

# Assessment of Nurses Knowledge and Utilization of Evidence based Practice and its Associated Factors in Selected Hospitals of Southern Ethiopia

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## Abstract

**Background:** Evidence based practice is conscientious, clear and judicious use of current best evidence in making decisions about the care of the individual patient. Through the time, new and more effective medicines, medical devices and procedures are invented to help doctors, nurses and medical technicians provide the best possible care and treatments to patients.

**Objective:** To assess nurses knowledge and utilization of evidence-based practice and its associated factors in selected hospitals of Southern Ethiopia.

**Methods:** Facility-based cross-sectional study design was conducted among nurses working in selected hospitals of three zones of south region of Ethiopia from March 30 to May 1, 2017. 208 BSc nurses were involved in the study. The data was collected by three trained diploma nurses. The collected data was entered and analyzed using SPSS version 21 statistical software package. Bivariate and multivariate logistic regression was done to identify factors that are associated with knowledge and utilization of evidence based practice among nurses. A statistical significance was declared at p value <0.05.

**Results:** Nearly half (45.3%) of nurses in this study had poor knowledge regarding evidence based practice. 38.5% of respondents were never utilized evidence based practice in their clinical practice. In this study being head nurse was 3.43 times (AOR= 3.427) (95%CI=(1.289, 9.112)) more likely to use evidence based practice when it is compared to being staff nurse. Knowledge of evidence based practice was significantly associated with nursing experience and working unit among nurses.

**Conclusion and Recommendation:** The result of this findings revealed that nurses working in selected hospitals in Southern nation nationalities and peoples of Ethiopia have low level of knowledge on evidence-based nursing practice. The manager of these hospitals need to provide on job training on evidence based practice which can raises level of knowledge and utilization of an evidence based practice among nurses.

**Keywords:** Nursing patient; Patient safety; Demographic variables; Nurses knowledge

## Introduction

Evidence based practice is diligent, clear and prudent use of current best evidence in making decisions about the care of the individual patient. It incorporates individual clinical experts with the best available external clinical suggestion from systematic research [1,2]. The translation of evidence into practice has a role in ensuring quality care, patient safety, and improved patient outcomes. Various researchers claim the reality that evidence based practice fosters value health care, better health outcomes, and reduced health care costs [3,4]. Evidence based practice in nursing is come up to make value decisions and given that nursing care based on personal clinical expertise in combination with the most current, relevant research available on the topic. Evidence based nursing implements the most up to date methods of providing care, which have been proven through

appraisal of high quality studies and statistically significant research findings. Evidence based nursing is a process founded on the collection, interpretation, appraisal, and integration of valid, clinically significant, and applicable research. To properly implement Evidence based nursing, the knowledge of the nurse, the patient's preferences, and multiple studies of evidence must all be collaborated and utilized in order to produce an appropriate solution to the task at hand. Evidence-based practice is acknowledged internationally. The accessibility of information and the development of science have led to considerable improvements in health outcomes all over the world. However differences in outcomes, health inequalities and weakly performing health services continue to present a real challenge to all nurses [5]. Evidence based practice in Africa is remaining in challenges. One reason for this challenge is Africa lags behind in research. Another obstacle is lack of funds. But some African countries like, South Africa, Botswana, Nigeria, Kenya Malawi and Egypt are in advocating evidence based practice [6]. The concept of implementing evidence-based practice in nursing in most parts in Ethiopia is based

on experience, tradition, intuition, common sense and untested theories. There is lack of research evidence in many areas of nursing practice [7]. Therefore, the Purpose of this study was to assess the knowledge and utilization of evidence-based practice and its associated factors among nurses in selected hospitals of southern nation nationality and peoples of Ethiopia.

## Material and Method

Institutional based cross sectional quantitative study design was implemented from March, 30 to May 1, 2017. Hadiya zone, Silte zone and Gurage zone are among the zonal administrations of Southern nation nationalities and peoples of Ethiopia. Hosanna town is a capital city of Hadiya zonal administration and it is 230 km away from our capital city Addis Ababa. Worabe town is a capital city of Silte zonal administration and it is 170 km far from our capital city Addis Ababa. Wolkite Town is capital city of Gurage zonal administration. Butajira town is special woredas located at 130 km away from Addis Ababa. The study was conducted at three hospitals, namely Wachemo University Nigist Elleni Mohammed Memorial Referral Hospital, Worabe comprehensive specialized hospital and Butajira General Hospital located in North West of southern region. Mohammed memorial referral hospital is teaching hospital while Worabe comprehensive specialized hospital and Butajira General Hospital are public hospitals. Mohammed memorial referral hospital has a total of 203 beds and 147 nurses. Worabe comprehensive specialized hospital has a total of 117 beds and 112 nurses. Butajira General Hospital has a total number of 169 beds and 152 nurses.

**Population :** All nurses working in the Wachemo University Nigist Elleni Mohammed Memorial Referral Hospital, Worabe comprehensive specialized hospital and Butajira General Hospital in Southern Ethiopia where involved in this study.

**Sample size determination:** The sample size for this study was calculated by using formula for a single population proportion formula and considering the following assumptions

**Assumptions :** A 95% confidence level, margin of error (0.05), (p=0.157) prevalence of nurses practiced evidence based practice always in the study which was conducted at Tikur Ambesa Specialized Hospital in Addis Ababa Ethiopia [8] is substituted in the following single population proportion formula

$$n = \frac{(Z_{\alpha/2})^2 p(1-p)}{d^2} = \frac{(1.96)^2 (0.157) (0.843)}{(0.05)^2} = 203$$

## Sampling Procedures

Three hospitals were selected and nurses were taken proportionally.

**Data collection procedures:** Data was collected using a structured self-administered questionnaire which has five sections Socio demographic characteristics, knowledge of nurses toward evidence based practice, barriers for evidence based practice, facilitators for evidence based practice and utilization of evidence based practice. Seven Knowledge questions were adapted and modified from study conducted in Nigeria [8]. Questions regarding barriers and facilitators to evidence based practice is adapted from Majid et al. [8] Proven to be reliable in related study of our country which was done in tikur Ambesa Specialized Hospital in Addis Ababa in Ethiopia [9-11] questions about utilization of evidence based practice were adapted from different

studies and which were reliable to conduct the study because it was applied in study of Tikur Ambesa specialized hospital [11]. The data was collected by three trained diploma nurses.

**Data quality control:** To assure the quality of the data we properly designed data collection instrument and training of data collectors and supervisors was done. The enumerators and the supervisor were given training for two days on procedures, techniques and ways of collecting the data. 5% pretest was done at Homacho Primary Hospital in southern nation nationalities and peoples to check consistency of the questioner. The collected data was reviewed and checked for completeness by principal investigators each day.

**Operational definitions:** Evidence based practice: Evidence-based practice is an approach in which critically examined literature and research findings are used to provide nursing care to patients who is safe and modern.

**Barriers:** Barriers are obstacles for implementing evidence-based practice. These barriers could be related to the nurses' experience, environment, resources, and lack of administrative support.

**Good knowledge:** Good knowledge defined as respondents who answer correctly to knowledge related question and those who scored equal or above the overall mean value.

**Poor knowledge:** Poor knowledge defined as respondents who answered knowledge related question below the overall mean value.

**Dependent variables:** Nurses knowledge on and level of utilization evidence-based practice.

**Independent variables:** Demographic variables, Organizational variables, individual variables:

**Data analysis procedures:** The collected data was checked for its completeness manually and then entered in to EPI Info version 7.1.1 and analyzed using SPSS version 21 statistical software package. Descriptive statistical analysis including, table, figures, frequency distribution was used to describe the data. A bivariate logistic regression model analysis was done to see the association between the explanatory and outcome variables. Odds ratio with 95% C.I was used to measure the strength between dependent and independent variables. P value <0.05 was used to determine level of statistical significance.

## Results

**Socio-demographic characteristics:** The research plan was to collect data from 223 nurses. But data were collected from a total of 208 BSc nurses with the response rate of 93.3%. Majority of nurses 107 (51.5%) were under the age category of 25-29 and their mean age was 26.6. Ethnic group of Silte were large among nurses which accounts 53 (25%) of study participants. Concerning the religions of nurses Muslim were largest religion among nurses which was (36.5%) followed by Orthodox 75 (36.1%), Protestant 41(19.7%), and Catholic16 (7.7%). Also this study revealed that males 139 (66.8%) were dominant study participant while female accounts 69 (33.2%) and 142 (68.3%) of nurses were unmarried. The majority 201 (96.6%) of respondents were BSc degree holders, and only 7 (3.4%) were MSc holders. One hundred fifty seven (75.5%) nurses had 1-3 years of nursing service experience. (Table 1)

Socio-Demographic characteristics	Frequency	Percent
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Age group	20-24	72	34.6	
	25-29	107	51.5	
	30-34	29	13.9	
Ethnicity	Silte	53	25.5	
	Amhara	49	23.6	
	Hadiya	35	16.8	
	Oromo	20	9.6	
	Gurage	22	10.6	
	Other s	29	14	
Year of experience at	01-Mar	157	75.5	
	04-Jun	41	19.7	
	>6	10	4.8	
Marital status	Single	142	68.3	
	Married	60	28.8	
	Divorced	4	1.9	
	Widowed	2	1	
	Medical surgical	63	30.3	
Your work area at	Intensive care unit	27	13	
	Emergency unit	45	21.8	
	Operating unit	8	3.8	
	Others	65	31.2	

**Table 1:** Distribution of respondents by their basic socio demographic characteristics, in selected hospitals of three Zones in South Region from March, 30- May 1, 2017 (n=208)

**Knowledge of nurses about evidence based practice:** From 208 nurses 95 (45.7%) of them had poor knowledge about evidence based practice. One hundred and ninety (91.3%) of nurses knew that evidence based practice is a problem solving approach. Also one hundred and ninety (91.3%) knew that evidence based practice enhances delivery of highest quality of nursing care to patients. 186 (89.4%) knew that it combines research with knowledge and theory, most of the respondents 166 (79.8%) agreed that evidence based practice fills the gap between research, theory and practice. (Table 2)

Variables	Responses	Frequen cy	Perc ent
Are you aware of concept of EBP	Yes	169	81.2
	No	39	18.8
Evidence based practice is problem solving approach	Yes	190	91.3
	No	18	8.7

Evidence based practice deliver highest quality care	Yes	190	91.3
	No	18	8.7
Evidence based practice combines knowledge	Yes	186	89.4
	No	22	10.6
Evidence based practice fills gap between theories	Yes	166	79.8
	No	42	20.2
There is no need of evidence based practice in nursing	Yes	131	63
	No	77	37
Evidence based practice should be for nurse educator	Yes	74	35.6
	No	134	64.4
Level of knowledge	Poor knowledge	95	45.7
	Good knowledge	113	54.3

**Table 2:** Nurses knowledge about evidence based practice at selected hospitals in three Zones of South Region, March, 30- May 1, 2017 (n=208)

**Barriers and initiators of evidence based practice among nurses:** Only descriptive analysis was done to assess barriers and initiators of evidence based practice among nurses in selected hospitals. The responses given by nurses which was strongly disagreeing and disagree was merged. Also strongly agree and agree merged as it was in the previous studies and then comparing is reasonable. According to the result of the study, 48.1% of the nurses agreed that lack of knowledge on evidence-based nursing practice is a barrier but 32.2% of them disagree. Also, 42.3% of nurses observed that inadequate understanding of terms in research article is a barrier for utilization of evidence based practice, 37% of the nurses have the opinion that inadequate resources for utilization of evidence-based practice is a barrier, furthermore, 48.1% of the nurses identified inability to understand statistical terms used in research article, as a barrier for utilization of evidence based practice. Participants were asked to rate each of five items on the scales with initiator's extent to which they were perceived as a facilitator. The categories of great and moderate extent were merged as in previous study to make comparison meaningful. The most frequently cited initiators were improving research knowledge, followed by the answer that having cooperative and supportive colleagues for utilization of evidence based practice (Table 3).

Variables		Frequen cy	Perc ent
Enhancing administrative support	To no extent	18	8.7
	To little extent	44	21.2
	Moderate to great extent	144	69.2
	No opinion	2	1

Cooperative and supportive colleagues	To no extent	20	9.6
	To little extent	26	12.5
	Moderate to great extent	159	76.4
	No opinion	3	1.4
Improving research knowledge	To no extent	13	6.2
	To little extent	30	14.4
	Moderate to great extent	162	77.8
	No opinion	4	1.9
Sufficient staffing	To no extent	17	8.2
	To little extent	31	14.9
	Moderate to great extent	156	75
	No opinion	4	1.9
Given adequate training	To no extent	23	11.5
	To little extent	27	13
	Moderate to great extent	155	74.5

	No opinion	3	1.4
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**Table 3:** Shows initiators for utilization of evidence based practice in selected hospitals of three Zones of southern nation nationalities and peoples from March 30-May 1, 2017 (n=208).

Factors associated with knowledge of evidence based practice among nurses Knowledge about evidence based practice was assessed for its association with socio demographic, individual and organizational variables. The result of this study shows that Sex (p=0.029), marital status (p=0.0001) and, nursing experience (p=0.018) were significantly associated with knowledge regarding evidence based practice. According to the result of this study, females were 56.5% (AOR=0.435) (95%CI=(0.206, 0.919)) less likely knowledgeable of evidence based practice than males. Those who married were 14.7 times (AOR=14.706) (95%CI=(1.370, 57.834)) more likely knowledgeable when compared to unmarried nurses. The other finding of the study indicated that, those who had working experience of four to six years were 91.2% (AOR=0.088) (95%CI=(0.015, 0.502)) less likely knowledgeable when compared with working experience below three years. The study participants who had long working experience that means more than six years 85.3% (AOR=0.147) (95%CI=(0.024, 0.893)) less likely knowledgeable compared to nursing experience below three years. The result of this study revealed that head nurses had 3.2 times AOR=3.22 (95%CI=(1.215, 8.57)) more likely knowledgeable when compared with staff nurses. (Table 4)

Variable	Categories	Good Knowledge No (%)	Poor Knowledge No (%)	COR (95%CI)	AOR (95%CI)
Year of experience	01-Mar	62 (39.5)	95 (60.5)	1	1
	04-Jun	14 (34.2)	27 (65.8)	1.225 (0.594,2.528)	0.088 (0.015, 0.502) **
	>6	2 (20.0)	8 (80.0)	2.638(0.542, 12.839)	0.147 (0.024, 0.893)*
Sex	Male	65 (46.8)	74 (53.2)	1	1
	Female	48 (69.6)	21 (30.4)	2.57 (0.707, 2.379)	0.435 (0.206, 0.919)*
Marital	Single	82 (57.7)	60 (42.3)	1	1
	Married	25 (41.7)	35 (58.3)	0.204 (0.106, 0.390)	14.706 (1.370, 57.83)**
	Widowed	1 (50)	1(50.0)	0.0001 (0.00001, .0001)	0.00010(0.001,0.0002)
	Divorced	3(75)	1(25)	0.114 (0.012, 1.134)	0.061 (0.002, 1.577)
Position at	Staff nurse	89 (54.6)	74 (45.4)	1	1
	Head Nurse	-	-	-	
Facility	Others	21(55.3)	17(44.7)	1.650(.688, 3.960)	3.22 (1.215, 8.57)*
	Medical	3(42.9)	4(57.1)	1.650(.311, 8.752)	0.54 (0.076, 2.720)
Work area	surgical	33(52.4)	30(47.6)	1	1
	Intensive care unit	13(48.1)	14(51.9)	0.541(.217, 1.347)	0.302(0.096, 0.95)*
	Emergence unit	29 (64.4)	16 (35.6)	2.703 (1.111, 6.577)	1.16 (0.52, 3.143)
	Operating unit	5 (62.5)	3 (37.5)	1.126 (0.247, 5.142)	0.853 (0.077, 8.077)

	others	48 (73.8)	17 (26.2)	0.988 (0.485, 2.012)	0.661 (0.223, 1.61)
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**Table 4:** Multivariate analysis shows association of socio demographic variables with knowledge of evidence based practice in selected hospitals of three Zones of southern nation nationalities and peoples from March, 30 May 1, 2017

**Factors associated with utilization of evidence based practice among nurses** Utilization of evidence based practice was assessed for its association with socio-demographic variables. Multivariable analysis logistic regression model showed that; sex, marital status, year of work experience and position in the health facility were statistically associated with utilization of evidence based practice at p-value <0.05. This study result shows that females were 2.6 times (AOR=2.56) (95%CI=(1.17, 5.59)) more likely utilize evidence based practice when compared with males was significantly associated with evidence based

practice. In this study being head nurse was 3.43 times (AOR=3.427 (95%CI=(1.289, 9.112)) more likely use evidence based practice when compared to being staff nurse. According to the result of the study married nurses were 89.9% (AOR=0.102) (95%CI=(0.041, 0.258)). less likely utilize evidence based practice when compared with unmarried nurses. With respect to year of nursing experience, those who had long year nursing experience 13.8 times (AOR=13.799) (95%CI=(2.352, 80.974)) more likely utilize evidence based practice (Table 5).

Variable	Categories	EBP no Use No (%)	EBP use No (%)	COR (95%CI)	AOR (95%CI)
Year of experience	43160	63 (40.1)	94 (59.9)	1	1
	43255	15 (36.6)	26 (63.4)	1.225 (0.594, 2.528)	1.331 (0.548, 3.233)
	>6	2 (20.0)	8 (80.0)	2.638 (0.542, 12.839)	13.799 (2.352, 80.97)*
Sex	Male	56 (40.3)	83 (59.7)	1	1
	Female	24 (34.8)	45 (65.2)	2.57 (0.707, 2.379)	2.560 (1.170, 5.59)*
Position	Staff nurse	68 (39.8)	103 (60.2)	1	1
	Head nurse	8 (26.8)	20 (71.4)	1.650 (0.688, 3.960)	3.427 (1.289, 9.112)*
	Others	3 (33.3)	6 (66.7)	1.650 (0.311, 8.752)	2.754 (0.407, 18.620)

\*=P-Value <0.05, \*\*= p-value <0.01, \*\*\*=p-value <0.001

**Table 5:** Multivariate analysis of socio demographic data with utilization of evidence based practice (EBP) in selected hospitals of three zones of southern nation nationalities and peoples of Ethiopia from March, 30- May 1, 2017

## Discussion

The response rate in this study was 93.3% which is similar with the study conducted in Tikur Anbesa Specialized Hospital in Ethiopia 96.8% (24) and study conducted in Iran 93% [12]. As the study result revealed that, Female nurses (AOR=0.394 (95%CI=(0.159, 0.978)). were less likely knowledgeable than male nurses in evidence based practice. This might be related with female were less involved in training and managerial position in developing countries. Regarding to year of nursing experience in current study 75.5% of study participants were below three years nursing experience which is consistent with the study conducted in Tikur Anbesa Specialized Hospital in Ethiopia in which 63% of nurses were below five years of job experience. The data analysis of this study shows that 45.7% of the study participants had poor knowledge level regarding evidence based nursing practice. According to this result the level of knowledge is too low when compared with Offa specialized hospital in Nigeria. In study of Nigeria level of knowledge was categorized as low 4.5%, medium 18.5% and high 77.3% [9]. The reason for this might be socio-demographic background of study participants. The reason also may be countries educational policies. The study revealed 81.2% of the respondents were aware of the concept of evidence based practice which is lower than study conducted by White Williams in Spain 96%. The difference may arise from place where the study conducted as the present study was

done in developing country while Williams study was in developed country. The result of current study revealed that 91.3 % study participants knew evidence based nursing practice delivers highest quality of care which is analogous with study of Offa specialized Hospital 85.5% [9]. But higher than that of governmental hospital at Jeddah [8].

Working experience was determinants of knowledge about evidence based nursing practice. As those who had long year working experiences were 91.2% (AOR=0.088) (95%CI=(0.015, 0.502)) less likely knowledgeable when compared with working experience below 3 years. The reason for this might be related with those who have long working year experience were not learned recently and not updated with new knowledge. They practiced based on their previous experience. The levels of utilization evidence based nursing practice in this study were 55.5% and 44.5%, occasionally and often respectively. Also only 27.4% of study participants' uses evidence based practice often, which was almost the same with study conducted in Offa specialized hospital of Nigeria [9] in which 30.9% on nurses used journals more often. The remaining was either used occasionally or never use evidence based nursing practice. Even though this (27.4%) level of utilization is higher than that of Tikur Anbesa Specialized Hospital, in which only 15.7% nurses were used evidence based practice more often [13]. Still it is alarming that level of utilization is in



low level. This might be indicated that, lack of time and lack of training hindering them from utilizing of evidence based nursing practice. This result is comparable with the study conducted in South Africa which found 35.6% and 31.5% use evidence based practice frequently and rarely, respectively [12,14]. In this study more than 55.5% of the respondent used evidence based practice occasionally. This result was the same with the result of study conducted in Offa specialist hospital of Nigeria in which 55.5% (9) were utilized evidence based nursing practice occasionally. In current study utilization of evidence based practice was significantly associated with role position. According to the result of this study being head nurse was 3.43 times (AOR=3.427) (95%CI=(1.289, 9.112)) more likely to use evidence based nursing practice when compared to being staff nurse and this might be related with head nurses have opportunities to take training and workshops about evidence based nursing practice. This is similar with the study conducted in Mid-Western United States of rural community [10].

## Conclusion

The result of findings in this study revealed that nurses in selected Hospitals, southern nation nationalities and peoples have low knowledge level about evidence-based nursing practice even though evidence based practice is taught in basic training of nursing education in Ethiopia. Also their utilization level of evidence-based nursing practice was low. Nursing Managers should design an appropriate strategic plan by considering supporting factors and barriers for integrating evidence based practice into clinical setting.

## Ethical Consideration

Institution Review Board of Addis Ababa University, College of Health Science, School of Allied Health Sciences, Department of Nursing and Midwifery reviewed the protocol to insure full protection of the rights of study subjects. Following the approval by Institution Review Board, Official three letters of co-operation was written to Wachemo University Nigist Elleni Mohammed Memorial Referral Hospital, Worabe comprehensive specialized hospital and Butajira General Hospital from Department of Nursing and Midwifery of Addis Ababa University. After getting permission from Hospitals, data collectors was informed about the study, then after Verbal and written informed consent obtained from study subjects, Confidentiality was assured for all the information provided, no personal identifiers (anonymity) was used on the questionnaires

## Consent for Publication

This manuscript contains original material. Neither the article nor any part of its essential substance, tables, figures, has been or will be published elsewhere. We have submitted for publication without conflict of interest among authors.

## Availability of Data and Materials

The data that support the findings of this study are available on request from the corresponding author.

## Competing Interests

We declare that we have no significant competing financial, professional or personal interests that might have influenced the performance or presentation of the work described in this manuscript

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## Declaration

We declare that this manuscript is our original work and it is submitted for first publication to BMC Nursing. The manuscript has not been published and is not being submitted or considered for publication elsewhere. The text, illustrations, or any other materials included in the manuscript contains no violation of any existing copyright and does not infringe any rights of third parties. We participated in the work in a substantive way are prepared to take public responsibility for the work.

## Authors Contribution

TB, TH and EA conceived the study and were involved in the design, field work, data analysis and interpretation, report writing and manuscript preparation. In addition, TB drafted the manuscript. All authors reviewed, read and approved the final version of the manuscript

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