outcomes	101	25.1	65	16.1	98	24.3	91	22.6	48	11.9
Sharing outcomes	58	14.4	45	11.2	107	26.6	117	29	76	18.9

(1) Never, (2) sometimes (<1/month), (3) usually (one to two times/month), (4) often (weekly), (5) always (several times/week).

( $p=0.013$ ), insufficient time ( $p=0.038$ ), and cooperative and supportive colleagues ( $p=0.003$ ).

Nurses who were working in the primary hospitals were 54.4% times less likely to have good utilisation of EBP compared with those in referral hospitals. A nurse manager was almost three times more likely to have good utilisation of EBP compared with staff nurses. Nurses who had diplomas were 64.7% times less likely to have good utilisation of EBP compared with those who had BSc and above qualification. Nurses who had good knowledge about EBP were 1.785 times more likely to have good utilisation of EBP compared with nurses who had poor knowledge about EBP. Nurses who disagree on cooperative and supportive colleagues as an enabling factor were 57.1% times less likely to have good utilisation of EBP compared with nurses who agreed on cooperative and supportive colleagues as an enabling factor of EBP utilisation. Moreover, nurses who disagree on insufficient time at workplace as a barrier to utilisation of EBP were 47.7% less likely to have good utilisation of EBP compared with those nurses who agree on insufficient time at the workplace as a barrier to utilisation of EBP (table 5).

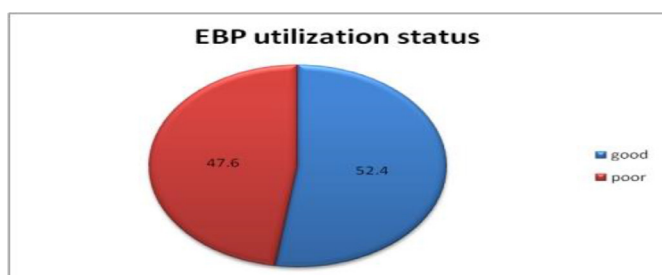
## DISCUSSION

The aim of this study was to assess the magnitude of EBP and its associated factors among nurses working at public hospitals in the Oromia region, Ethiopia. The present study shows that 52.4 (95% CI: 47.6 to 57.3) of nurses had good EBP utilisation. Being a nurse manager,

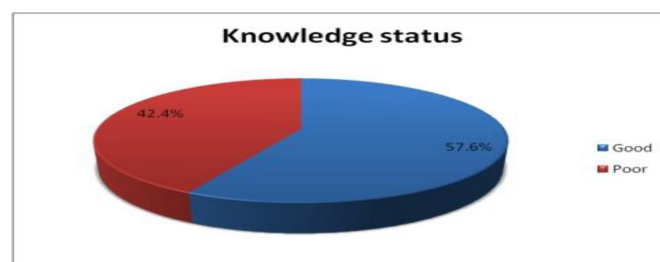
working at a referral hospital, having BSc and above level of education, good knowledge about EBP, workload and supportive colleagues were among those associated with EBP utilisation of nurses.

This finding is similar to the studies done in Jimma, Ethiopia (51.8%),<sup>11</sup> Amhara Regional Referral Hospital, Ethiopia (55%),<sup>24</sup> Kenya (53.6%)<sup>25</sup> and Zambia (54%),<sup>26</sup> but the current finding is lower compared with the studies done in southwest and southern Ethiopia, where 81.1%<sup>27</sup> and 61.5%<sup>19</sup> of nurses used EBP during their patient care, respectively. This inconsistency may be due to knowledge about the utilisation of EBP. From those studies, it was reported that most of the participants had better knowledge about EBP; 62.9%<sup>27</sup> and 81.2%<sup>11</sup> of their respondents were familiar with the concept of EBP compared with the current study finding on knowledge about EBP (57.6%). The current study finding is high when compared with a study done in Offa Specialist Hospital, Nigeria among nurses, which found to be 30.9%.<sup>28</sup> This difference might be due to differences in sample size (small number of nurses involved in the previous study), having only one health facility, the difference in knowledge level and training provision.

In terms of the level of the hospitals, those nurses who were working in the primary hospitals were 54.4% times less likely to have good utilisation of EBP compared with those in referral hospitals. This finding is analogous to a study done in Ethiopia, Jimma public hospitals, which suggests that nurses who were working in a teaching hospital were 4.78 times more likely to use EBP compared



**Figure 1** Utilisation of evidence-based practice (EBP) among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403).



**Figure 2** Knowledge status regarding evidence-based practice among nurses working in public hospitals of West Shoa zone, 2021 (n=403).

**Table 3** Individual factors associated with utilisation of evidence-based practice (EBP) among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403)

Variables	Disagree		Neutral		Agree	
	No	%	No	%	No	%
Lack of autonomy to change practice	142	35.23	117	29.03	144	35.73
Inadequate understanding of research terms	169	41.9	128	31.8	106	26.3
Inability to understand statistical terms used in research	184	45.7	93	23.1	126	31.3
Inability to properly interpret the results of research	151	37.5	114	28.3	138	34.2
No confidence in judging the quality of research	177	43.9	92	22.8	134	33.3
Insufficient proficiency in English language	184	45.7	85	21.1	134	33.3
EBP has little benefits for nurses	190	47.15	75	18.61	138	34.24
The culture of the team being not receptive to EBP implementation	172	42.69	89	22.08	150	35.23
Uncertainty about the results of the research working to nurses' practice	160	39.7	102	25.31	141	34.99

with those who were working in non-teaching hospitals.<sup>11</sup> This may be due to the fact that nurses who were working in teaching hospitals have different opportunities like the opportunity to communicate with experts, attend academic meetings and seminars, do rounds with different specialties, and upgrade to the next level of education to support their knowledge and skills in using EBP.

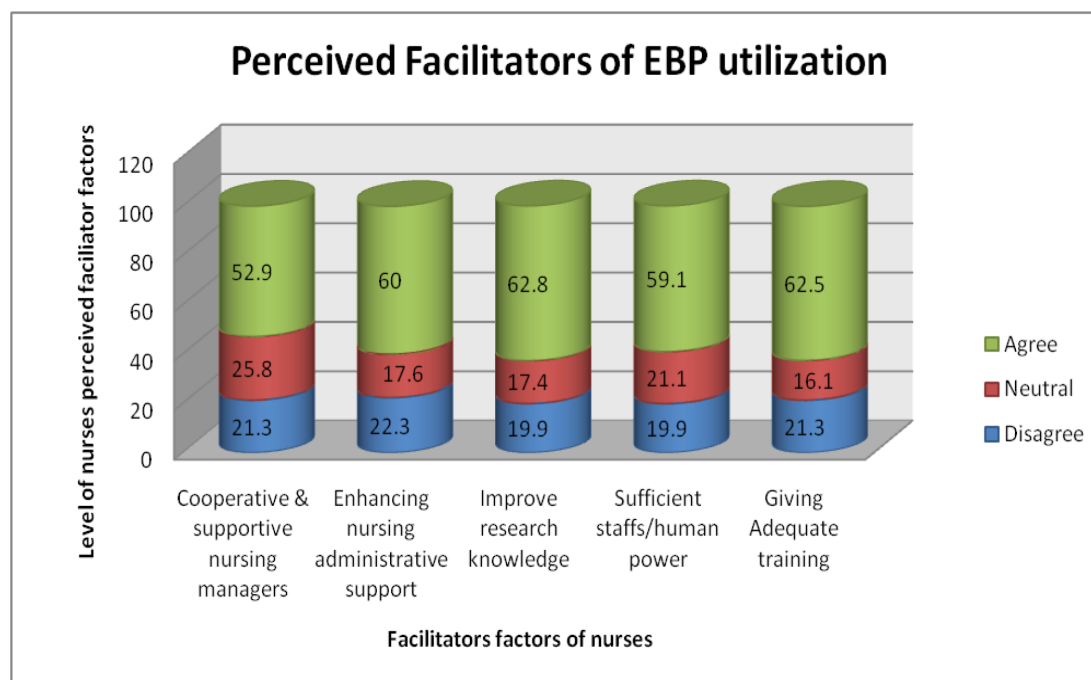
Nurse managers were 2.7 times more likely to have good utilisation of EBP than staff nurses. This finding is similar to a study conducted in selected hospitals in southern Ethiopia; a head nurse at a hospital was three times more likely to use EBP than a staff nurse.<sup>19</sup> Also, another study done in Ethiopia at public hospitals in the Jimma zone was analogous to the current finding that nurse managers at hospitals were 5.2 times more likely to use EBP than staff nurses.<sup>11</sup> But this is inconsistent with a study conducted in Israel, which indicates that there is

no significant association or difference in nurses' roles at hospitals with regard to using EBP.<sup>2</sup> This may be due to the fact that nurses with a high position have moral responsibilities to be role models to their subordinate staff, so they make an effort to practise the recommended standard. In addition, head nurses had more opportunities to participate in training and workshops, and gain information on new guidelines/strategies.

Regarding the level of education, nurses who had diplomas were 64.7% times less likely to have good utilisation of EBP compared with those who had BSc and above educational level. This was analogous to a study done in Ethiopia at public hospitals in the Jimma zone. This indicates that nurses who have a degree and higher educational level were 3.18 times more likely to use EBP than those who have only a diploma.<sup>11</sup> Similarly, a study conducted in Ethiopia at Addis Ababa public hospitals and Kenyatta National Hospital found that nurses with

**Table 4** Organisational factors associated with utilisation of evidence-based practice (EBP) among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403)

Variables	Disagree		Neutral		Agree	
	No	%	No	%	No	%
Insufficient time at a workplace to implement EBP	115	28.5	108	26.8	180	44.7
Heavy workload at a workplace to implement EBP	135	33.5	70	17.4	198	49.1
Insufficient resources to implement EBP	100	24.8	74	18.4	229	56.8
The relevant literature is not available	122	30.3	91	22.6	190	47.1
Lack of authority in the workplace to implement EBP	136	33.7	111	27.5	156	38.7
The nurse is isolated from experienced colleagues with whom to discuss the research	175	43.4	99	24.6	129	32.0
Physicians are not cooperative with the nurses with regard to EBP implementation	171	42.4	78	19.4	154	38.2
Unjustified research conclusions to nursing	151	37.5	102	25.3	150	37.2
Other staff members are not supportive of the implementation	157	39.0	93	23.1	153	38.0
Unclear implications of EBP for practice in nursing	146	36.2	100	24.8	157	39.0

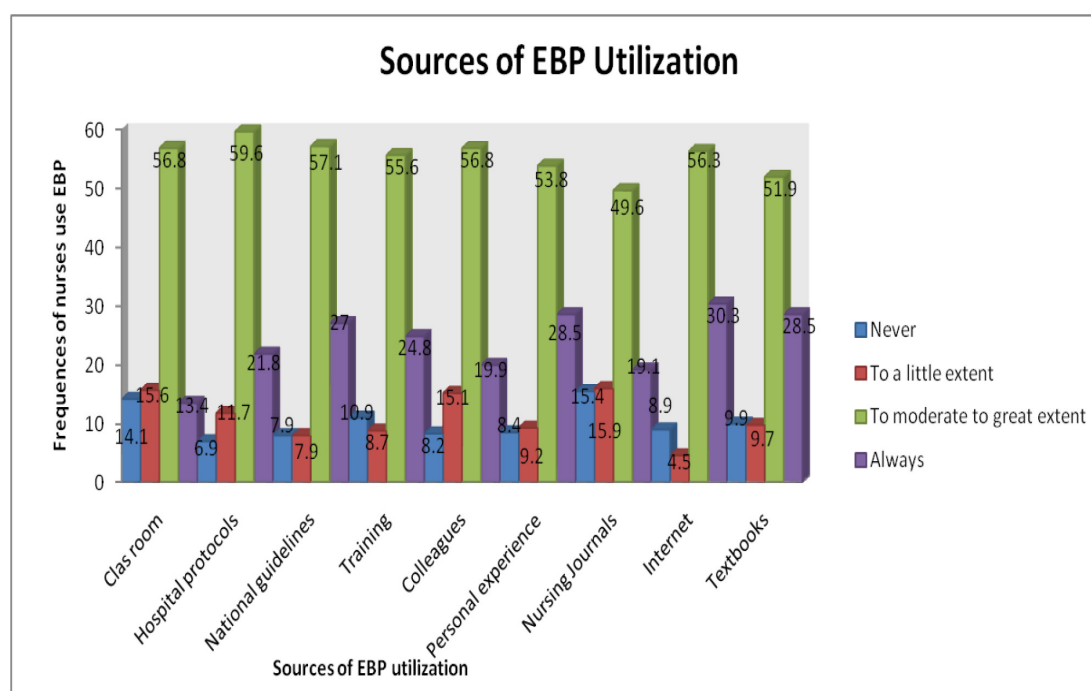


**Figure 3** Facilitators for utilisation of evidence-based practice (EBP) among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403).

BSc degree and above education used EBP more than nurses who only have diplomas.<sup>29 30</sup> Similarly, a study done in Norway indicated that registered nurses scored significantly lower in believing in EBP than highly trained nurses.<sup>12</sup> In addition, a study conducted in the USA showed that professional development to gain EBP knowledge is recognised as the nurse's best preparation for providing clinical care that optimises patient outcomes.<sup>13</sup>

This implies nurses who have degrees and higher-level of education were more likely to use EBP than nurses with diplomas.

Regarding nurses' knowledge about EBP, those nurses who had good knowledge about EBP were 1.785 times more likely to have good utilisation of EBP compared with those nurses who had poor knowledge about EBP. This finding is similar to a study done in Ethiopia where



**Figure 4** Sources of evidence for utilisation of evidence-based practice (EBP) among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403)

**Table 5** Binary and multivariable logistic regression analyses of factors associated with utilisation of evidence-based practice (EBP) among nurses working in public hospitals of West Shoa zone, Ethiopia, 2021 (n=403)

Variables	Categories	Good EBPU	Poor EBPU	Cor (95% CI)	Aor (95% CI)	P-Value
		No (%)	No (%)			
Level of Hospital	Referral General	79 (37.4%)	61 (31. %)	1	1	
	Primary	80 (37.9%)	57 (29.7%)	1.084 (1.13, 3.0)	1.216 (0.68, 2.167)	0.508
		52 (24.6%)	74 (38.5%)	0.543 (0.33, 0.88)	0.456 (0.253,0.821)	0.009**
Current role	Staff nurse	183 (86.7%)	183 (95.3%)	1	1	
	Manageme nt position	28 (13.3%)	9 (4.7%)	3.11 (1.42, 6.77)	2.7 (1.09, 6.69)	0.032*
Level of education	Diploma	20 (9.5%)	47 (24.5%)	0.323 (0.18, 0.57)	0.353 (0.181,0.686)	0.002**
	BSc &above	191 (90.5%)	145 (75.5%)	1	1	
Knowledge status	Good	139 (65.9%)	93 (48.4%)	2.055 (1.38,3.07)	1.785 (1.13, 2.820)	0.013*
	Poor	72 (34.1%)	99 (51.6%)	1	1	
Experience	≤5	119 (56.4%)	131 (68.2%)	1	1	
	10-Jun	76 (36%)	49 (25.5%)	1.707 (1.10, 2.64)	2.1 (0.26, 3.85)	0.404
	≥11	16 (7.6%)	12 (6.2%)	1.468 (0.67, 3.2)	1.517 (0.57, 4.04)	0.517
Lack of autonomy to change	Disagree Neutral	63 (29.9%)	86 (44.8%)	0.519 (0.32,0.83)	1.053 (0.55, 2.0)	0.909
	Agree	69 (32.7%)	50 (26.0%)	0.978 (0.59,1.61)	1.473 (0.8,2.69)	0.274
		79 (37.4%)	56 (29.2%)	1	1	
Inability to understand statistical terms	Disagree Neutral	86 (40.8%)	98 (51.0%)	0.617 (0.39,0.97)	1.145 (0.52, 2.5)	0.729
	Agree	51 (24.2%)	42 (21.9%)	0.853 (0.49,1.46)	1.128 (0.53,2.38)	0.761
		74 (35.1%)	52 (27.1%)	1	1	
Insufficient time at workplace	Disagree	42 (19.9%)	73 (38%)	0.349 (0.21, 0.56)	0.523 (0.28,0.96)	0.038*
	Neutral Agree	57 (27%)	51 (26.6%)	0.679 (0.41, 1.10)	0.652 (0.37,1.14)	0.138
		112 (53.1%)	68 (35.4%)	1	1	
Workload at workplace	Disagree	49 (23.2%)	86 (44.8%)	0.363 (0.23, 0.57)	0.555 (0.3, 1.0)	0.51
	Neutral Agree	41 (19.4%)	29 (15.1%)	0.9 (0.51, 1.56)	1.025 (0.53,1.96)	0.942
		121 (57.3%)	77 (40.1%)	1	1	
Lack of authority to implement	Disagree	59 (28%)	77 (40.1%)	0.547 (0.34, 0.87)	1.573 (0.74, 3.30)	0.238
	Neutral Agree	61 (28.9%)	50 (26%)	0.871 (0.53, 1.42)	1.318 (0.70, 2.47)	0.488
		91 (43.1%)	65 (33.9%)	1	1	
Cooperative & supportive nursing colleagues	Disagree	33 (15.6%)	53 (27.6%)	0.473 (0.28,0.79)	0.429 (0.23,0.78)	0.003**
	Neutral Agree	57 (27%)	47 (24.5%)	0.922 (0.57,1.47)	0.937 (0.54,1.6)	0.815
		121 (57.3%)	92 (47.9%)	1	1	
Enhancing administrative support	Disagree Neutral	38 (18%)	52 (27.1%)	0.579 (0.35,0.94)	0.946 (0.4, 2.23)	0.95
	Agree	38 (18%)	33 (17.2%)	0.913 (0.53,1.55)	1.7 (0.51,2.25)	0.721
		135 (64%)	107 (55.7%)	1	1	

EBP, Evidence based practice.

nurses who had good knowledge about EBP were more likely to use EBP than nurses who had poor knowledge about EBP.<sup>11 22 24</sup> Also, a study carried out in different parts of Ethiopia, the Amhara Regional Referral Hospital<sup>24</sup> and Addis Ababa Public Hospital,<sup>14</sup> also agreed with the current findings. In addition, a study conducted in

Norway also revealed that the highest correlation was found among nurses who had learnt about EBP than those who did not learn about EBP.<sup>12</sup> This implies that nurses having good knowledge about EBP were more likely to have good utilisation of EBP than those with poor knowledge about EBP. This could be related to having



up-to-date information about EBP through training and colleagues, having higher educational levels and having access to free internet.

From the facilitators, those nurses who disagree on cooperative and supportive colleagues as a source of EBP utilisation were 57.1% times less likely to have good utilisation of EBP compared with those nurses who agree on cooperative and supportive colleagues as a source of EBP utilisation. This is analogous to a study done in Tikur Anbesa Specialized Hospital, Ethiopia.<sup>22</sup> This implies that nurses who have supportive nurse managers were more likely to use EBP than those who have not had supportive nurse managers for EBP utilisation. This may be due to nurse managers' skill transfer information, mentorship, communication characteristics and individual nurses' preferences.

Likewise, nurses who disagree on insufficient time at the workplace as a barrier to using EBP were 47.7% less likely to have good utilisation of EBP compared with those nurses who agreed on insufficient time at the workplace as a barrier to implementing EBP. This is contradicted by a study done in Saudi Arabia which indicated that the primary barrier to implementing EBP was lack of time at the workplace.<sup>6</sup> The current finding indicates that insufficient time at the workplace was not a barrier to using EBP. Even though they disagree on insufficient time at the workplace as a barrier to using EBP, they were less likely to use EBP compared with those who agree on insufficient time as a barrier to using EBP. This might be due to a lack of information access, knowledge of EBP and communication skills.

## CONCLUSION

In the present study finding, more than half of the nurses had good EBP utilisation. Even though the status was good, the magnitude of EBP utilisation in the current study was found to be low as compared with recently conducted study findings in different parts of Ethiopia. Being a nurse manager, working at a referral hospital, having BSc and above level of education, good knowledge about EBP, workload and supportive colleagues were predictor variables for EBP utilisation of nurses. Hospital administrators need to avail materials needed for EBP utilisation like updated guidelines, provide awareness on EBP utilisation, create an appropriate strategy to develop cooperative and supportive culture between nurses and managers, provide continuous professional development for nurses regularly, and design appropriate plans by considering supporting factors and barriers to implementing EBP. Also, future researchers are required to conduct studies using a mixed-methods approach and observational studies including other health professionals.

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Annex I. Instruments (questionnaire)

Subject No \_\_\_\_\_  
Ward/Unit: \_\_\_\_\_ Date: \_\_

Introduction: This instrument is divided into 5 sections. Section 1 is related to yours Personal data. Section 2 is your knowledge regarding EBP. Section 3 is your sources of evidence for utilization of EBP. Section 4 is about Utilization of EBP. Section 5 is about Barriers to utilization of EBP and the last section is about Facilitators for utilization of EBP.

Part I: Socio-demographic Data		
1	Age	----- in year
2	Sex	1. Male 2. Female
3	Hospital in which you work	1. Referral hospital 2. General hospital 3. District hospital
4	Work unit in which you working	1 Medical ward 2 Surgical ward 3 Intensive care unit 4 Emergency Unit 5 Pediatrics 6 OPD                      7,others
5	Marital status	1. Single 2. Married 3. Widowed 4. Divorced
6	Ethnicity	1. Oromo 2. Amhara

		3. Tigre 4. Gurage 5. Others specify ____
<b>7</b>	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other specify ____
<b>9</b>	Work experience	_____ in year
<b>10</b>	Educational level	1. Diploma 2. BSc 3. MSc
<b>11</b>	Current role at the hospital	1. Staff nurse 2. Head nurse/ nurses at managerial position

#### Part II: Nurses' knowledge regarding Evidence Based Practice (EBP)

<b>s. no</b>	Please respond to the next items by indicating Yes or No to knowledge you have regarding EBP.	<b>Yes</b>	<b>No</b>
<b>1</b>	Are you aware of the concept of EBP in nursing?		
<b>2</b>	I have knowledge to implement EBP principles.		



3	Evidence-based practice is a problem solving approach.		
4	It enhances delivering of highest quality of care.		
5	EBP combines knowledge and theory.		
6	EBP fills the gap between research theory and practice when utilized.		
7	There is a need of evidence-based practice in nursing.		
8	EBP is for nurse educators and also for those in the clinical area.		

### Part III: Sources of evidence for utilization of EBP

- I. To what extent do you personally use information from the following sources? Select and Put (✓) in the box below for each question.

s. no	Please respond to the next items by indicating the no 1, 2, 3, 4, or 5 that comes closer to what extent you trust with sources that you use for	1	2	3	4	5
1	Class room					
2	Hospital protocols					
3	National guidelines					
4	Training					
5	Colleague					
6	Personal experience					
7	Nursing journals					
8	Internet					

9	Textbooks					
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## Part VI. EBP activity questions to assess level of utilization of EBP among Nurses

s.no	Activities (How often have you personally involved in the following activities?)	Frequencies				
		[1] Never, [2] Sometimes (<1/month), [3] Usually (1-2times/month), [4] often (weekly), [5] Always (several times/week).				
		1	2	3	4	5
1	Asked clinical questions related with your nursing care practice					
2	Look for information, research, evidences, to support your nursing practice					
3	critically appraised any evidence which answers your clinical questions					
4	Use/integrating current evidence/guideline to guide the nursing care practice over					
5	Evaluate the outcome of using current evidence					
6	Sharing or Teaching others about new way of practice[current guideline to guide the nursing care practice]					

**Part V: Barriers to utilization of EBP**

<b>s. no</b>	Please respond to the next items by indicating the number 1, 2, 3, 4, or 5 that comes closer to how much you agree with barriers to utilization of EBP.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1</b>	Lack of autonomy to change practice					
<b>2</b>	Inadequate understanding of research terms					
<b>3</b>	Inability to understand statistical terms used in research					
<b>4</b>	Difficulty in judging the quality of research					
<b>5</b>	Inability to properly interpret the results of research					
<b>6</b>	Insufficient time at workplace to implement EBP					
<b>7</b>	Heavy workload at workplace to implement EBP					
<b>8</b>	Insufficient resources (e.g. equipment, internet, computer, protocols, guidelines ) to implement EBP					
<b>9</b>	The relevant literature is not available					
<b>10</b>	No confident in judging the quality of research					
<b>11</b>	Lack of authority in the work place to implement EBP					
<b>12</b>	Insufficient proficiency in English language					
<b>13</b>	The nurse is isolated from experienced colleagues with whom to discuss the research					
<b>14</b>	Physicians are not cooperative with the implementation					
<b>15</b>	Unjustified research conclusions to nursing					

<b>16</b>	Other staffs are not supportive of implementation					
<b>17</b>	Unclear implications of EBP for practice in nursing					
<b>18</b>	EBP has little benefits for nurses					
<b>19</b>	The culture of my team is not receptive to EBP implementation					
<b>20</b>	Uncertainty to believe the results of the research working to nurses' practice					

#### Part VI: Facilitators for utilization of EBP

<b>s. no</b>	Please respond to the next items by indicating the number 1, 2, 3, 4, or 5 that comes closer to what extent do you agree with the following items that support EBP utilization.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1</b>	Cooperative & supportive nursing colleagues					
<b>2</b>	Enhancing administrative support like nurse managers					
<b>3</b>	Improving research knowledge					
<b>4</b>	Sufficient staffing/human power					
<b>5</b>	Giving adequate training					

Thank you!!!