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Evidence-based practice utilization and associated factors among nurses in the emergency department of selected public hospitals, Addis Ababa, Ethiopia, 2024: cross-sectional study

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Abstract

Background Evidence-based practice use refers to the integration of current, reliable, and relevant evidence into healthcare decision-making. This includes findings from studies, professional experiences, and updated guidelines aimed at minimizing biases and enhancing clinical decisions based on comprehensive research.

Objective This study aimed to evaluate the use of evidence-based practices and identify associated factors among nurses working in the emergency departments of selected public hospitals in Addis Ababa, Ethiopia, in 2024.

Methods This institution-based cross-sectional study assessed evidence-based practice use among emergency department nurses. A lottery method of simple random sampling was used to select 233 participants from 542 nurses registered in the nurse manager office. Only 233 nurses were invited to participate in the study, and only 225 responded, resulting in a non-response rate of 3.4% (equivalent to 8 nurses). Data were collected using a self-administered questionnaire that was adapted and modified, comprising six sections with 59 items. Binary logistic regression was used to explore the associations between dependent and independent variables. Variables with a *P* value of less than 0.05 were deemed significantly associated with the utilization of evidence-based practices.

Results Among the 225 nurses who participated in the study, 101 nurses (44.9%, 95% CI: 39.0–52.0%) demonstrated good use of evidence-based practice. The analysis revealed several factors associated with the use of evidence-based practice. Female nurses had an adjusted odds ratio (AOR) of 1.4 (95% CI: 1.201–3.923) for evidence-based practice use compared with male nurses. Nurses with a Master's degree (AOR = 6.786, 95% CI: 1.141–40.352) and coordinator nurses (AOR = 13.191, 95% CI: 1.843–94.414) were also more likely to utilize evidence-based practices than staff nurses. Additionally, nurses with good knowledge of evidence-based practices had an AOR of 3.801 (95% CI: 1.700–8.498), and those who believed that relevant literature was unavailable had an AOR of 3.316 (95% CI: 1.334–8.246).

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Conclusion This study identified important factors affecting the use of evidence-based practice among nurses. Female nurses, those with advanced degrees, and nurse coordinators are more likely to engage in this practice. Good knowledge of evidence-based methods enhances their utilization, whereas beliefs about limited access to relevant literature can hinder such utilization. These findings suggest that improving education and access to research resources could boost patient care outcomes. Additionally, nursing leaders and administrators can help overcome barriers by providing training, allowing time off for EBP activities, and adjusting work schedules accordingly.

Keywords Evidence-based practice, Evidence-based practice use

Background

Evidence-based practice utilization (EBP) involves the application of current, reliable, and relevant evidence in healthcare decision-making, incorporating study findings, professional experience, and updated guidelines [1]. Evidence-based practice utilization has been recognized for over twenty-six years, with at seminal publication by Sackett et al. released in 1992, which laid the foundation for the principles of evidence-based medicine [2].

EBP employs recent scientific research to inform clinical decisions by synthesizing relevant findings from clinical expertise and patient preferences [3]. Professionals often encounter challenges in delivering best practices aligned with their skills [4]. Although EBP is a crucial tool for improving care consistency and generating knowledge, evidence supporting its effectiveness in enhancing health outcomes and patient satisfaction remains limited [5].

EBP is essential for improving patient outcomes by reducing pain, length of stay, and stress. Furthermore, it promotes collaborative decision-making with patients during care planning and enhances critical thinking [6].

Designed to mitigate biases, EBP supports the clinical application of comprehensive studies for informed decision-making [7]. EBP may lower healthcare costs by reducing unnecessary testing, therapies, and medications [8].

As healthcare evolves rapidly because of technological advancements and changing client needs, the importance of evidence-based treatment methods has becomes increasingly evident [9, 10].

Evidence-based practice is gaining traction globally, supported by the growing availability of tools for gathering scientific information, including publishing processes and decision-making technologies [11]. However, EBP implementation in low-income countries faces significant challenges. These challenges include a lack of established standards, limited integration of EBP training in medical education [12], and reliance on personal experiences rather than current research. Consequently, medical interventions often reflect outdated recommendations, resulting in inadequate quality of care that is time-consuming, costly, and resource-intensive [13].

In contrast, high-income countries have made strides in adopting evidence-based practices, driven by support from global organizations and an increasing demand for high standards of care [14]. Despite this progress, many nurses continue to rely on the opinions of experienced colleagues rather than the latest research data [15]. The pressure to implement EBP is further exacerbated by factors such as rising healthcare costs and consumer expectations for quality treatment. Policymakers worldwide are motivated to endorse EBP as a means to enhance healthcare delivery and ensure efficient resource management [16].

For instance, in the - United States, Canada, and the United Kingdom, EBP is widely accepted, with governing bodies recognizing its impact on outcomes and efficiency in public health [17]. In Contrast, low-income nations, such as Ethiopia, could significantly benefit from stronger evidence-based practices (EBP), which could enhance healthcare delivery by addressing existing challenges [17, 18]. Common barriers in these regions include time constraints and limited access to quality studies. Additionally, inadequate communication often occurs between researchers and policymakers, which hampers effective implementation [19]. The World Health Organization (WHO) notes that in Africa, research findings are primarily confined to educational institutions, with a lack of information on improving healthcare delivery through EBP [20].

According to the WHO, the use of research findings is restricted in Africa to educational and academic institutions, and there exists a shortage of information about how to enhance high-quality healthcare delivery, standards of care, and quality lifestyles through EBP [21, 22].

There is a significant gap in established standards and studies related to EBP on a global scale, with many influencing variables for its use remaining poorly defined. This highlights the urgent need for comprehensive global research. Existing studies often neglect the unique challenges faced by healthcare professionals in low-income countries regarding EBP.

Furthermore, although some barriers to EBP have been identified, their specific impacts on nursing practice have not been well documented. Addressing these gaps is essential for enhancing the implementation of EBP and improving healthcare outcomes worldwide. There is also a lack of tailored training programs that address the distinct needs of nurses in various regions [23]. This

research aims to enhance the understanding of the challenges related to EBP in various contexts and to identify effective strategies for overcoming barriers to EBP adoption. The findings could help policymakers and educational institutions implement necessary interventions to improve EBP among nurses. Despite EBP being the gold standard in nursing, its use remains low because of several challenges. Targeted research and interventions can significantly enhance patient care outcomes and support professional nursing development. Therefore, this study assessed EBP and its associated factors among nurses in the emergency departments of selected public hospitals in Addis Ababa, Ethiopia, in 2024.

Methodology

Study design, area, and period

An institution-based cross-sectional study was conducted in six selected public hospitals in Addis Ababa from March 14 to April 14, 2024. Addis Ababa, the capital of Ethiopia, has an estimated population of 8,938,683 and covers 540 square kilometers. The hospitals included are Tikur Anbessa Specialized Hospital, St. Paul's Hospital Millennium Medical College, Menelik II Referral Hospital, Zewditu Hospital, Tirunesh Beijing General Hospital, and Eka Kotebe General Hospital.

Inclusion criteria

Nurses with at least six months of experience in the emergency department were included.

Exclusion criteria

Nurses who are students, involuntarily absent, or unavailable during the study period were excluded.

Sample size and sampling procedure

Sample size determination

The sample size was calculated using a single population proportion formula based on a 34.7% proportion of nurses utilizing evidence-based practice in their clinical practice (3), with a 95% confidence interval and a 5% margin of error.

$$\mathrm{n} = \frac{\left(\frac{Z\alpha}{2}\right)^2 P(1-P)}{d^2} \quad \mathrm{n} = \frac{(1.96)^2 0.347(1-0.347)}{0.05^2} = 348$$

; n = sample size
z@/2 = critical value for normal distribution at 95% confidence interval
d = margin of error
p = proportion

Because the total population was less than 10,000, a correction formula was used:

$$\mathrm{nf} = \mathrm{n}/(1 + \mathrm{n}/\mathrm{N}),\ \mathrm{nf} = 348/\ (1 + 348/542) = 212$$

N total number of nurses working in the EDs of public hospitals in Addis Ababa (542).

Based on the above formula and after adding a 10% nonresponse rate, the total final sample size was 233, and data were collected from 233 nurses.

Key informants

Our study employed a cross-sectional design, utilizing self-administered questionnaires to collect data from nurses working in Emergency Departments. This approach allowed us to assess evidence-based practice in emergency departments. We did not involve key informants in this study, as our focus was on gathering quantitative data through structured questionnaires. The use of self-administered questionnaires enabled us to efficiently collect data from a large number of participants, providing a comprehensive overview of their knowledge and practices.

Sampling procedure and technique

Six public hospitals were randomly selected from a total of 13 public hospitals in Addis Ababa by lottery to optimize the management of available resources, including time, budget, and personnel. The lottery method involves assigning unique numbers to participants, placing the numbers on slips of paper, and mixing them in a container. A random drawing selects the participants, ensuring that each has an equal chance of being chosen. This technique provides a simple and unbiased approach to random sampling. We first determined the total number of nurses registered in the nurse manager office by compiling their names and total counts. Using a computerized simple random sampling method; we selected 233 nurses from 542 nurses working in the Emergency Departments (ED) across these hospitals. The sample size was proportionally allocated to each selected hospital based on the number of nurses in their EDs, resulting in the following distribution: Tikur Anbessa Specialized Hospital (70 nurses), St. Paulo's Hospital Millennium Medical College (62 nurses), Zewditu Memorial Hospital (36 nurses), Eka Kotebe Hospital (25 nurses), Menelik II Hospital (22 nurses), and Tirunesh Beijing General Hospital (18 nurses). This allocation ensured that the selection process was randomized and representative of each hospital's workforce. We invited all 233 selected nurses to participate in the study, and 225 responded, resulting in a non-response rate of 3.4% (equivalent to 8 nurses). Finally, the data collectors distributed each questionnaire based on the randomly selected sample of nurses provided by the principal investigator (the sample had already been identified).

Operational definitions [24]

The "mean of the EBP score" refers to the average score calculated from all participants' responses to the total questionnaires. This average serves as a benchmark for evaluating Evidence-Based Practice (EBP) use in our study sample.

Good EBP utilization

Nurses with scores equal to or above the average EBP score derived from all participants, indicating the effective use of evidence-based practices.

Poor EBP utilization

Nurses with a score below the average EBP score had less effective use of evidence-based practices.

Good knowledge

Nurses who answered correctly and scored equal to or above the average score from knowledge-related questions across all participants, reflecting a solid understanding of relevant concepts.

Poor knowledge

Nurses who answered correctly but scored below average on knowledge-related questions, indicating a limited grasp of essential knowledge.

Data collection tools and procedures

The authors adapted and modified existing questionnaires to align with the characteristics of the participants and the low-resource study setting in Ethiopia. Data were collected using a self-administered questionnaire that incorporated these adjustments [25]. The questionnaire consisted of six parts, containing 67 items. The study collected sociodemographic information (7 items), assessed nurses' knowledge of Evidence-Based Practice (EBP) (10 items), evaluated nurses' perceptions (10 items), identified sources of EBP (9 items), examined barriers to EBP utilization (20 items), and explored facilitators for EBP utilization (11 items). EBP was assessed using a dichotomous (yes/no) questionnaire. The tool was pretested with participants outside the study setting to ensure its accuracy. Corrections were made based on feedback received from the pretest participants who were not part of the study sample, and a reliability test (Cronbach's alpha) was conducted, yielding a score of 0.89.

Sources, utilization, and facilitators were rated on a scale from "never" to "always." Barriers were measured using a 5-point Likert scale. EBP use consisted of six questions rated on a 5-point scale, yielding scores ranging from 6 to 30, while knowledge scores ranged from 12 to 60. Data were collected by three trained data collectors under supervision. The data collectors distributed each questionnaire based on a randomly selected sample of nurses provided by the principal investigator, who had already identified the sample.

Data quality control

Questionnaires were pretested for 10% of the final sample size at St. Petros Specialized Hospital, with unclear items revised. This study was performed using participants outside the study setting to ensure its accuracy. Corrections were made based on feedback received from the pretest participants who were not part of the study sample. Data collectors and supervisors received one day of training to ensure data quality. The principal investigator supervised the data collection process daily, and data consistency and completeness were checked throughout entry and cleaning.

Data analysis and interpretation

Data were coded and entered Epi Data version 4.6 and then exported to SPSS version 27 for analysis. Standard residuals were analyzed for outliers, and multicollinearity was assessed using the variance inflation factor (VIF); variables with a VIF greater than 10 were excluded. Descriptive statistics included means for continuous variables and frequencies and percentages for categorical variables. Binary logistic regression was used to assess the associations between dependent and independent variables, with those having a P-value < 0.05 were considered significantly associated with EBP. Findings were presented in figures, tables, graphs, and charts.

Normality

We assessed the normality of our data distribution using visual inspection via histograms in SPSS, as well as statistical tests. The sociodemographic data exhibited an asymmetrical distribution, prompting us to use the median as a measure of central tendency for these variables. However, the main outcome variables were found to be normally distributed, which justified the use of parametric statistical tests for analysis. This approach ensured that our statistical methods were appropriate for the data characteristics.

Ethical approval

Informed consent was obtained from all participants. The ethical review board of the College of Health Sciences at Addis Ababa University approved this study (approval number: 02–008) on September 1, 2024. The study was conducted in accordance with the ethical standards outlined in the 1964 Declaration of Helsinki and its later amendments, or comparable ethical standards.

Table 1 Socio-demographic profile of nurses working in the emergency department (*N* = 233)

Variables	Category	Frequency (*n* = 225)
Age	<= 25 years.	39(17.3%)
	26–30 years.	93(41.3%)
	31–35 years.	63(28.0%)
	> 35 years.	30(13.3%)
Sex	Male	97(43.1%)
	Female	128(56.9%)
Marital status	Married	107(47.6%)
	Single	96(42.7%)
	Widowed	7(3.1%)
	Divorced	15(6.7%)
Work experience with nursing	<= 5 years.	95(42.2%)
	6–10 years.	94(41.8%)
	11–15 years.	29(12.9%)
	> 15 years.	7(3.1%)
Level of Education	BSC	197(87.6%)
	MSc and above	28(12.4%)
Level of position	Staff nurse	204(90.7%)
	Coordinator	21(9.3%)
Monthly income	<= 5250 ETB	4(1.8%)
	5251–7800 ETB	100(44.4%)
	7801–10,900 ETB	101(44.9%)
	>10,900 ETB	20(8.9%)

1 US Dollar (USD) = 127.12 Ethiopian Birr (ETB) 3

1 Euro (EUR) = 133.81 Ethiopian Birr (ETB)

EBP Evidence-Based Practice Utilization, *ETB* the Ethiopian Birr

Result

Sociodemographic profile of the participants

A total of 233 respondents participated in the study, yielding a response rate of 96.6%. The median age was 30 years, with the majority (*n* = 93, 41.3%) falling within the 26–30-year age range. Female respondents comprised 57.8% (*n* = 130) of the sample. Most participants had a Bachelor of Science degree (*n* = 197, 87.6%), and 42.2% (*n* = 95) had five years or less of work experience. Additionally, 92.2% (*n* = 209) held staff nurse positions (Table 1).

Perceptions of nurses about EBP

Most nurses (61.3% (138) had a positive perception of Evidence-Based Practice (EBP) in the emergency room, whereas 38.7% (87) perceived it poorly.

Knowledge of evidence-based practice among nurses

From the total respondents (225), (*n* = 122, 54.2%) had good knowledge of EBP, whereas *n* = 103, 45.8% had poor knowledge.

Evidence-based practice use among nurses

A total of 93 nurses (41.3%) frequently asked clinical questions related to their practice, while 81 (36.0%) sought information and research support to support their nursing care. Additionally, 79 nurses (35.1%) critically appraised evidence, integrated current guidelines into their practice, evaluated outcomes of evidence use, and shared new practices with others (Table 2). Overall, 101 nurses (44.9%, 95% CI: 39.0–52.0%) demonstrated good utilization of evidence-based practice, whereas *n* = 124 (55.1%) did not utilize EBP in the emergency room.

Frequency of evidence-based practice use

The frequency of participant responses in each questionnaire had been showed in (Table 2).

Individual and institutional barriers to evidence-based practice use

This study identified several individual and institutional barriers hindering EBP. Approximately 44.9% of respondents indicated that a lack of autonomy in changing practices was a significant barrier. Furthermore, 26.2%, 32.9%, and 36.9% of participants consistently cited insufficient time, heavy workloads, and inadequate resources at the workplace as barriers to using EBP, respectively (Table 3).

Sources of evidence-based practice use

Approximately 34.7% of respondents reported that they always use their personal experience for EBP. Additionally, 31.1% (*n* = 70) of the participants often relied on colleagues, while 40% never used classroom learning. The use of hospital protocols, national guidelines, training, and the internet for EBP was reported by 36.1%, 28.4%, 31.1%, and 32.9% of respondents, respectively. Furthermore, 29.8% and 31.1% of the respondents referred to nursing journals and textbooks, respectively (Table 4).

Table 2 Frequency of evidence-based practice use (*N* = 225)

Activities	Never	Sometimes	Usually,	Often	Always
Asked clinical questions related to nursing care practice	3(1.3%)	26(11.6%)	65(28.9%)	93(41.3%)	38(16.9%)
Research and evidence to support your nursing practice	6(2.7%)	25(11.1%)	75(33.3%)	81(36.0%)	38(16.9%)
Critically appraised any evidence that answers your clinical questions	9(4.0%)	47(20.9%)	58(25.8%)	79(35.1%)	32(14.2%)
Use/integration of current evidence and guidelines to guide nursing care practice	4(1.8%)	30(13.3%)	69(30.7%)	79(35.1%)	43(19.1%)
Evaluate the outcome of the current evidence	13(5.8%)	44(19.6%)	58(25.8%)	81(36.0%)	29(12.9%)
Sharing or Teaching others about new ways of practice and current guidelines to guide nursing	6(2.7%)	35(15.6%)	47(20.9%)	90(40.0%)	47(20.9%)

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

Table 3 Barriers to evidence-based practice use

Barriers	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Lack of autonomy to change practices	30(13.3%)	32(14.2%)	39(17.3%)	101(44.1%)	23(10.2%)
Inadequate understanding of research terms	28(12.4%)	35(15.6%)	36(16.0%)	106(47.1%)	20(8.9%)
Inability to understand statistical terms used in research	21(9.3%)	46(20.4%)	42(18.7%)	93(41.3%)	23(10.2%) 32.9 36.9
Difficulty in judging research quality	24(10.7%)	29(12.9%)	47(20.9%)	96(42.7%)	29(12.9%)
Inability to properly interpret research results	20(8.9%)	36(16.0)	46(20.4%)	85(37.8%)	38(16.9%)
Insufficient time in the workplace to implement EBP	15(6.7%)	32(14.2%)	29(12.9%)	90(40.0%)	59(26.2%)
Heavy workload in the workplace to implement EBP	7(3.1%)	36(11.6%)	25(11.1%)	93(41.3%)	74(32.9%)
Insufficient resources	7(3.1%)	20(8.9%)	29(12.9%)	86(38.2%)	83(36.9%)
The relevant literature is not available	5(2.2%)	20(8.9%)	41(18.2%)	101(47.6%)	52(23.1%)
No confidence in judging research quality	9(4.0%)	24(10.7%)	56(24.9%)	99(44.0%)	37(16.4)
Lack of authority to use EBP in the workplace	14(6.2%)	29(12.9%)	41(18.2%)	102(44.9%)	40(17.8%)
Insufficient English language proficiency	81(36.0%)	46(20.4%)	26(11.6%)	49(21.8%)	23(10.2%)
The nurse is isolated from experienced colleagues for research discussion.	14(6.2%)	51(22.7%)	37(16.4%)	90(40.0%)	33(14.7%)
Physicians are not cooperative regarding the use of EBP	9(4.0%)	28(12.4%)	46(20.4%)	98(43.6%)	44(19.6%)
Unjustified conclusions on nursing research	5(2.2%)	38(16.9%)	43(19.1%)	90(40.0%)	49(21.8%)
Other staff members are not supportive of implementation.	7(3.1%)	30(13.3%)	53(23.6%)	96(42.7%)	39(17.3%)
Unclear implications of EBP in nursing practice	6(2.7%)	28(12.4%)	47(20.9%)	112(49.8%)	32(14.2%)
EBP provides little benefit to nurses	116(51.6%)	40(17.8%)	18(8.0%)	35(15.6%)	16(7.1%)
The culture of my team is + not receptive to EBP	5(3.1%)	39(17.3%)	52(23.1%)	102(45.3%)	25(11.1%)
Uncertainty regarding the results of the research on nurses' practice	7(2.2%)	30(13.3%)	63(28.0%)	89(39.6)	38(16.9%)

Table 4 Sources of evidence-based practice use

Sources	Never	Sometimes	Usually,	Often	Always
Class room	90(40.0%)	70(31.1%)	34(15.1%)	27(12.0%)	4(1.8%)
Hospital protocols	55(24.4%)	83(36.9%)	46(20.4%)	30(13.3%)	11(4.9%)
National guidelines	61(27.1%)	64(28.4%)	44(19.6%)	45(20.0)	11(4.9%)
Training	51(22.7%)	70(31.1%)	50(22.2%)	38(16.9%)	16(7.1%)
Colleague	31(13.8%)	35(15.6%)	59(26.2%)	70(26.2%	30(31.1%)
Personal experience	9(4.0%)	15(6.7%)	35(15.6%)	88(39.1%)	78(34.7%)
Nursing journals	16(7.1%)	46(20.4%)	67(29.8%)	67(29.8%)	29(12.9%)
Internet	21(9.3%)	74(32.9%)	61(27.1%)	38(16.9%)	31(13.8%)
Textbooks	21 (9.3%)	58(25.8%)	70(31.1%)	48(21.3%)	28(12.4%)

Facilitators of evidence-based practice use

Approximately one-third of respondents strongly agreed that enhancing administrative support (73 participants, 32.4%), improving research knowledge (70 participants, 31.1%), and providing adequate training (79 participants, 35.1%) were the most significant facilitators of EBP (Fig. 1).

Factors associated with the utilization of evidence-based practice

In the bivariate analysis, sex, work experience, level of education, unavailability of relevant literature, level of position, and level of knowledge were significant at a p-value < 0.05. In the multivariable analysis, significant associations with EBP at a p-value < 0.05 were found for sex, education level, position, knowledge level, and availability of relevant literature. Female nurses were 1.4 times more likely to utilize EBP than male nurses (AOR = 1.4, 95% CI: 1.20–3.92). Nurses with an MSc or higher were 6.9 times more likely (AOR = 6.78, 95% CI: 1.14–10.35) to use EBP than those with a BSc. Coordinator nurses were 13 times more likely (AOR = 13.20, 95% CI: 1.84–14.41) to use EBP than staff nurses. Additionally, nurses with good knowledge of EBP were 3.8 times more likely (AOR = 3.80, 95% CI: 1.70–8.50) to have good use than those with poor knowledge. Nurses who agreed that relevant literature was unavailable were also 3.3 times more likely (AOR = 3.3, 95% CI: 1.33–8.25) to report poor EBP than those who did not view this as a barrier (Table 5).

Discussion

The current study revealed a low EBP level among nurses, indicating potential gaps in the application of evidence-based practices in critical care settings. Factors such as sex, education level, position, knowledge, and the unavailability of relevant literature in the workplace were significantly associated with EBP. This suggests that

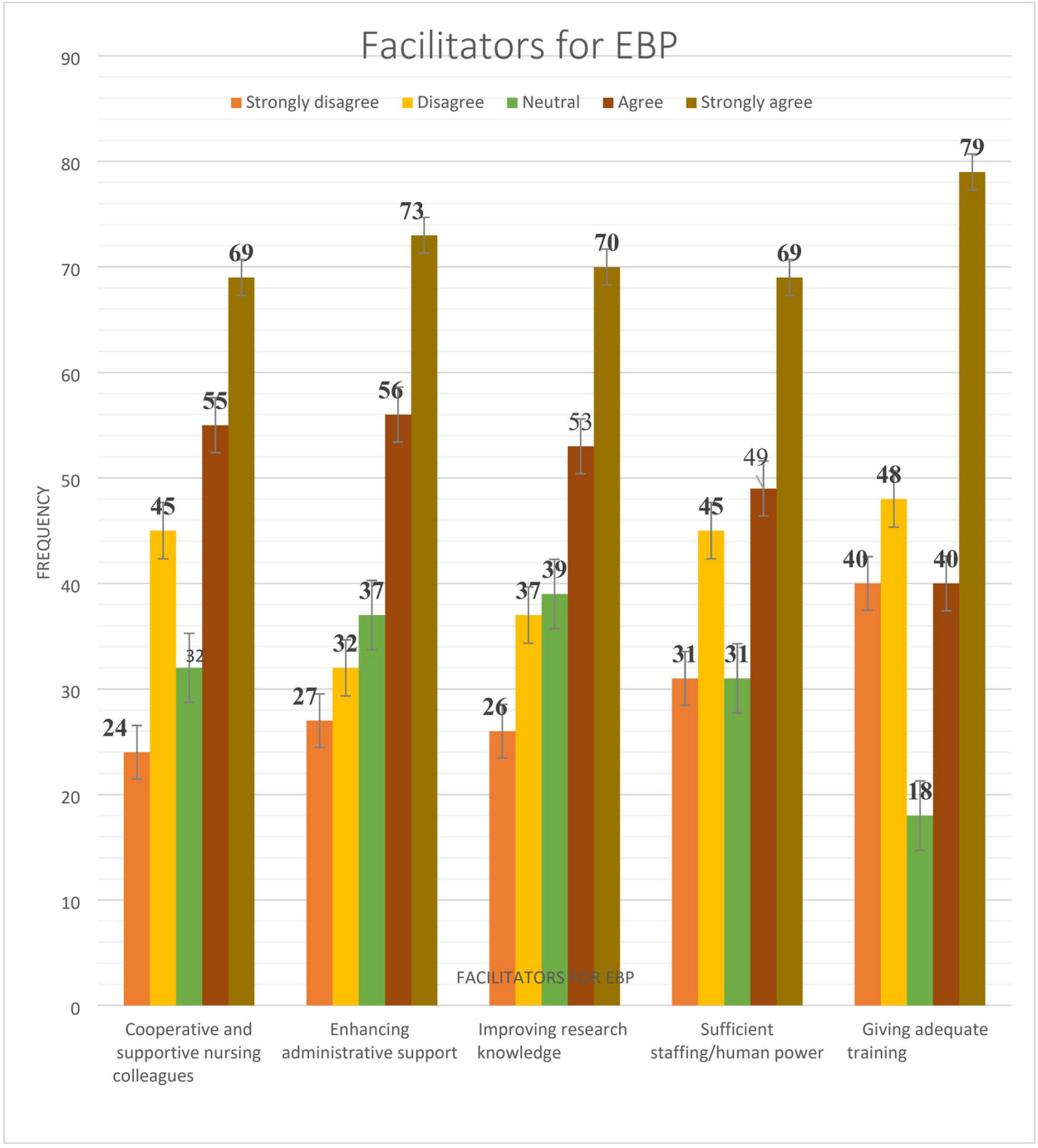

Fig. 1 Facilitators of evidence-based practice use

addressing these variables could enhance the integration of evidence-based practices among nursing professionals. In this study, 44.9% of nurses had good EBP, and 61.3% perceived their practice as good.

This finding is comparable to studies conducted in Nepal (49%) [26], 41% [27] and 47% [28] suggesting a regional trend in EBP levels among healthcare workers. However, this finding is lower when compared to studies conducted in Kenya 53.6% [22], Zambia 54.3% [29], and various regions within Ethiopia, including the Amhara region 55% [30], and Oromia 51.8% [31]. The possible reasons for these discrepancies include differences in healthcare system levels, availability of resources, and participants' knowledge levels.

In addition, approximately 45.8% of the participants had poor knowledge, which has significant implications

Table 5 Summary of factors associated with EBP

Variables	Category	EBP		COR (95%) CI)	AOR (95% CI)	*P* value
		Good	Poor			
Sex	Female	55(24.4%)	42(18.7%)	2.33(1.36- 4.00	1.43(1.20–3.92)	0.030**
	Male	46(20.4%)	82(36.4%	1	1	
Level of education	BSc	75(33.3%)	122(54.2%)	1	1	
	MSc and above	26(11.6%)	2(0.9%)	21.14(4.878–91.66)	6.78(1.14–10.35)	0.035**
Level of position	Staff nurse	82(36.4%)	122(54.2%)			
	Coordinator	19(8.4%)	2(0.9%)	14.13(3.20-62.32)	13.19(1.84–14.41)	0.010**
knowledge level	Poor	26(11.6%)	77(34.2%)	1	1	
	Good	75(33.3%)	47(20.9%)	4.72(2.67–8.39)	3.8(1.70–8.50)	0.001**
Relevant literature	Disagree	18(8.0%)	48(21.3%)	1	1	
	Agree	83(36.9%)	76(33.8%)	2.91(1.56–5.44)	3.32(1.33–8.25)	0.010**

COR crude odds ratio, *AOR* adjusted odds ratio

**significant at *P*-value < 0.05

for their practice and patient care quality. This finding is higher than previously reported findings in Australia 33.3% [32], and Ghana 25.3% [33]. The inconsistency may be attributed to differences in study areas and settings.

Of the three sets of variables computed to explain EBP—socio-demographic factors (sex and level of education), individual factors (level of knowledge), and institutional factors (level of position and the unavailability of relevant literature) were found to affect EBP. In this study, sex was significantly associated with EBP. The study revealed that approximately 57% of male nurses were less likely to use EBP than female nurses. The reason could be that male nurses might experience different socialization and training that do not emphasize EBP as strongly as their female counterparts. In addition, they may work in environments that prioritize traditional practices, leading to lower engagement with EBP.

The likelihood of experiencing EBP among nurses with an MSc or higher was 6.78 times higher than that of those with only a BSc degree. This result is supported by studies conducted in Ghana [33]. Nurses with higher qualifications are more likely to use EBP than those with lower qualifications, possibly because master's programs offer more technological skills and greater exposure to EBP incorporation in curricula than bachelor's programs.

This study also revealed that coordinator nurses were 13 times more likely to use EBP than staff nurses.

Furthermore, the study indicated that nurses with good knowledge of EBP were 3.8 times more likely to have good EBP compared to those with poor knowledge of EBP. The underlying reason may be that knowledge about EBP enhances skills and boosts confidence in using EBP effectively. In addition, most respondents were younger, which may facilitate easier sharing of information about EBP among peers. These findings underscore the importance of addressing various factors, such as educational qualifications, gender dynamics, institutional roles, and knowledge levels to improve EBP among nurses, ultimately enhancing patient care quality across healthcare settings.

This finding showed that nurses who agreed that the relevant literature was not available were 3.316 times more likely to have poor EBP than those who did not view the unavailability of relevant literature as a barrier to EBP. This suggests that enhancing access to literature could significantly improve the quality of nursing care, as evidenced by similar studies conducted in Kenya [17] and South Africa [34]. The implication is that if nurses can readily access relevant literature in their work areas, such as in emergency rooms, they can provide scientific-based care more efficiently and effectively.

The study found that 40.0%, 41.3%, and 38.2% of respondents identified insufficient time, heavy workloads, and insufficient resources at the workplace as the most reported barriers, respectively. These findings imply that systemic issues in healthcare environments are significant obstacles to effective EBP. The lower prevalence of these barriers compared to countries like Iran [35] and Egypt [36], where heavy workloads and insufficient resources were more frequently reported, suggests that nurses in this study area may experience fewer challenges. This difference may indicate an opportunity for targeted interventions to further improve EBP among local nurses.

Moreover, the potential connection between knowledge about barriers to EBP and years of work experience is significant. Key informants identified critical resource gaps that hinder nurses' engagement with evidence-based practice (EBP). Key informants, including healthcare providers, community leaders and educators, reported a lack of hospital libraries, which limited access to essential literature and research materials for nurses. Additionally, the absence of updated clinical guidelines and reliable internet services has restricted nurses' ability to stay informed about the latest practices. Inadequate training opportunities prevent nurses from developing

the necessary skills for effective evidence-based practice (EBP) implementation. In addition, insufficient access to computers intensifies these challenges, thereby making it difficult for users to use online resources. Addressing these deficiencies by investing in libraries, enhancing training programs, and improving technology access is essential for empowering nurses and improving patient care outcomes.

The study found that 47.6%, 44.1%, 43.6%, and 42.7% of respondents cited the unavailability of relevant literature, lack of authority in the workplace, and uncooperative attitudes from physicians and other staff as barriers to EBP. These findings were slightly lower than those reported in Australia [32], where lack of authority and Physicians were not cooperated, and in Jordan [17], where relevant literature was not available, but similar to the study of South Africa [34], where similar barriers were more pronounced. This suggests that although challenges exist universally, their severity may differ by region. The implication is that fostering better communication and collaboration among healthcare professionals can mitigate these barriers.

Interestingly, nurses in this study area reported fewer barriers to using evidence-based practices than those in their counterparts in other countries. This discrepancy may be linked to a lack of familiarity with EBP among local nurses, which could hinder their engagement with evidence-based practices. Additionally, poor communication between hospital management and healthcare professionals may contribute to these barriers, highlighting the need for improved organizational support.

Finally, 31.1% of respondents consulted colleagues for information on EBP, whereas 12.9% regularly used nursing journals as sources of evidence. This preference aligns with findings from Australia [32] where a similar trend was observed among nurses seeking knowledge from peers rather than formal literature because of time constraints or workload pressures. This reliance on colleagues underscores the need for enhanced access to educational resources and structured support systems within healthcare environments, ultimately aiming to improve the quality of patient care. Numerous studies have explored nurses' EBP use in Ethiopia. This study aimed to assess EBP specifically in the emergency department (ED), which is vital for hospital operations. Although previous research has addressed general hospital settings, focusing on the ED is crucial for improvement, especially in low-income countries like Ethiopia, providing evidence for future enhancements.

Limitations of the study

This study was limited by its cross-sectional design.

Conclusion and recommendations

In conclusion, the findings of this study underscore the importance of gender, educational attainment, and professional roles in the use of EBP among nurses. Female nurses, those with advanced degrees, and nurse coordinators are more likely to engage in EBP, highlighting the influence of both education and leadership positions on practice engagement. In addition, possessing good knowledge of EBP significantly enhances utilization rates. Conversely, perceptions regarding the unavailability of relevant literature indicate a barrier that must be addressed to improve EBP adoption. Overall, the findings suggest that targeted interventions focusing on education and resource accessibility are essential for fostering a culture of evidence-based nursing practice. The Federal Ethiopian ministry of Health should enhance nurses' EBP capabilities through short-term training or by integrating EBP into educational curricula. Hospital administrators are encouraged to improve internet access and make EBP guidelines readily available. Additionally, nursing leaders and administrators can help overcome barriers by providing training, allowing time off for EBP activities, and adjusting work schedules accordingly.

Abbreviation

EBP Evidence-based practice utilization

Supplementary Information

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Supplementary Material 1.

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Authors' contributions

MK: Selected the title, drafted the proposal (conceptualized and designed the study), analyzed and interpreted the data, and drafted the manuscript. OA: The title, proposal, and manuscript have been approved. LB: Approved the proposal and study with some revisions. AT: Finalized the study, revised the manuscript, and provided constructive comments. AA: The author commented on the findings and finalized the manuscript.

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Data availability

The data supporting the findings of this study are available within the manuscript.

Declarations

Ethics approval and consent to participate

Informed consent was obtained from all participants. The ethical review board of the College of Health Sciences at Addis Ababa University approved this study (approval number: 02–008) on September 1, 2024. The study was conducted in accordance with the ethical standards outlined in the 1964

Declaration of Helsinki and its later amendments, or comparable ethical standards.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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