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Research Paper

Assessing the Utilization of Evidence-based Practices and Identifying the Determining Factors Influencing their Adoption among Nurses in Hospitals in Southern Ethiopia

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Abstract

Evidence-based practice is a clinical approach in which practitioners combine the latest research findings with their professional expertise to make informed decisions, taking into account the individual client's preferences and values. The study aimed to assess the trend of utilizing evidence-based practice and identifying determinant factors among hospital nurses in South Ethiopia. Data were collected using an institution-based cross-sectional study design at Wollayta Sodo and Halaba Kulito Hospital from March to April 2023. A simple random sampling method was used to select 418 hospital nurses. Data were inserted into EpiData version 4.6 and analyzed using SPSS version 26. Both bivariable and multivariable logistic regression analyses were conducted. Significant variables associated with the dependent variable were declared at p-value <0.05 with a 95% confidence interval. Overall, only 56% of the participants had good evidence-based practice utilization. Predictors including good knowledge level (AOR =6.88: 95% CI: 4.324–10.942), training evidence-based practices (AOR = 1.78:95% CI: 1.11–2.855), and having confidence in their work area (AOR = 2.19: 95% CI: 1.22–3.929) were significantly associated with evidence-based practices utilization. The overall utilization of evidence-based practice is relatively low. Nurses who have good knowledge of EBP, are taking training, and have confidence in the working areas are the predominant predictors. Therefore, enhancing nurses' knowledge by including EBP in the nursing curriculum and providing training about evidence-based practices to enhance the utilization of EBP.

1. Introduction

Evidence-based practice (EBP) is a clinical approach in which practitioners combine the best available evidence with their expertise to guide decision-making (Melnyk & Fineout-Overholt, 2022). EBP is mainly used in the clinical decision-making process by searching the best available literature (Portney, 2020). High-quality scientific research findings can be gathered and used to inform the best practical actions to

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enhance the healthcare delivery system (Jeremy, 2015). Currently, EBP is essential in clinical nursing practice (Degu et al., 2022). The EBP process includes five elements: formulating questions, literature search, critical appraisal, applying, and assessing outcomes of care (Adamakidou, 2023). Although evidence-based practice (EBP) is utilized in many other professions, its application in nursing is expanding quickly (Swito et al., 2021). Evidence-based practice facilitates the transition from traditional to scientifically based practice (Aynalem, et al., 2021). Also, it lowers expenses, enhances patient outcomes, and establishes high-quality treatment (Alqahtani et al., 2022), high job satisfaction (Kim et al., 2016), increases working efficiency (Lai et al., 2022), and fills the gap between theories and practice (Saleh, 2023).

Implementing EBP depends on a research-based healthcare environment, nurses' commitment, leadership support, access to high-quality information, and attitudes toward research (Megersa et al., 2023). There has been increased attention to evidence-based practice despite that the application of evidence to practice remains challenging (Hadgu et al., 2015). The five biggest challenges to utilizing EBP were lack of time, reading habits of published materials, inaccessible organizational information, and lack of confidence in evaluating the research (Leach et al., 2021). Knowledge, attitudes, and training were hindrances to integrating EBP into clinical practice (Minnig et al., 2022).

Experts feel that a lack of support from health institutions hinders the use of study findings in clinical practice (Magalhães et al., 2020). The majority of research has been done on industrialized nations, although available in Ethiopia (González-Torrente et al., 2012). It's difficult to apply evidence-based practice in Africa. Africa is behind in research and finding scientific evidence. However, a few Africans support EBP, including South Africa, Botswana, Nigeria, Kenya, Malawi, and Egypt (Kaseka, 2022). Experience, tradition, and common sense are the trends in utilizing EBP in nursing in Ethiopia. Even if there is a dearth of research findings, lack of utilization of those findings in clinical practices (White-Williams et al., 2013).

In developed regions, Norway 34% (Stokke K, 2014), Sweden 30% (Anne-Marie, 2013), and China 59.8% of nurses use research in their clinical practices (Zhao et al., 2022). In Africa, South African 52.4% of (Tshivhase et al., 2016), and Ethiopia 53% of nurses utilize EBP (Wudu et al., 2024). EBP is crucial in the overall healthcare delivery system to reduce escalated healthcare costs, save time, and improve patient outcomes. Although the benefit is high and implementation of EBP is challenging, not enough evidence on utilizing evidence-based practices in South Ethiopia. Therefore, the study aims to assess utilizing evidence-based practices and identifying determinant factors associated with evidence-based practice utilization among nurses working in the hospital in South Ethiopia.

2. Methods and Materials

2.1. Study Setting, Design, and Participant Eligibility

An institution-based cross-sectional study was conducted from March to April 2023 at Wollayta Sodo and Halaba Hospitals, SNNPR. Wollayta Sodo, the capital city of the Wollayta zonal administration, is located 338 km from Addis Ababa. Wollayita Sodo Hospital has 20 specialists, 210 GPs, 420 nurses (20 MSc, 357 BSc, and 43 diplomas), and 210 midwives. Halaba Town is the capital city of Halaba zonal administration and 239.7 km away from Addis Ababa. Halab Kulitu Hospital has 10 specialists, 31 GPs, 98 nurses (1 MSc, 75 BSc, and 22 diplomas), 25 Midwifery, and 11 HO. Nurses working in Wollayta Sodo and Halaba Qulito Hospital were considered as the study participants., Hospital nurses who were on

maternity leave, or annual leave, and critically ill nurses were excluded from the study.

2.2. Sample Size Determination and Procedure

The sample size was calculated using a single population proportion formula, with a 95% confidence level, a 0.05 margin of error, and a 55% (p = 0.55) utilization of EBP, based on a study conducted in West Shoa, Central Ethiopia (Megersa et al., 2023).

$n = (Z)^2 p (1-p)/d^2$,

$n= (1.96)^2 (0.55) (0.45)/ (0.05)^2$,

n = 380

The total sample size adjusted with a 10% non-response rate to monitor bias results from individuals who refused to take part in a study, or who dropped out before completing was 418.

n = Sample size; N = Study population; P = 0.55 prevalence; d = the margin of sampling error tolerated (0.05), and Z = standard score corresponding to 95% CI= 1.96. The study subject was selected proportionally using a simple random sampling technique (Figure).

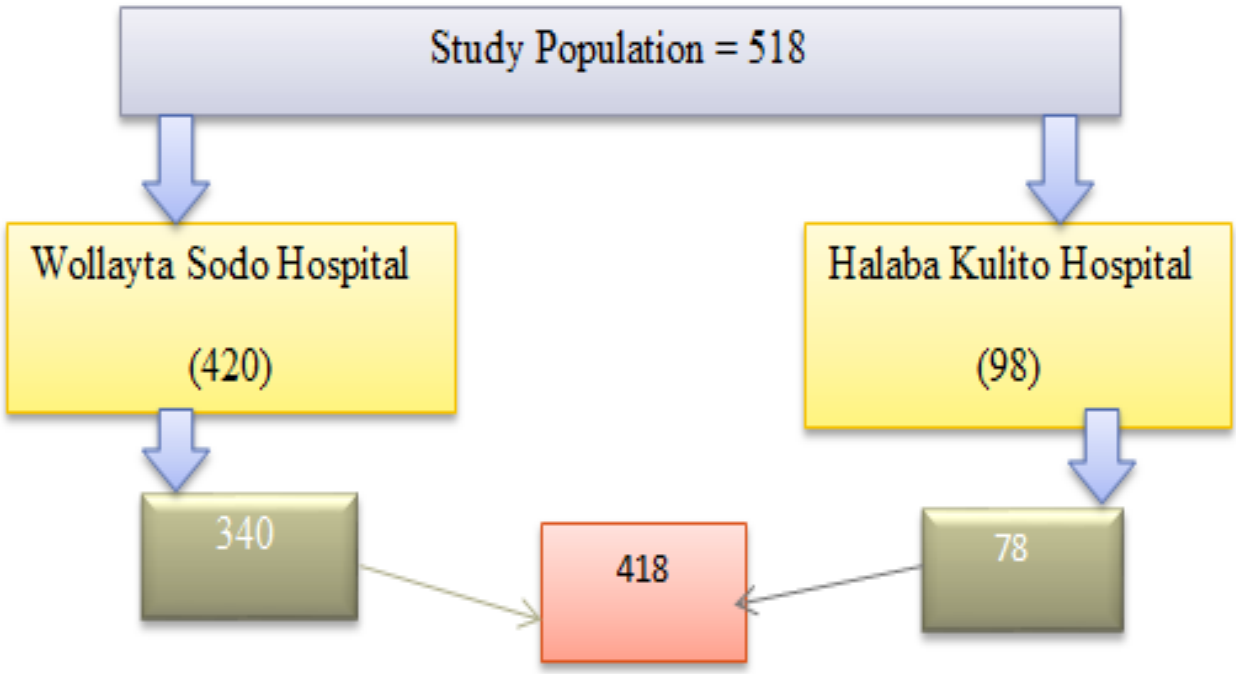

Figure 1: Schematic presentation of sampling procedure among nurses in Wollayta Sodo and Halaba Kulito Hospital

2.3. Data Collection Instrument, Quality Control and Processing

A standardized self-administered questionnaire was used and the questionnaire has five sections. The first socio-demographic information related; to age, sex, religion, ethnicity, marital status, and income. The second individual-related variables: are educational level, work experience, working unit, working hours per week, use of guidelines, and having confidence in work. The third psychomotor variable**:** is knowledge, and attitude, fourth EBP utilization-related questionnaire. The fourth part utilization of EBP had 12 statement questions in the level of utilization of EBP with each item having 7 response choices from never = 0 to frequent 7 with a minimum score of 0 and a maximum score of 84 with reliability and validity of 0.91 Cronbach's alpha coefficient (Youssef, 2023). Nurses who score equal to or above the mean since symmetrically distributed data of EBP utilization score were used as a cut-off point to

categorize as having good EBP utilization and poor EBP utilization (Oude, 2013). A nurse who scored equal and above the mean score was considered to have good EBP utilization, while below was considered as poor EBP utilization. The attitude part has 7 statements with a 5-point Likert scale (5=strongly agree, 4= agree, 3=Neutral, 2=disagree, 1= strongly disagree) with a minimum score of 7 and a maximum score of 35. Nurses who score equal to and above the mean have favorable attitudes, otherwise unfavorable attitudes. The knowledge part has 7 statements with dichotomous questions (2=Yes, 1=No) with minimum scores of 7 and maximum scores of 14. Nurses who answered equal to or above half of the knowledge-related questions have good knowledge about EBP, otherwise poor knowledge (Megersa et al., 2023).

Training and orientation were provided to the data collectors and supervisors. Informed consent was obtained from the study participants. A standardized self-administered questionnaire was used and since the study participants were health care professionals the questionnaire was prepared in English language. The filled questionnaire was submitted to the principal investigator timely. A pretest was done on 5% of similar study subjects in Worabe Comprehensive Hospital before one week of data collection. The collected data was reviewed and checked for incompleteness.

Data were manually checked for completeness and internal consistency. Any missing or incomplete data were excluded to ensure quality control. The data were entered into EpiData version 4.6 and analyzed using SPSS version 25. Descriptive statistics, including frequency distribution, median, and mean, were used to summarize the variables. Binary logistic regression was performed to assess the association between the outcome variable and its predictors. Variables with a p-value less than 0.25 were considered candidates for multivariable logistic regression analysis. In the multivariable logistic regression, variables with a p-value less than 0.05 were considered statistically significant. Adjusted odds ratios (ORs) along with their corresponding 95% confidence intervals (CIs) were calculated to measure the strength of the associations. The results of this study were presented in text, tables, and figures. Ethical approval was granted by the Wolkite University (WKU) College of Medicine and Health Sciences Institutional Review Board (IRB), with ethical approval number RCSUILC/14/2023. Written informed consent was obtained from all participants, who were informed of their right to refuse or withdraw from the interview at any time. Participants were also assured that the extracted information would be used solely for this study and would not be shared with any third parties.

3. Results

3.1. Socio-Demographic Characteristics

From the total of 418 participants, 382 nurses participated in the study with a response rate of 91.4%. The majority of the respondents, 172 (45.0%) were under the age of ≥35. Two-thirds of them were females 242 (63.4%) and 228 (59.7%) were married. Most of the respondents were BSc degree holders 340 (89%).

Table 1: Distribution of respondents by their basic socio-demographic characteristics of hospital nurses, South Ethiopia 2023 (n=418)

Variables	Category	Frequency	Percent (%)
Age group	25-29	116	30.4
	30-35	94	24.6
	>=35	172	45.0
Sex	Male	140	36.6
	Female	242	63.4
Marital status	Single	115	31.1
	Married	228	59.7
	Widowed	16	4.2
	Divorce	23	6.0
Salary	<4650	2	5
	4650-5294	20	5.2
	5294-7111	115	30.1
	>7111	245	64.1
Education level	Diploma	30	8
	BSc	340	89
	MSC	12	3

3.2. Nurses' Utilization of Evidence-Based Practice

In this study, 56.28% of nurses demonstrated good utilization of evidence-based practice, while 43.72% had poor utilization.

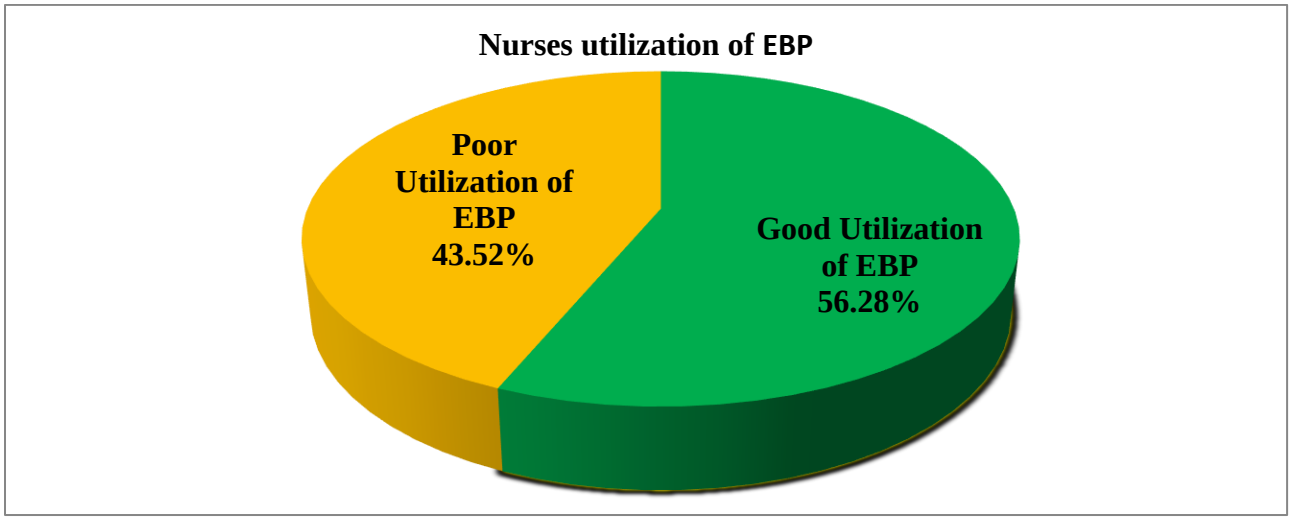

Figure 2: Utilization of evidence-based practice of hospital nurses, South Ethiopia 2023

3.3. Knowledge of nurses about the utilization of EBP

Among the 382 participants, 244 (63.9%) recognized EBP as a problem-solving approach, while 236 (61.8%) understood that it enhances the delivery of high-quality nursing care. Additionally, 174 (45.5%) acknowledged that EBP integrates research with knowledge and theory. The majority, 181 (47.4%), agreed that it bridges the gap between research, theory, and practice.

Table 2: Nurses' knowledge about the evidence-based practice of hospital nurses, South Ethiopia 2023 (n=418)

Variables	Category	Frequency	Percent (%)
Having a concept on EBPU	No	118	30.9
	Yes	264	69.1
Problem-solving approach	No	138	36.1
	Yes	244	63.9
Highest quality of care	No	146	38.2
	Yes	236	61.8
Combines knowledge and theory	No	208	54.5
	Yes	174	45.5
Filled the gap b/n research theory and practice	No	201	52.6
	Yes	181	47.4
Need for evidence-based practice	No	148	38.7
	Yes	234	61.3
Need for nurse educators and clinical	No	184	48.2
	Yes	198	51.8

In the study, 210 (55%) of them had good knowledge about the utilization of EBP, while 172(45.0%) nurses had poor knowledge utilization of EBP.

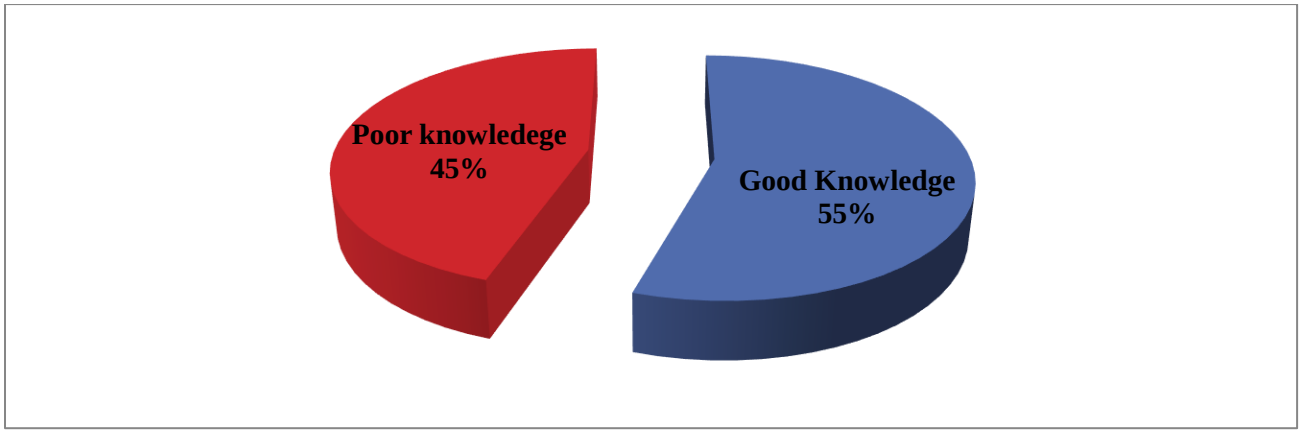

Figure 3: Evidence-based practice of hospital nurses in South Ethiopia, 2023

3.4. Attitude towards Evidence-based Practice

Based on this finding, 50.5% of respondents are neutral about the use of research findings, 29.1% of respondents agreed that using new approaches is better than traditional methods, and 34.3% disagreed that EBP has not limited utility in their practice.

Of the participants, 199(52.1%) respondents had a good attitude towards EBP, while 183(47.9%) of nurses had poor attitude.

Table 3: Frequency of Attitude towards evidence-based practice utilization of hospital nurses, South Ethiopia, 2023 (n=418)

Activities	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	N	%	N	%	N	%	N	%	N	%
People questioning my clinical practices	20	5.2	90	23.6	105	27.5	109	28.5	58	15.2
Using more traditional methods	7	1.8	97	25.4	145	38	111	29.1	22	5.8
Research articles are relevant to my daily	12	3.1	86	22.5	193	50.5	77	20.2	14	3.7
Improving patient care quality	9	2.4	96	25.1	135	35.3	105	27.5	37	9.7
EBP has not limited	10	2.6	131	34.3	148	38.7	76	19.9	17	4.5
My workload is not too high	7	1.8	119	31.2	133	34.8	88	23.0	35	9.2

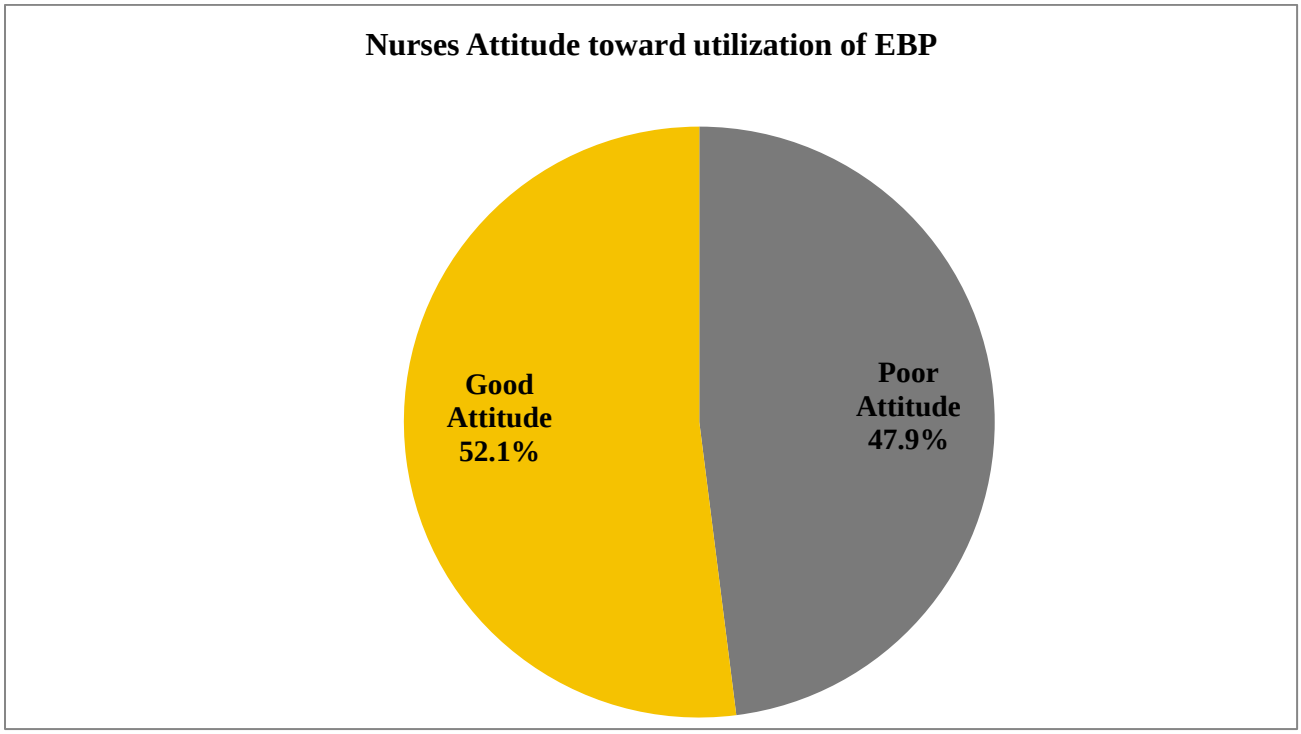

Figure 4: Evidence-based practice utilization of hospital nurses, South Ethiopia 2023

3.5. Individual related factors

Among the 382 nurse respondents, 152 (39.8%) had not received EBP training, either as part of their curriculum or separately. Additionally, 167 (43.7%) had no research experience, and 215 (56.3%) faced challenges in interpreting research findings. Furthermore, 73 (19.1%) reported a lack of willingness to utilize EBP, while 157 (41.1%) lacked the basic computer skills needed to search for evidence.

Table 4: Individual related factors about the evidence-based practice of hospital nurses, South Ethiopia 2023. (n=418)

Variables	Category	Frequency	Percent
Basic computer skill	No	157	41.1
	Yes	225	58.9
Research experience	No	167	43.7
	Yes	215	56.3
Willing to utilize EBP	No	73	19.1
	Yes	309	80.9
Understanding statistical terms	No	159	41.6
	Yes	223	58.4
Ability to interpret research	No	211	55.2
	Yes	171	44.8
Taking EBP course	No	152	39.8
	Yes	230	60.2
Sufficient time to find research	No	277	72.5
	Yes	105	27.5
Sufficient time to organize	No	212	55.5
	Yes	170	44.5
Easy to find research reports	No	215	56.3
	Yes	167	43.7
Know how to find organizational information	No	97	25.4
	Yes	285	74.6
Confident about beginning	No	76	19.9
	Yes	306	80.1
Staff position	Staff Nurse	371	97.1
	Team coordinator	11	2.9
Year of experience	<5 years	155	40.6
	5-10 years	187	49.0
	>10 years	40	10.5
Working hours per week	>39 hours	382	100
Working unit	Medical	66	17.3
	Surgical	56	14.7
	ICU	45	11.8
	EOPD	50	13.1
	OPD	42	11
	Others*	123	32.2
Source of evidence	Training	34	8.9
	Hospital protocol	198	51.8
	National guideline	79	20.7
	Internet	19	5
	Personal experience	30	7.9
	Other**	22	5.8

*Includes; Gyn ward, orthopedic, ophthalmic, psychiatry
**includes; collage, classroom, textbook, nursing journals

3.6. Factors Associated with the Utilization of EBP

Nurses having good knowledge about EBP had a strong association, which was seven times (AOR = 6.88, 95% CI: 4.324–10.942) more likely to have EBP utilization than those participants who had poor knowledge status. Also, nurses who have training were significantly associated, which was 2 times (AOR = 1.78, 95% CI: 1.11–2.855) more likely to have EBP utilization than those who did not attend training. Nurses who have self-confidence in their work were statistically significant, which was two times (AOR = 2.19, 95% CI: 1.22–3.929) more likely s associated with the utilization of EBP.

Table 5: Bivariable and multivariable logistic regression analyses of factors associated with utilization of evidence-based practice (EBP) of hospital nurses, South Ethiopia 2023 (n=418)

Variable	Categories	Good EBPU No (%)	Poor EBPU No(%)	COR (95%CI)	AOR (95%)	p-value
Age	25-29	62(53.4)	54(46.6)	0.751 (0.466-1.208)	0.838(0.484-1.452)	
	30-34	49(52.1)	45(47.9)	0.712 (0.429-1.182)	0.566 (0.314-1.019)	
	>=35	104(60.5)	68(39.5)	1	1	
Marital status	Single	57(49.6)	58(50.4)	1.278 (0.518-3.148)	1.486 (0.507-4.354)	
	Married	141(61.8)	87(38.2)	2.107 (0.886-5.012)	2.180 (0.791-6.005)	
	Widowed	7(43.8)	9(56.2)	1.011 (0.279-3.661)	1.444 (0.323-6.446)	
	Divorce	10(43.5)	13(56.5)	1	1	
Knowledge status	Poor Knowledge	54(31.4)	118(68.6)	1	1	
	Good Knowledge	161(76.7)	49(23.3)	7.18 (4.561-11.303)	6.88(4.324-10.942)*	0.0001
Willing to utilize EBP	No	30(41.1)	43(58.9)	0.468 (0.278-0.786)	1.117 (0.601-2.076)	
	Yes	185(59.9)	124(40.1)	1	1	
Taking EBP training	No	68(44.7)	84(55.3)	1	1	
	Yes	147(63.9)	83(36.1)	2.188 (1.441-3.326)	1.78 (1.11-2.855)*	0.017
Find research reports	No	164(59.2)	113(40.8)	1.537 (0.978-2.414)	1.162 (0.671-2.012)	
	Yes	51(48.6)	54(51.4)	1	1	
Easy to find research	No	113(52.6)	102(47.4)	1	1	
	Yes	102(61.1)	65(38.9)	1.416 (0.94-2.135)	1.274 (0.778-2.086)	
Organizational information	No	45(46.4)	52(53.6)	1	1	
	Yes	170(59.6)	115(40.4)	1.708 (1.074-2.717)	1.438(0.816-2.509)	
Having confidence	No	30(39.5)	46(60.5)	1	1	
	Yes	185(60.5)	121(39.5)	2.34 (1.402-3.919)	2.19 (1.22-3.929)*	0.009
Working unit	Medical	37(59.1)	29(43.9)	1.340 (0.734-2.444)	1.109 (0.546-2.252)	
	Surgical	28(50.0)	28(50.0)	1.050 (0.558-1.975)	0.999(0.469-2.129)	
	ICU	30(66.7)	15(33.3)	2.10 (1.029-4.287)	1.088 (0.468-2.532)	
	Emergency	33(66.0)	17(34.0)	2.038 (1.029-4.038)	1.793 (0.806-3.988)	
	OPD	27(64.3)	15(35.7)	1.890 (0.917-3.896	1.419 (0.611-3.294)	
	Other	60(48.8)	63(51.2)	1	1	

EBPU =Evidence Based Practice Utilization; AOR = Adjusted Odd Ratio; COR = Crude Odd Ratio; Where: 1 = Reference; *includes P value less than 0.05 in multivariable logistic regression.

4. Discussion

In this study, 56% of nurses demonstrated good utilization of evidence-based practice, which is similar to findings from studies conducted in South Africa (52.4%) (Mndzebele & Tshivhase, 2016) and among nurses at Northwestern State University Hospital (48%) (Tanner et al., 2004). These results are also in line with studies in West Shoa Zone (52.4%) (Megersa et al., 2023), Amhara Regional Hospitals (55%) (Aynalem et al., 2021), and Tikur Anbessa Hospital (57.6%) (Hadgu et al., 2015), where nurses utilized research-driven evidence in care provision. Additionally, a systematic review and meta-analysis conducted in Ethiopia reported a pooled

prevalence of 53% for evidence-based practice uptake by nurses (Wudu et al., 2024).

However, this finding is lower compared to studies done in Southwest Ethiopia (81.1%) of nurses used EBP during patient care (Wubante & Tegegne, 2022). This inconsistency may be due to variation in knowledge about EBP, which was reported that most of the participants had a better prevalence of knowledge about EBP (81.2%) compared with the prevalence of knowledge about EBP (55%) in this study finding.

The current study finding is good when compared with a study done in Sweden 30% (Boström et al., 2013), Norway 34% (Stokke et al., 2014), Nigeria nurses 30.9% (Oluwatoyin & EkeFJH, 2016). This difference might be due to the differences in methodology like sample size (small number of study participants involved in the previous), and also the study employed only in a single health facility; even the time of the study done before five years may affect the finding.

This study found that individuals with good knowledge of EBP were 7 times more likely to utilize EBP (AOR = 6.88, 95% CI: 4.324–10.942) compared to those with poor knowledge. This finding is consistent with studies done in Australia (Shifaza et al., 2014), China (Zhao et al., 2022), and Norway (Stokke et al., 2014). Also, this finding is analogous to the study done in West Shoa Zone (Megersa et al., 2023), Amhara Regional Hospitals (Aynalem et al., 2021), but inconsistent with the study done in Tikur Anbessa Specialized Hospital (Hadgu et al., 2015). The possible explanation for this could be knowledge about EBP may increase their appraisal skills and give them more confidence in utilizing EBP. In addition, knowing EBP may increase their appraisal skills and give them more confidence in utilizing EBP. Also, nurses who have good knowledge status increase their critical analysis of the evidence against set standards, retrieving evidence, awareness of major information sources, information technology, appropriate research skills, and converting information needs into research questions.

Also, having training about EBP was significantly associated with the utilization of EBP. It was observed that nurses who attend EBP training were two times more likely to have good EBP utilization than those who do not attend training. This finding is similar to studies conducted in Spanish (González-Torrente et al., 2012), Northwestern State University (Tanner et al., 2004), and Northwest Ethiopia (Beshir, Woreta, & Kebede, 2017). The reason for this might be due to continuous professional development training demonstrating a sustainable higher increase in their level of competency than those who received the usual traditional in-service education, and training may help nurses to update themselves and seek new information to be clearer and more understandable. Moreover, a study found that those respondents who had attended EBP training became more comfortable in integrating EBP into their practice.

In this study having self-confidence in their work area was significantly associated with the utilization of EBP. It was observed that confident nurses were two times more likely to have good EBP utilization compared to those who have not been confident in their work area. This finding is similar to the study reported from Northern Israel (Eizenberg, 2011), and a study done in Southwest Ethiopia (Degu et al., 2022). This might be due to those who have confidence in their work area who can rely on their skills and strengths to handle whatever comes up; feel ready for everyday challenges like tests, performances, and competitions, and think "I can" instead of "I can't". Also, having confidence in the work area allows the nurses to believe they have the

potential to achieve and reduce their fear of failing or wrong action.

5. Conclusion and Recommendation

The overall utilization of evidence-based practice is relatively low. Nurses who have good knowledge of EBP, are taking training, and have confidence in the working areas are the predominant predictors. Therefore, enhancing the knowledge of nurses by including EBP in the nursing curriculum and providing training about evidence-based practices to enhance the utilization of EBP.

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