

## Assessment of Knowledge, Attitude and Practice towards Prevention and Management of Postpartum Hemorrhage among Midwives Working on Health Centers in Kolfe Keranio Subcity Addis Ababa, Ethiopia

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### Abstract

**Introduction:** Obstetric hemorrhage is one of the major causes of maternal death in both developed and developing countries. Among obstetric hemorrhage PPH is the most common form of major obstetric hemorrhage. Worldwide, at least 289,000 women die each year by complication of pregnancy and childbirth and about 800 women die from pregnancy or childbirth-related complications every day. PPH is the major cause of maternal mortality and morbidity worldwide with the highest incidence in developing countries. All pregnant mothers are at risk of PPH. Rapid recognition of clients at risk of PPH and early diagnosis is essential to successful management and favorable outcome of labor. Therefore, identification of risk factors of PPH, early diagnosis and appropriate management are the hall mark to reduce maternal mortality.

**Objective of the Study:** The primary purpose of this study is to assess knowledge, attitude and practice of midwives regarding prevention and management of postpartum hemorrhage in all health centers of Kolfe Keranio sub city.

**Methodology:** A descriptive cross-sectional study was conducted at health centers of Kolfe Keranio sub city, Addis Ababa, Ethiopia, from February 15 - 30, 2015. All 87 (93.5%) midwives during data collection period was enrolled in the study. Structured self-administered questionnaire was used to collect data from respondents. The collected data was coded, numbered, entered and analyzed using SPSS version 20. Finally, the results was presented using tables and charts.

**Result:** A total of 87 (93.5%) midwives in 11 governmental health centers were included in the study. Most midwives were between the ages of 19 - 29 years about 78 (89.7%) and less than 10 years working experience of 78 (89.7%). The findings revealed that, majority 58 (66.7%) had good knowledge, while 29 (33.3%) midwives had a poor knowledge, and also midwives had good knowledge about definition, types, common causes, risk factors, assessment and of sign PPH (60.9%, 52.9%, 56.3%, 41.4%, 44.8% and 64.4%) and poor knowledge (39.1%, 47.1%, 43.7%, 58.6%, 55.2% 35.6%) respectively. Most of the participants have high attitudes towards prevention and management of PPH with a percentage of 77 (88.5%) and 47 (54%) of midwives perform satisfactory practice whereas 40 (46%) had unsatisfactory practice.

**Conclusion and Recommendation:** The finding reveal that low knowledge as 29 (33.3%) of midwives had poor knowledge, high attitude as 77 (88.5%) of midwives had positive attitude and low practice since 40 (46%) had unsatisfactory practice. The studies highlight the need for continuous in-service training to updates knowledge and practice regarding management and prevention of PPH. Competency based standards need to be established for midwifery practice plus support supervision.

**Keywords:** Knowledge; Attitude; Practice; Post-Partum Hemorrhage

## Introduction

Obstetric hemorrhage is one of the major causes of maternal death in both developed and developing countries. Among obstetric hemorrhage PPH is the most common form of major obstetric hemorrhage. It accounts for the majority of the 14 million cases of obstetric hemorrhage that occur each year and affects approximately 2% of all women who give birth and is associated with nearly one quarter of all maternal deaths globally as well as the leading cause of maternal mortality in most low-income countries. It is a significant contributor to severe maternal morbidity and long-term disability as well as to a number of other severe maternal conditions generally associated with more substantial blood loss, including shock and organ dysfunction [1,2].

Worldwide, at least 289,000 women die each year by complication of pregnancy and child birth and about 800 women die from pregnancy or child birth related complications every day. The global MMR in 2013 was 210 maternal deaths per 100,000 live births, down from 380 maternal deaths per 100,000 live births in 1990 [3]. Overwhelming proportion of these deaths occur in developing countries of the world. The maternal mortality ratio in developing countries in 2013 (230) was 14 times higher than in developed regions per 100,000 live births. The sub-Saharan Africa region alone accounted for 62% (179,000) of global deaths followed by Southern Asia at 24% (69,000). In Ethiopia, according to the latest estimate maternal mortality ratio has declined from 676/100,000 live births to 420/100,000 live births in 2013 [3,4]. Majority of these deaths are due to postpartum Hemorrhage within few hours of delivery. Postpartum hemorrhage (PPH) is the major cause of maternal mortality and morbidity worldwide with the highest incidence in developing countries [5]. According to world Health organization (2005) obstetric Hemorrhage causes 127,000 deaths worldwide and is the leading cause of maternal mortality. Globally, obstetric Hemorrhage remains the most significant cause of maternal mortality [6].

Postpartum hemorrhage is defined as the blood loss of more than 500 mls following vaginal delivery or more than 1000 mls following cesarean section. It is also defined as blood loss sufficient to cause hypovolemia, a 10% drop in the hematocrit or requiring transfusion of blood products regardless of the route of delivery [7]. It is primary PPH if it occurs after 24 hours and secondary PPH if it occurs after 24 hours and within 12 weeks of delivery, however several factors such as initial hemoglobin (HB) and infections should be considered. PPH can be minor (500 - 1000 ml) or major (more than 1000 ml). Major could be divided to moderate (1000 - 2000 ml) or severe (more than 2000 ml) [8]. Secondary PPH most likely associated with infections and may initially present with foul smelling vaginal discharge, sub involution of uterus pyrexia and tachycardia [7,9,10]. In addition, PPH may be described as 3<sup>rd</sup> or 4<sup>th</sup> stage depending on whether it occurs before or after delivery of placenta respectively. The effect of the blood loss is more important rather than the amount of blood. For clinical purposes any blood loss that has the potential to produce hemodynamic compromise is considered postpartum hemorrhage. Estimating blood loss has been suggested that clinicians' subjective assessments may under estimate blood loss as much as 50% [7].

Definitions vary and are often based on inaccurate estimates of blood loss. Proposed alternate matrices for defining and diagnosing PPH include change in hematocrit (Hct), need for transfusion, rapidity of blood loss, and vital signs, all of which are complicated by the emergent nature of the condition [7,11].

The accurate estimation of blood loss will allow correctly timed and appropriate intervention by warning of impending hypovolemia shock. Visual estimation of blood loss is of limited value, as under estimation is common, but can be improved significantly by simulating clinical scenarios with known measured blood loss. The use of calibrated collection bags has proven to be a useful tool for more accurate measurement of postpartum Hemorrhage at vaginal deliveries [11].

## **Aim of the Study**

The study is aimed to assess KAP of midwives on prevention and management of PPH to reduce maternal morbidity and mortality caused by PPH.

## **Material and Methods**

### **Study area and study period**

This study was conducted at KolfeKeranyo sub city, Addis Ababa, from February 1, 2016 to February 16. KolfeKeranyo is one of the ten sub cities that are established under Addis Ababa city administration. It is about 9 km away from the center of the city and about 13 kms to the western side of the sub city reaches from the center. It is located at the western part of Addis Ababa between the road to Jimma and Ambo towns. The sub city shares boundaries with Gulale and Addis ketama sub cities in the north, Lideta sub city in the east, Nifas silk lafto sub city in south, and oromiya regional estate of government in the west. According to a report from the city administration and sub city officials it is one of rapidly expanding sub cities of Addis Ababa and also the most densely populated sub city among the rest sub cities and currently it is divided in to 15 woredas with a total area of 6348.09 hectares. According to Addis Ababa bureau of finance and economics report (2008) the total population of the sub city was 524,200 (five hundred twenty four thousand two hundred) and number of expected pregnant women was 12,580. There are no public hospitals but 3 private hospitals 11 health centers, 120 private clinics, 3NGOclinics, 4 MCH centers under the sub city. Among this health facilities Health centers, MCH clinics and hospitals are giving focused ante natal care and delivery services. Furthermore, all the health centers give delivery services and they have total number of 93 midwives (data obtained from kofekeranio sub city finance and economics bureau and health bureau).

### **Study design**

A descriptive cross-sectional study was conducted to assess knowledge, attitude and practice of midwives regarding prevention and management of PPH among midwives working on health centers in KolfeKeranyo sub city.

### **Source population and study population**

#### **Source population**

All midwives professionals working in all health centers in Addis Ababa city.

#### **Study population**

All midwives working in all eleven health centers of KolfeKeranyosub city during the study period.

### **Sample size and sampling technique**

Among total of 93 midwives, all those available midwives during data collection periods was selected using, convenience sampling methods.

### **Dependent variable:**

- Knowledge
- Attitude
- Practice.

### **Independent variable:**

Socio demographic variables:

- Age
- Sex
- Marital status
- Qualification
- Religion
- Years of experience
- Training.

### **Operational definitions**

**Knowledge:** Refers to the level of awareness and understanding of midwives regarding prevention and management of PPH.

There is 31 general knowledge items, based on the responses to these items, the result of the response of each individual was calculated and a mean score was calculated for a total:

- Poor knowledge: Those participants who score below knowledge mean score.
- Good knowledge: Those participants who score above mean score.

**Attitude:** The opinion of midwives about prevention and management of PPH. The responses to 3 items on perception of respondents towards prevention and management of PPH was obtained on a three-point Likert scale, a mean score was calculated for a total and each participant:

- Positive attitude: Those participants who score above mean score of attitude questions.
- Negative attitude: Those participants who score below mean score of attitude questions.

**Practice:** Refers to the ability of midwives to carry out the prevention and management of PPH. There is 4 practice items, based on the responses to these items, a mean score was calculated for a total and each participants:

- Satisfactory practice: those participants who score above mean score.
- Unsatisfactory practice: those participants who score below mean score.

### **Data collection tools and techniques**

Structured self-administered questionnaire was adopted in English after literatures reviewed. The questionnaire contains Social and demographic data, knowledge, attitude and practice questions regarding management of PPH. Data was collected by eleven data facilitators who was selected from each health centers among midwiferies.

### **Data quality assurances**

To keep the data quality, standard questionnaire was adopted. Then, the questionnaires was tested for their accuracy and consistency prior to data collection on midwives outside the study area.

## Data analysis

The data was cleaned, entered and analyzed using SPSS window version 20.0. Then the data was summarized and described using descriptive statistics. After which the result was presented in the form of tables, charts and paragraph.

## Ethical consideration

Ethical clearance was obtained from departmental research ethical review committee of Addis Ababa University College of health science, school of medicine, department of emergency medicine prior to commencement of the study. Official letter of permission from the department was submitted to Addis Ababa city administrative health bureau. Ethical clearance was obtained from Addis Ababa health bureau IRB and the letter of cooperation to conduct research from Addis Ababa health bureau was submitted to kolfekeranio sub city. Kolfekeranio sub city wrote a letter to all eleven health centers in order to conduct the research. In addition, permission was obtained from the Medical director of the health centers to conduct the study and written consent was obtained from each sample subjects. All the collected data was kept confidential and no one except the members of the research team had access to the collected information.

## Dissemination of results

The study result will be presented to Addis Ababa University, Faculty of Medicine department of emergency medicine and documents were disseminated to all responsible bodies in the study area, Furthermore the manuscript will be submitted to national or international peer reviewed journals for possible publication.

## Results

### Socio-demographic characteristics of midwives

#### Age and working experience of midwives

Out of a total 93 midwives in the sub city 87 midwives in 11 governmental Health centers were included in the study, making a response rate of 93.5%. Table 1 showed that Age of the study subjects about, 78 (89.7%) were between 19 - 29 years old, about, 8 (9.2%) were in age group of 30 - 39 years of age and 1 were between 50 - 59 (1.1%) years of age with a minimum age of 20, maximum age of 50, mean of 25.85 and a standard deviation of 4.55. Working experience of respondents showed that 78 (89.7%) had experience of less than 10 years, 7 (8%) between 11 - 20 years, 1 (1.1%) between 21 - 30 years and 1 (1.1%) greater than 30 years with a minimum age of 1, maximum age of 33, mean of  $6.33 \pm 5.24$ .

#### Sex, marital status, religion, qualification and training of midwives

Most, 57 (65.5%) of the respondents were female and, 30 (34.5%) were male. Sixty three (72.4%) of the respondents were single, 1 (1.1%) were widowed and 23 (26.4%) were married. Majority, 58 (66.7%) of the respondents were followers of the Orthodox, 15 (17.2%) were Muslim followers and 14 (16.1%) were protestant Christianity followers. Majority, 69 (79.3%) were diploma holder and 18 (20.7%) were degree holder. Only 36 (41.4%) respondents had training about PPH and 51 (58.6%) were not trained.

#### Knowledge of midwives on prevention and management of PPH

Majority, 80 (92%) of midwives were correctly define PPH as maternal blood loss of greater than 500 ml after vaginal delivery and fifty five, 55 (63.2%) defined as blood loss more than 1000 ml after cesarean section. Few, 8 (9.2%) of respondents were incorrectly define PPH as blood loss more than 1000 ml after vaginal delivery and two, 2 (2.3%) answered as blood loss greater than 500 ml cesarean sec-

Variables		Freq.	Per (%)	Min	Max	Mean	Std. dev
Age	19 - 29	78	89.7	20.00	50.00	25.85	4.55
	30 - 39	8	9.2				
	50 - 59	1	1.1				
Years of experience	< 10 years	78	89.7	1.00	33.00	6.33	5.24
	11 - 20 years	7	8.0				
	21 - 30 years	1	1.1				
	> 30 years	1	1.1				

**Table 1:** Age and years of experience of midwives working on health centers kolfe-keranio sub city, Addis Ababa, Ethiopia, February 2016.

Variables		Frequency	Percentage %
Sex	Male	30	34.5
	Female	57	65.5
Marital status	Single	63	72.4
	Married	23	26.4
	Widowed	1	1.1
Religion	Orthodox	58	66.7
	Muslim	15	17.2
	Protestant	14	16.1
Qualification	Diploma midwifery	69	79.3
	Degree midwifery	18	20.7
Training	Yes	36	41.4
	No	51	58.6

**Table 2:** Sex, marital status, religion, qualification and training socio-demographic characteristics of midwives working on health centers kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016.

tion. All 87 (100%) of the respondents were know different types of PPH. Eighty three 83 (95.4%) were know both primary and secondary types of PPH and 4 (4.6%) were know only primary PPH. About, 73 (83.9%) of participants were mention primary PPH as bleeding after delivery to 24 hours and 52 (59.8%) mentioned secondary PPH as bleeding from 24 hours post-delivery to 12 weeks of postpartum period. Majority, 81 (93.1%) of respondents were mention causes of PPH as uterine atony, 68 (78.2%) mentioned traumatic hemorrhage, 67 (77%) mentioned blood coagulation disorder, 46 (52.9%) mentioned products of coagulation as causes of PPH and 24 (27.6%) were mention as the main causes of PPH is unknown. Seventy, 70 (80.5%) of respondents were reported that they assess PPH by pad count and weight, and also assess by observing vital sings and 51 (58.6%) assess the blood loss by kidney dish. Majority, 77 (88.5%) participants knew that the risk factors of PPH is inactive management of 3<sup>rd</sup> stage of labor, 68 (78.2%) knew over distended uterus is risk factors of PPH, 64 (73.6%) knew previous PPH is risk factors of PPH, 49 (73.6%) knew placenta previa and episiotomy are risk factors of PPH, 40 (46%) knew induction and augmentation of labor is risk factors of PPH, 38 (43.7%) knew that fibroids and infections are risk factors of PPH and 22 (25.3%) knew that use of MgSO<sub>4</sub> in preeclampsia is risk factors of PPH. Eighty three 83 (95.4%) respondents were mentioned sing and symptom of PPH as visible outside vaginal bleeding, 71 (81.6%) knew falling blood pressure as sing and symptom of PPH, 68 (72.4%) knew that pallor as sing and symptom of PPH and 63 (72.4%) knew that rising pulse rate as sing and symptom of PPH.

To state the knowledge status of the respondents each of the respondents asked 31 questions and the result of the response was calculated for each of them by giving one point for each correctly answered and zero point for incorrectly answered. Based on calculated result the mean was calculated and respondents who scored greater than calculated mean marks correctly were considered as good knowledge and respondents who scored less than calculated mean were considered as poor knowledge.

	Variables	Frequency	Percentage	
1	Knowledge about definition of Postpartum Hemorrhage			
1.1	Greater than 500 ml blood loss after vaginal delivery	80	92.0	
1.2	Greater than 1000 ml blood loss after cesarean section	55	63.2	
1.3	Greater than 1000 ml blood loss after vaginal delivery	8	9.2	
1.4	Greater than 500 ml blood loss after cesarean section	2	2.3	
2	Knowledge about types of PPH?	87	100	
3	Respondents knowledge on what type of PPH	Primary PPH only	4	4.6
		Both primary and secondary	83	95.4
4	Primary PPH is bleeding after delivery to 24 hours	73	83.9	
5	Secondary PPH is bleeding from 24 hours after delivery to 12 weeks of postpartum period	52	59.8	
6	<b>Knowledge of respondents about causes of PPH?</b>			
6.1	Main cause of PPH is unknown	24	27.6	
6.2	Uterine atony	81	93.1	
6.3	Traumatic hemorrhage	68	78.2	
6.4	Blood coagulation disorder	67	77.0	
6.5	Products of conception	46	52.9	
7	<b>Respondents knowledge about assessment of PPH</b>			
7.1	Assess the blood loss by kidney dish	51	58.6	
7.2	Pads count and weight	70	80.5	
7.3	Observe vital signs	70	80.5	
8	<b>Knowledge of respondents about risk factors of PPH?</b>			
8.1	Inactive management of 3 <sup>rd</sup> stage of labor	77	88.5	
8.2	Fibroids	38	43.7	
8.3	Placenta previa	49	56.3	
8.4	Previous PPH	64	73.6	
8.5	Over distended uterus	68	78.2	
8.6	Episiotomy	49	56.3	
8.7	Use of MgSO <sub>4</sub> in preeclampsia	22	25.3	
8.8	Induction and augmentation of labor	40	46.0	
8.9	Infection	38	43.7	
9	<b>Signs and symptoms of PPH</b>			
9.1	Visible outside vaginal bleeding	83	95.4	
9.2	Pallor	68	78.2	
9.3	Rising pulse rate	63	72.4	
9.4	Falling blood pressure	71	81.6	

**Table 3:** Knowledge of midwives on prevention and management of PPH among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016 (N = 87).



Table 4 below shows 58 (66.7%) had good knowledge and 29 (33.3%) had poor knowledge with calculated result of minimum 10, maximum 31, range of 21, mean of 22.65 and standard deviation of 5.30.

Level of knowledge			Calculated value of the result				
	Frequency	Percent	Range	Minimum	Maximum	Mean	Std. Deviation
Poor knowledge	29	33.3	21	10	31	22.65	5.30
Good Knowledge	58	66.7					

**Table 4:** General level of knowledge about PPH among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016 (N = 87).

Table 5 shows Fifty three, 53 (60.9%) of midwives had good knowledge about definition of PPH while 34 (39.1%) had poor knowledge with calculated mean of 3.4. Forty six, 46 (52.2%) of midwives had good knowledge about types of PPH while 41 (47.1%) had poor knowledge with calculated mean of 5.3. Forty nine, 49 (56.3%) of midwives had good knowledge about causes of PPH while 38 (43.7%) had poor knowledge with calculated mean of 3.3. Few, 36 (41.4%) of midwives had good knowledge about risk factors while 51 (58.6%) had poor knowledge with calculated mean of 5.1. Only 39 (44.8%) of respondents had good knowledge about assessment of PPH while 48 (55.2%) had poor knowledge with calculated mean of 2.2. Fifty six, 56 (64.4%) of midwives had good knowledge about sign of PPH while 31 (35.6%) had poor knowledge with calculated mean of 3.3.

Knowledge of the participants about	Calculated mean	Above mean (good knowledge)		Below mean (poor knowledge)	
		Frequency	Percentage	Frequency	Percentage
Definition of PPH	3.4	53	60.9%	34	39.1%
Types of knowledge	5.3	46	52.9%	41	47.1%
Common causes of PPH	3.3	49	56.3%	38	43.7%
Risk factors of PPH	5.1	36	41.4%	51	58.6%
Assessment of PPH	2.2	39	44.8%	48	55.2%
Sign of PPH	3.3	56	64.4%	31	35.6%

**Table 5:** Knowledge level of midwives about definition, types, causes, risk factors, assessment and sign of PPH.

**Attitude of midwives toward PPH**

Majority, 81 (93.1%) of respondents were think as postpartum hemorrhage is life threatening and 6 (6.9%) they were don't think as postpartum hemorrhage is life threatening. Almost all, 85 (97.7%) of midwives believed that PPH is treatable and 2 (2.3%) were don't believed. Eighty four, 84 (96.6%) of midwives believed that PPH can be preventable and 3 (3.4%) were don't believed.

To state attitude of the respondents each of the respondents asked 3 questions and the result of the response was calculated for each of them by giving one point for each correctly answered and zero point for incorrectly answered. Based on the result the mean was calculated and respondents who scored greater than calculated mean (2.9) marks correctly were considered as they had positive attitude and respondents who scored less than calculated mean (2.89) were considered as they had negative attitude. The calculated result was minimum 1, maximum 3 with the range of 2, mean 2.9 and standard deviation of 0.38. Based on this 77 (88.5%) had positive attitude and 10 (11.5%) had negative attitude.



Correlation between attitude and socio-demographic variables were analyzed by Pearson Chi-Square Tests and it was found that there was the calculated Pearson chi-square value for the age group ( $P = 0.933$ ), sex ( $P = 0.696$ ), level of qualification ( $P = 0.642$ ), religion ( $P = 0.848$ ) training ( $P = 0.394$ ) of midwives was less than tabulated value, hence there is no significant association between attitude and age group, sex, level of qualification and training. There is significant association between marital status and attitude with ( $P = 0.004$ ).

**Practice of midwives on prevention and management of PPH**

To prevent PPH, 82 (94.3%) respondents were give oxytocin drug, 81 (93.1%) were did empty the bladder, 78 (89.7%) were assess blood lost, 73 (83.9%) were check parts and membrane after placenta delivery, 72 (82.8%) used proper suturing of the episiotomy, 68 (78.2%) were inspect perineum after delivery, 64 (73.6%) were avoid routine episiotomy, 63 (72.4%) were monitor contractions, and also support flexion point during labor to prevent premium laceration, 59 (67.8%) were assess after delivery for contractions, 49 (56.3%) were register time of delivery to known time of placenta delivery, 41 (47.1%) were attend delivery of the baby slowly between the contractions, 40 (46.0%) were register time of placental delivery, 39 (44.8%) were allowing the placenta to separate and the uterus to contract before attempting to deliver placenta.

To manage a patient with primary PPH, all most all, 85 (97.7%) respondents were call for help 83 (95.4%) were administer IV fluids, 82 (94.3%) were control bleeding by uterine massage, 75 (86.2%) were suture any lacerations, 71 (81.6%) were administer ergometrine (0.5 mg) IV/IM slowly, 67 (77%) were send for investigation, 66 (75.9%) were bimanually remove placenta, 61 (70.1%) were insert folly catheter, 58 (66.7%) were blood transfusion and 44 (50.6%) were administer misoprostol 1000 micrograms rectally. To manage secondary PPH, sixty nine, 69 (79.3%) of respondents were refer the patient to hospital for surgical management and 63 (72.4%) were administer antibiotic. To follow management of PPH, 81 (93.1%) of respondents were used measuring pulse and other vital signs, 72 (82.8%) were observe amount of blood, 70 (80.5%) were transfer the patient for better management and 51 (58.6%) were staying the mother remains in labor room if bleeding stopped.

		Knowledge status of the midwives
Age group of respondents	Chi-square	.563
	Df	2
	Sig.	.755 <sup>a, b</sup>
Sex of respondents	Chi-square	.229
	Df	1
	Sig.	.632
Marital status of respondents	Chi-square	1.329
	Df	2
	Sig.	.514 <sup>a, b</sup>
Qualification of respondents	Chi-square	2.731
	Df	2
	Sig.	.255 <sup>a, b</sup>
Religion of respondents	Chi-square	.177
	Df	2
	Sig.	.915 <sup>a</sup>
Training about PPH given for respondents	Chi-square	1.505
	Df	1
	Sig.	.220

**Table 6:** Association between socio-demographic variables and knowledge of midwives among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016. Pearson chi-square tests.

S no	Variables	Response	Frequency	Percentage
1	Do you think postpartum hemorrhage is life threatening?	Yes, I think	81	93.1
		No, I don't think	6	6.9
2	Do believe postpartum hemorrhage treatable?	Yes, I believe	85	97.7
		No, I don't believe	2	2.3
3	Do you believe PPH can be preventable?	Yes, I believe	84	96.6
		No, I don't believe	3	3.4

**Table 7:** Attitude of midwives toward PPH among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016.

To state practice of the respondents each of the respondents asked 30 questions and the result of the response was calculated for each of them by giving one point for each correctly answered and zero point for incorrectly answered. Based on the result the mean was calculated and respondents who scored greater than calculated mean marks correctly were considered as satisfactory practice and respondents who scored less than calculated mean were considered as unsatisfactory practice. Based on this 47 (54%) were performed satisfactory and 40 (46%) were performed unsatisfactory practice with calculated result of minimum 4, maximum 30, range of 26, mean of 22.64 and standard deviation of 6.84. Table 8 shows Fifty four, 44 (50.6%) of midwives were perform satisfactory practice regarding prevention of PPH while 43 (49.4%) were perform unsatisfactory practice with calculated mean of 10. Sixty, 60 (69%) of midwives were perform satisfactory practice regarding management of PPPH while 27 (31%) were perform unsatisfactory practice with calculated mean of 7.95. Forty five, 45 (51.7%) of midwives were perform satisfactory practice regarding management of SPPH while 42 (48.3%) were perform unsatisfactory practice with calculated mean of 1.5. Forty five, 45 (51.7%) of midwives were perform satisfactory practice regarding follow up of PPH management while 42 (48.3%) were perform unsatisfactory practice with calculated mean of 3.1.

Attitude			Result of the response				
	Frequency	Percent	Range	Minimum	Maximum	Mean	Std. Deviation
Negative attitude	10	11.5	2	1	3	2.876	0.367411
Positive attitude	77	88.5					

**Table 8:** Attitude of midwives toward PPH among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016 (N = 87).

Pearson Chi-Square Tests		
		Attitude status of midwives
Age group of respondents	Chi-square	.138
	Df	2
	Sig.	.933 <sup>a, c</sup>
Sex of respondents	Chi-square	.152
	Df	1
	Sig.	.696 <sup>a</sup>
Marital status of respondents	Chi-square	11.170
	Df	2
	Sig.	.004 <sup>a, *, c</sup>

Qualification of respondents	Chi-square	.886
	Df	2
	Sig.	.642 <sup>a, c</sup>
Religion of respondents	Chi-square	.329
	Df	2
	Sig.	.848 <sup>a</sup>
Training about PPH given for respondents	Chi-square	.726
	Df	1
	Sig.	.394 <sup>a</sup>

**Table 9:** Association between socio-demographic variables and attitudes of midwives among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016.

	Variables	Frequency	Percentage
1	What do you do to prevent postpartum hemorrhage?		
1.1	Empty the bladder	81	93.1
1.2	Monitor of contractions	63	72.4
1.3	Avoid the routine episiotomy	64	73.6
1.4	Delivery of the baby slowly between the contractions	41	47.1
1.5	Support flexion point during labor to prevent premium laceration	63	72.4
1.6	Register time of delivery to known time of placenta delivery	49	56.3
1.7	Give oxytocin drug	82	94.3
1.8	Allowing the placenta to separate and the uterus to contract before attempting to deliver placenta	39	44.8
1.9	Register time of placental delivery	40	46.0
1.10	Checking parts and membrane after placenta delivery	73	83.9
1.11	Proper Suturing of the episiotomy	72	82.8
1.12	Inspection of perineum after delivery	68	78.2
1.13	Assess after delivery for contractions	59	67.8
1.14	Assessment of blood lost	78	89.7
2	How you manage a patient with primary PPH?		
2.1	Call for help	85	97.7
2.2	Control bleeding by uterine massage	82	94.3
2.3	Administration of IV fluids	83	95.4
2.4	Send for investigation	67	77
2.5	Blood transfusion	58	66.7
2.6	Administering misoprostol 1000 micrograms rectally	44	50.6
2.7	Administering ergometrine (0.5mg) IV/IM slowly	71	81.6
2.8	Bimanual removal of placenta	66	75.9
2.9	suturing any lacerations	75	86.2
2.10	Inserting foley catheter	61	70.1

3	How you manage a patient with secondary PPH?		
3.1	Administering antibiotic	63	72.4
3.2	Referring to hospital for surgical management	69	79.3
4	Follow up on management of PPH		
4.1	Observe amount of blood	72	82.8
4.2	Measure pulse and other vital signs	81	93.1
4.3	The mother remains in labor room if bleeding stopped	51	58.6
4.4	Transfer to hospital for better management	70	80.5

**Table 10:** Practice of midwives on prevention and management of PPH among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016 (N = 87).

Table 12 shows that the calculated chi square values for age group, marital status, and educational level of qualification, religion and ever attended training about PPH were less than table values hence there was no significant association found for age group, marital status, and educational level of qualification, religion and attended training with their practice status. However, the correlation between practice and gender was analyzed by Pearson Chi-Square Tests and it was found that there was the calculated Pearson chi-square value for there was more than tabulated value, hence there is significant association between practice and gender.

		Practice of midwives
Age group of respondents	Chi-square	6.827
	Df	2
	Sig.	.033 <sup>a, b, c</sup>
Sex of respondents	Chi-square	6.874
	Df	1
	Sig.	.009 <sup>a</sup>
Marital status of respondents	Chi-square	1.233
	Df	2
	Sig.	.540 <sup>b, c</sup>
Qualification of respondents	Chi-square	2.738
	Df	2
	Sig.	.254 <sup>b, c</sup>
Religion of respondents	Chi-square	1.435
	Df	2
	Sig.	.488 <sup>b</sup>
Training about PPH given for respondents	Chi-square	.185
	Df	1
	Sig.	.667

**Table 12:** Association between socio-demographic variables and practice of midwives among midwives working on health centers of kolfekeranio sub city, Addis Ababa, Ethiopia, February 2016.

Pearson chi-square tests.

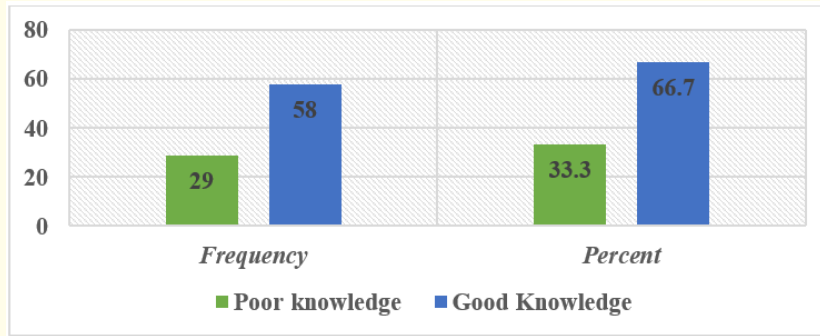


Figure 1: Level of knowledge of midwives about PPH prevention and management.

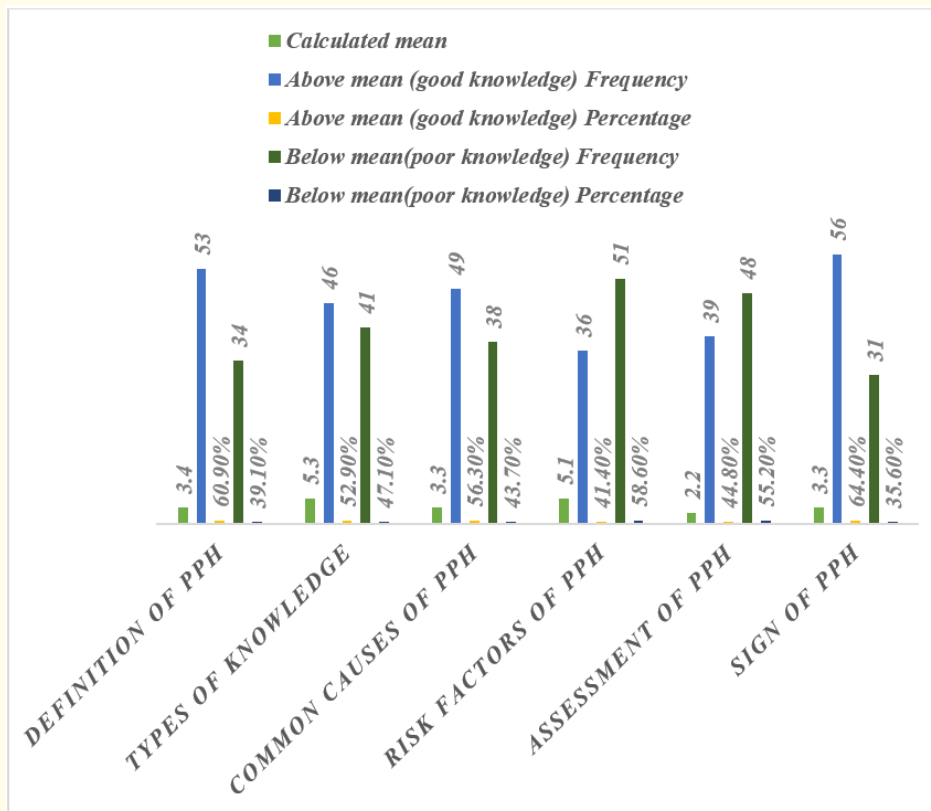


Figure 2: Midwives knowledge about PPH prevention and management.

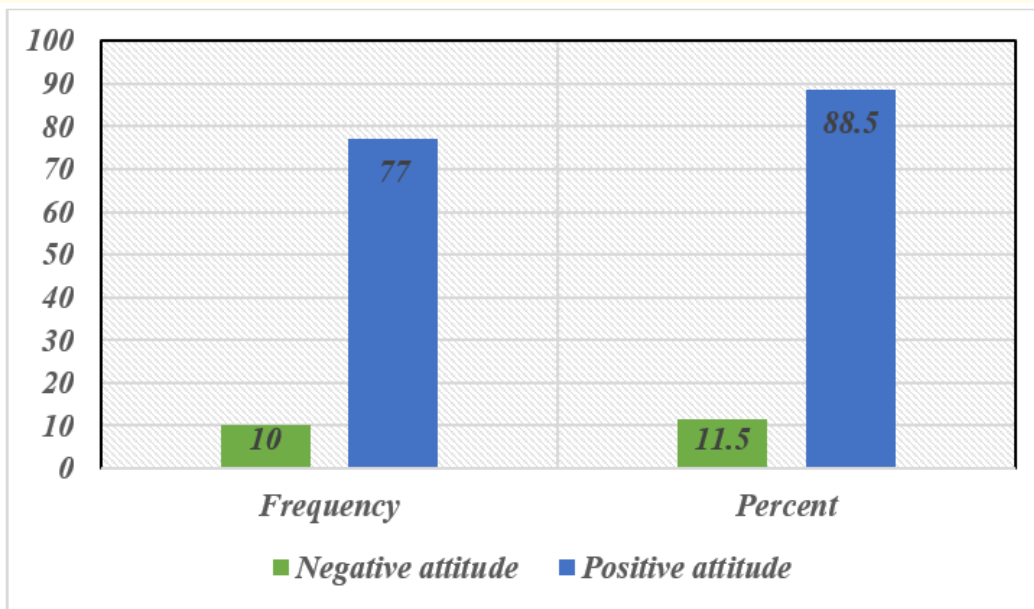


Figure 3: Attitude status of midwives toward PPH prevention and management.

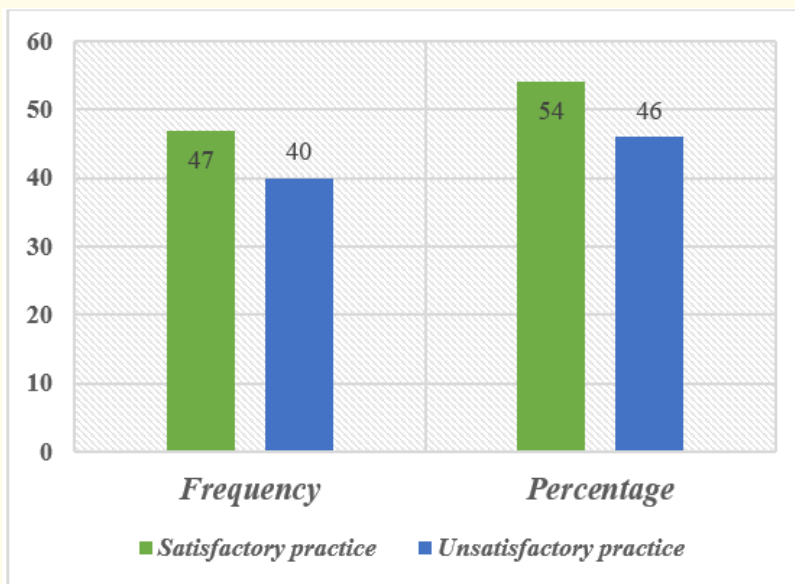


Figure 4: Level of practice of midwives on PPH prevention and management.

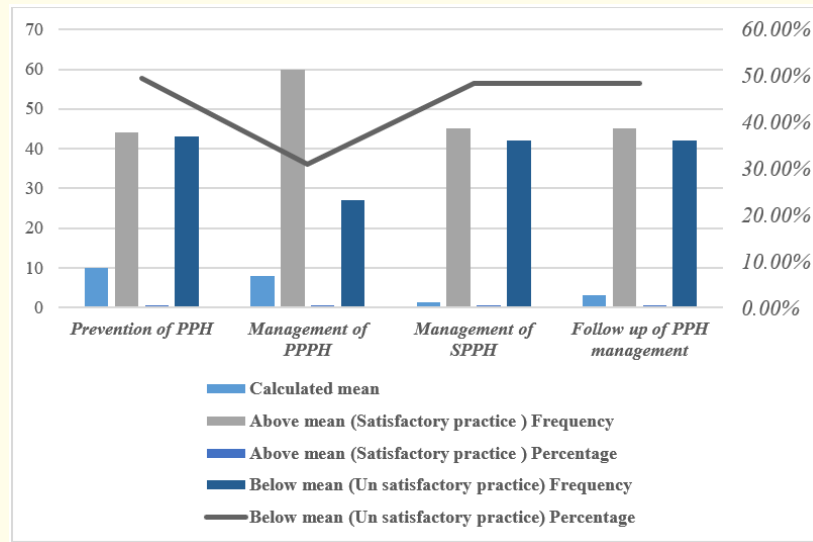


Figure 5: Level of practice of midwives on PPH prevention and management.

## Discussion

PPH is the major cause of maternal mortality and morbidity worldwide with the highest incidence in developing countries. Severe bleeding is the single most important cause of maternal deaths worldwide. The findings of this study have provided insight information on Midwives knowledge, attitude and practice regarding prevention and management of PPH in the study area.

This study showed that midwives had good knowledge about 66.7% regarding PPH prevention and management less than Midwives Knowledge of study done on Knowledge and practice of nurse midwives at Sudan in three selected teaching hospital which was 78% [26]. The present study has showed high level of Knowledge 85.9% about PPH definition among midwives as revealed by the study knowledge of strategies used in the prevention and management of postpartum hemorrhage by midwives in Bayelsa state, (Nigeria) [27] and similar to Midwives Knowledge of study done on Knowledge and practice at Sudan in three selected teaching hospital (81.3%) [26] and agreed with study Knowledge, attitudes and practices of midwives towards active management of third stage of labor to preventing post-partum hemorrhage at Addis Ababa Health Center (82.4%) [25]. Even though majority of the mid wives know the definition of PPH post vaginal delivery, in this study, only (63.2%) know the definition of PPH secondary to cesarean section similar to study done on Knowledge and practice at Sudan in three selected teaching hospital 67.3% were define PPH [26]. This study shows high knowledge of respondent (89%) regarding types of PPH and its definition congruent to study done in Sudan 84.7% were know types and definition of PPH [26]. The finding of this study also revealed that all (100%) midwives know types of PPH and they have high knowledge 95.4% about both primary PPH and secondary PPH similar to study conducted in Sudan. This may be due to midwives have information about PPH from college or university they had been learned. Although they had high knowledge of types of PPH only (83.9%) know the definition of primary PPH and 52 (59.8%) know definition of secondary PPH similar to study conducted in Sudan which shows 77.6 % of midwives know primary PPH 73.5% and know secondary PPH [26]. The elaboration is may be due to lack of in-service training to updates knowledge.



This study illustrated that Midwives had low knowledge only 56.3% with good knowledge regarding causes of PPH opposite to study conducted in Sudan that shows high knowledge (81.3%) [26]. The finding of this study shows low knowledge 44.8% regarding assessment of PPH. This poor level of knowledge might be due to they had not attended any course or workshop on PPH. management and prevention at the work place. This study shows there is no association between socio demographic characteristics and knowledge of respondents with  $p > 0.05$  similar to study conducted in Bayelsa state, Nigeria that revealed that there is no associations with  $p > 0.05$  [27].

Definite cause for PPH is unknown, early determination of the risk factors give the clue for prevention, Knowledge of the Midwives about risk factors of PPH was 56.8% similar to study conducted in Sudan 64.2% which is not enough to helped them in risk reduction for PPH. The present study indicated that the respondents had high knowledge about (81.9%) regarding sign of PPH similar to study conducted in Sudan that shows 82.5% [26].

In this study midwives attitudes towards PPH prevention and management was positive, (88.5%) and negative, (23%) similar to study done at Addis Ababa on AMTSL that revealed (97.8%) had positive attitude toward AMTSL [25]. This may indicates they had information about PPH.

This study reveal that midwives had 54% satisfactory practice and (46%) unsatisfactory regarding prevention and management of PPH that is not satisfactory when compared with their knowledge. This may be indicate Prevention of PPH is the main stay and corner stone to reduce maternal mortality, in this study Practice level of the nurse midwives about prevention of PPH was 71.6% similar to study conducted in Sudan that shows 69.9% [26]. This study shows high level of practice regarding PPH prevention through empty bladder 93.1% similar to study conducted in Bayelsa state (Nigeria) shows (93.8%) and greater than study done in Sudan that shows 75%, administration of oxytocin 94.3% as study conducted in Sudan which was 96.7% and greater than study conducted on AMTSL in Addis Ababa Health center which was (77.9%), checking parts and membrane after placenta delivery (83.9%) similar to Bayelsa state (Nigeria) study 85.7%, Proper suturing of the episiotomy (82.8%) similar to Bayelsa state (Nigeria) study 95.9%, and assessment of blood lost (89.7%) [25-27].

The finding of present study shows that midwives had low level of practice regarding PPH prevention through skills done on delivery of the baby slowly between the contractions 47.1%, avoid the routine episiotomy 73.6%, Support flexion point during labor to prevent premium laceration 72.4% register time of delivery to known time of placenta delivery 56.3%, allowing the placenta to separate and the uterus to contract before attempting to deliver placenta 44.8% and register time of placental delivery 46.0% opposite to study conducted in Bayelsa (Nigeria) [27].

This study shows midwives were highly used call for help 97.7%, control bleeding by uterine massage 94.3%, administration of IV fluids 95.4%, observe amount of blood (82.8%) and measure, pulse and other vital signs 93.1%. and transfer to hospital for better management 80.5% similar to study conducted in Sudan that showed call for help 87.8%, control bleeding by uterine massage 100%, administration of IV fluids 93.9%, observe amount of blood 100% and measure, pulse and other vital signs 89.8% [26].

## **Conclusion**

From the study majority 58 (66.7%) had good knowledge, while 29 (33.3%) midwives had a poor knowledge, most of the participants have high attitudes towards prevention and management of PPH with a percentage of 88.5%, and 47 (54%) of midwives perform satisfactory practice whereas 40 (46%) had unsatisfactory practice.

The study found out that socio-demographic characteristics of study participants such as age groups  $P = 0.755$ , sex ( $p = 0.632$ ), and marital status ( $p = 0.514$ ), level of education ( $p = 0.255$ ), religion ( $p = 0.915$ ) and training ( $p = 0.220$ ) had no significant association with knowledge status and also there is no significant association between attitude and age groups, sex, level of qualification, religion and training. However, there is significant association between attitude and marital status of midwives. There is association between practice and gender of midwives but there is no association with Pearson chi-square value for age groups, sex, and marital status, level of education, religion and training.

Generally, this study shows high gap of knowledge and practice status of midwives regarding PPH prevention and management.

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### **Disclosure**

The author reports no conflicts of interest in this work.

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