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Assessment Of Knowledge, Attitude, And Practice Of Midwives On Active Management Of Third Stage Of Labour At Selected Health Centers Of Addis Ababa, Ethiopia, 2014

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Abstract

Background: The third stage of labour which, starts immediately after the infant is born, includes the separation and detachment of the placenta from the uterine wall, and ends with complete expulsion of the placenta and membrane. This period is considered to be the most hazardous stage for the birthing woman due to the risk of profuse hemorrhage. Severe bleeding is the single most important cause of maternal deaths worldwide. Over 90% of women who die of postpartum hemorrhage, the most important cause is uterine atony, however, research shows that a simple, inexpensive, effective, adaptable and evidence based practical technique known as active management of third stage of labour effectively reduces the occurrence of hemorrhage caused by uterine atony by 60%.

Objective: The objective of this study was to assess the Knowledge, Attitude, and Practice of Midwifes on active management of third stage of labour at selected health centers of Addis Ababa.

Methods: Institution based cross sectional study supplemented with observation was conducted among Midwives in health center of Addis Ababa. Convenience sampling method was carried out. The questionnaires contain open as well as closed ended questions which covers socio demographic information, knowledge, attitude and practice of midwives on active management of third stage of labour. These were prepared in English. After checking for completeness and consistency, data was coded and entered into Epi-info programs and transported to SPSS version 17 for analysis Data was presented by tables.

Result: 136 midwives who worked in the 26 health center of Addis Ababa were included in the study. The findings revealed that, although mid-wives generally had good knowledge about active management of third stage of labour 82.4% stated the definition, about, 69(50.7%) of midwives stated that active management of third stage of labour preventing PPH and about, 35 (25.7%) of them responded that it is increases the ability of uterus to contract, and facilitate separation of placenta. Attitudes towards active management of third stage of labour was positive, 133 (97.8%) stated that active management of third stage of labour should be used and advantageous to all pregnant mothers to prevent postpartum hemorrhage. Practical aspects regards active management of third stage of labour, 106 (77.9%) had given oxytocin with in the first minute, 121(89%) used controlled cord traction, 117 (86%) performed uterine massage with in the first minute after delivery and only 92 (67.6%) had estimated blood loss. When considering that standard observation guide and standard questions set on active management of third stage of labour, only 70 (51.5%) of midwives achieved satisfactory standard scores in knowledge question and 64 (47%) had achieved good in skills.

Conclusion: Midwives should be trained to update the knowledge and skill in order to provide safe and qualified care. Not only training but also supportive supervision should integrate as necessary to achieve the goals set for maternal and newborn survival.

Key words: Oxytocin, active management, Third stage of labor, Postpartum Haemorrhage.

1. INTRODUCTION

Parturition or labour is a physiological process during which the products of conception that is the fetus, membranes, umbilical cord and placenta, are expelled outside of the uterus. Labour is achieved with changes in the biochemical connective tissue and with gradual effacement and dilatation of the uterine cervix as a result of rhythmic uterine contractions of sufficient frequency, intensity, and duration (Yvonne, 2009).

Labour is divided into four stages. The first stage starts from the onset of true labour pains and ends with full dilatation of the cervix. The second stage starts from the full dilatation of cervix and ends with expulsion of the fetus from the birth canal. The third stage begins after the expulsion of fetus and ends with expulsion of the placenta and membranes. The fourth stage is the stage of early recover; it begins after the expulsion of placenta

and membranes and lasts for one hour (Diaa, 2009).

The third stage of labour usually lasts between five and 15 minutes, but any duration up to one hour may be within normal limits (McDonald, 2004). This period is considered to be the most hazardous stage for the birthing woman due to the risk of profuse hemorrhage (Jangsten, 2009).

The major complication associated with this stage is postpartum hemorrhage (PPH), PPH is generally defined as blood loss greater than or equal to 500 ml within 24 hours after birth, while in severe condition blood loss is greater than or equal to 1000 ml within 24 hours (Tan, 2008). Postpartum hemorrhage (PPH) is a major cause of maternal mortality and morbidity, particularly in developing countries, where most pregnancy-related deaths are associated with hemorrhage (ICM, IFGO, 2003).

Most such deaths occur because of insufficient uterine contraction soon after birth. In most of the cases morbidity and mortality due to PPH occur in the first 24 hours following delivery and these are regarded as primary whereas any abnormal or excessive bleeding from the birth canal occurring between 24 hours and 12 weeks postnatal is regarded as secondary PPH. It may result from failure of the uterus to contract adequately (atony), Uterine atony is the most common cause and consequently the leading cause of maternal mortality worldwide (ICM, IFGO, 2004).

The two management packages for the third stage of labour are commonly used, known as active management and expectant management. In active management, several prophylactic interventions are applied in combination. WHO recommends administration of Oxytocin soon after delivery of the baby, controlled cord traction, and uterine massage after placental delivery. In expectant management, the interventions included in active management are withheld unless needed (Rabe, 2004).

Active management of third stage of labour (AMTSL) is a simple and practical intervention to reduce the incidence of PPH has been identified, globally endorsed, and widely promoted for more than a decade as part of programs to reduce maternal mortality (WHO, 2007).

Overall, the risk of PPH was more than 60% lower with active management than with expectant management. Active management of the third stage of labour consists of interventions designed to facilitate the delivery of the placenta by increasing uterine contractions and to prevent PPH by averting uterine atony. Every attendant at birth needs to have the knowledge, skills, and critical judgment to carry out active management of the third stage of labour, as well as access to required supplies and equipment (ICM, IFGO, 2004). AMTSL is a feasible and inexpensive intervention that can help to prevent primary PPH and save millions of women's lives (POPPHI, 2006).

The third stage of labor can be seen as a period of great potential hazard, or it can be viewed as a normal physiologic process with some risks. The third stage of labor is associated with postpartum hemorrhage (PPH), which is an important cause of maternal morbidity and mortality worldwide (Tina, 2005).

The risk of death from childbirth represents one of the greatest inequities in global health. Globally, at least 585, 000 women die each year by complications of pregnancy and child birth (WHO, 2005). The majority of maternal deaths (61%) occur in the postpartum period, and more than half of these take place within a day of delivery. Approximately 30% (in some countries, over 50%) of direct maternal deaths worldwide are due to hemorrhage. Despite our knowledge of the risk factors, we can't predict which birth will be complicated by PPH.

Postpartum Haemorrhage (PPH) is the leading cause of maternal deaths (WHO, 2005). Active management reduces the relative risk of postpartum haemorrhage by around 60%, compared with physiological care (Prendville, 2003).

In Ethiopia maternal deaths account for 21.6 percent of all deaths among women aged 15-49. This shows that women of reproductive age face a very high risk of maternal death in the population, regardless of the level (CSA, 2006).

Most maternal deaths due to PPH occur in low income countries in settings (both hospital and community) where there are no birth attendants or where birth attendants lack the necessary skills or equipment to prevent and manage PPH and shock (ICM, IFGO, 2003). Therefore, PPH remains one of the top five causes of maternal mortality and as such active management of the third stage of labor should be given full consideration in an effort to reduce maternal mortality.

Therefore, this study was conducted to evaluate the knowledge, attitude and practice of midwives on active management of third stage of labour working at health centers in Addis Ababa, Ethiopia.

The study is important for different stakeholders addressing the issues related to maternal morbidity and mortality. Findings from the study provide information for the policy makers to develop strategies and guidelines or standards for scaling up the use of active management of third stage of labour as an important tool to prevent maternal morbidity and mortality and improve maternal health.

4. Methods

4.1. Study Area and period

Addis Ababa is the capital city of Ethiopia and the seat for the African Union. Addis Ababa has a population size of over 3 million (3,038,096) with annual growth rate of 2.1(data obtained from central statistical agency of

Ethiopia). The City has classified in two administrative layers such as the sub-city top layers, followed by Woredas, based on current classification Addis Ababa has ten sub cities and 116 Woredas.

The city has thirteen public hospitals, of which, 5 are under Addis Ababa Regional Health Bureau and 5 are specialized referral (central) Hospitals. Two are defense forces (military) referral hospitals and one hospital under army force. Furthermore the city has 40 health centers ruled by the Addis Ababa health bureau and 5 newly opened health centers from these 26 health centers provide obstetric care services.

The potential health coverage is about 100%. Antenatal coverage estimated to be 82.11%, institutional delivery 39.89%, postnatal coverage 19.47%, and family planning 23.27% and total fertility rate is about 1.5%.

Total number of midwifes in Addis Ababa are about 421 in governmental health institution from which about 143 are working in health centers. This study was conducted in public health centers of Addis Ababa which have been providing obstetric care services from January 2014 to March 2014.

4.2. Study Designs

An institution based cross - sectional study supplemented with observational study design was conducted by using self-administered questionnaire and observational check list to assess KAP of midwives towards active management third stage of labour.

4.3. Sampling and Sample size

The study was conducted among 143 midwives in the selected health centers (all midwives they are working in the health center during study period)

The total numbers of Health Centers in Addis Ababa are 40 of which **5** are newly opened health centers. From these institutions 26 health centers provide obstetric care services. All 26 health centers were selected purposefully because they provide obstetric care services and Midwifes are available in these health centers.

4.4. Data collection

Self-administered structured questionnaire and observation by using observational check list was employed. The questionnaires contain open as well as closed ended questions which covers socio demographic information, knowledge, attitude and practice of midwives on active management of third stage of labour. These were prepared in English.

4.5. Data quality Issues

To keep the quality of the data, standard questionnaire was adapted. Then, the questionnaires were tested for their accuracy and consistency prior to the collection of data on Midwifes outside the study subjects. Data collectors are selected appropriately and trained. The data collectors were midwives who have experience and working in respective health institutions. Adequate information was given on how to fill the questionnaire. During the data collection process each questionnaire was checked daily by the supervisors and principal investigators for its completeness and accuracy.

4.6. ***Data entry and analysis***

The collected data was cleaned, coded, and entered to Epi-info version 3.5.1 and transported to SPSS (statistical package for social sciences) version 17 for analysis. Frequency distribution tables were used to describe the findings. A logistic regression test was used to control confounding variables and identify major determinants for KAP of Midwives on AMSTL.

4.7. Operational definitions

Attitude: the opinion of the midwives about active management of third stage of labour.

Positive attitude: if the participant responds 3 questions.

Negative: if the participant responds less than 3 questions.

Knowledge: Refers to the level of awareness and understanding of midwives regarding active management of third stage of labour. It can be measured by how much the participants respond correctly about its parts.

Good: if the participant responds 8 and above questions of the questioner.

Poor: if the participant responds less than 8 questions of the questioner.

Practice: Refers to the ability of midwives to carry out the management of third stage of labour.

Good: Step performed correctly in proper sequence

Poor: Step performed in proper sequence but lacks precision and step not performed by participant during observation

4.8. Ethical Considerations

Ethical clearance was obtained from the institutional review board (IRB) of the School of Allied Health Sciences department of Nursing and Midwifery, Addis Ababa University and Addis Ababa Regional Health Bureau and permission was obtained from the health centers before the data collection process started. The study participants were informed about the purpose of the study and the importance of their participation in the study. Then after assuring the confidential nature of responses and obtaining informed consent from the study subject data collection was conducted.

5. Result

5.1. Socio-demographic Characteristics of Midwives

A total of 136 Midwives in 26 governmental Health centers were included in the study, making a response rate of 95.1%. Age of the study subjects about, 96 (70.6%) were between 19-29 years old and about, 31 (22.8%) were in age group of 30-39 years of age. Most, 84 (61.8%) of the respondents were female and about, 52 (38.2%) were male. Majority, 90 (66.2%) of the respondents were followers of the Orthodox Christianity followed by protestant, accounted for 29 (21.3%). Eighty two (60.3%) of the respondents were single and 51 (37.5%) were marred. With regard to their length of service about, 83 (61%) of the respondents were 0-4 years and about, 20(14.7%) were 10-14 years. Majority, 115 (84.6%) were diploma holder and 21 (15.4%) were degree holder (Table 1).

Table 1: - Socio-demographic characteristics of Midwives at Addis Ababa Health Center, May 2014.

Variable	Frequency	Percent
Age		
19-29	96	70.6
30-39	31	22.8
40-49	8	5.9
>50	1	0.7
Sex		
Male	52	38.2
Female	84	61.8
Religion		
Orthodox	90	66.2
Muslim	14	10.3
Catholic	1	0.7
Protestant	29	21.3
Other	2	1.5
Marital status		
Single	82	60.3
Married	51	37.5
Divorced	2	1.5
Widowed	1	0.7
Length of service		
0-4	83	61
5-9	19	14
10-14	20	14.7
>15	14	10.3
Educational level		
Diploma	115	84.6
Degree	21	15.4

5.2. Knowledge of Midwives about AMTSL

Majority, 112 (82.4%) of the respondent were correctly mention Postpartum hemorrhage (PPH) as maternal blood loss after child birth which is more than 500 ml and about 10 (7.4%) mentioned as blood loss more than 1000 ml. About, 102 (75%) of the respondent routinely measure blood loss by estimating the blood loss and 19 (14%) measure by using blood indices or by checking the hemoglobin level. Almost all 135(99.3%) of the respondents were aware of AMTSL. Majority of participants were reported that they offer AMTSL mainly for preventing PPH 69(50.7%) and 35 (25.7%) of them responded that it increases the ability of uterus to contract, facilitate separation of placenta and preventing PPH (Table 2).

Table 2: Knowledge of midwives about AMTSL at Addis Ababa health center, May 2014

Variable	Frequency	Percent
Postpartum hemorrhage (PPH) is		
1000 ml	10	7.40
800ml	8	5.90
500 ml	112	82.40
400 ml	4	2.90
1000 and 500 ml	2	1.50
Routinely measure PP blood loss		
Estimate blood loss	102	75.00
Blood indices	19	14.00
Other	3	2.20
Estimate blood loss and Blood indices	12	8.80
AMTSL reduces the risk of PPH		
Yes	135	99.30
No	1	0.70
Use AMSTL		
Yes	135	99.30
No	1	0.70
Main goal of AMSTL		
Increase the ability of uterus to contract	10	7.40
Facilitate separation of placenta	12	8.80
Prevent PPH	69	50.70
All	35	25.70
Other	10	7.40

To state the knowledge of the respondents on AMTSL each midwife asked 10 questions, one point for each correctly answered and zero point for incorrectly answered. Respondents who scored 8 marks and above correctly were considered as knowledgeable and respondents who scored less than 8 were considered as not knowledgeable. Based on this 70 (51.5%) were knowledgeable and 66(48.5%) were not (Table 3).

Table 3: Knowledge of midwives about AMTSL at Addis Ababa health center, May, 2014

Asked knowledge question	Frequency of correct responses (N=136)	Percent %
Examine the mother during the 1st hour after delivery	56	41.20
Postpartum hemorrhage (PPH)	112	82.40
Risk factors for PPH	104	76.50
Cause of immediate postpartum Hemorrhage	83	61.00
AMTSL reduces the risk of PPH	135	99.30
Components of AMSTL	86	63.20
Utero-tonics used for management of the third stage of labor	121	89.00
Main goal of AMSTL	69	50.70
Oxytocin is preferred in AMTSL	108	79.40
Recommended dose of Oxytocin	119	87.50

5.3. Attitudes of midwives about AMTSL

Majority, 65 (47.8%) of the respondents were reported for the question 'what is your belief towards AMTSL?' they said AMSTL mainly prevent PPH and about 22 (16.2%) said that AMSTL prevent maternal morbidity and mortality and the rest of the respondent said it facilitate 3rd and 4th stage of labour and prevent further complication.

To state the attitude of the respondents on AMTSL each midwife asked 3 questions, one point for each correctly answered and zero point for incorrectly answered. Respondents who scored 3 (100%) marks correctly were considered as positive attitude and respondents who scored less than 3 were considered as negative attitude. Based on this 132 (97.1%) had good attitude towards AMSTL and 4(2.9%) had negative attitude.

5.4. AMTSL practice by midwives

5.4.1. By self-administered questionnaire

Only 34 (25%) of the respondent used Oxytocin at the presentation of anterior shoulder and 71(52.2%) of the respondent do not used at the presentation of anterior shoulder but about 115 (84.6%) of them use Oxytocin after delivery of the infant. Majority, 105 (77.2%) do not used Oxytocin after delivery of the placenta and about 23 (16.9%) use sometimes. About, 131 (96.3%) of the respondent use controlled cord traction for the delivery of placenta and 128 (94.1%) of the respondent immediately massage the uterus after delivery of the placenta (Table 6).

Table 6: AMTSL practice of midwives by self-administered questionnaire at Addis Ababa health center, May 2014.

Variable	Frequency	Percent %
Use pitocin at presentation of anterior shoulder		
Not at all	71	52.2
Sometimes	31	22.8
Always	34	25.0
Use pitocin immediately after delivery of the infant		
Not at all	9	6.6
Sometimes	12	8.8
Always	115	84.6
Use pitocin immediately after delivery of the placenta		
Not at all	105	77.2
Some times	23	16.9
Always	8	5.9
Use early cord clamping, before pulsation stops		
Not at all	45	33.1
Some times	34	25.0
Always	54	39.7
Use controlled cord traction		
Not at all	1	.7
Some times	4	2.9
Always	131	96.3
Use uterine massage immediately after the expulsion of the placenta		
Not at all	4	2.9
Some times	4	2.9
Always	128	94.1
Await for signs of placental separation		
Not at all	53	39.0
Some times	26	19.1
Always	57	41.9
Await for cessation of cord pulsation prior to clamping/cutting the cord		
Not at all	34	25.0
Some times	40	29.4
Always	62	45.6

I use active management of the third stage of labor on all my patients		
Some time	3	2.2
Always	133	97.8
When I use active management for the third stage of labor, I use all three components		
Not at all	13	9.6
Some times	8	5.9
Always	115	84.6

5.4.2. MTSL practice of midwives by observation

To state the practice of the respondents on AMTSL each midwife was observed on 18 steps, one point for each correctly done procedure and zero point for incorrectly and not done procedure. Respondents who scored 16 marks and above were considered as good practice and respondents who scored less than 16 were considered as poorly practiced. Based on this only 64 (47.1%) were performed well and 72 (52.9%) were not (Table 7).

Table 7: AMTSL practice by midwives at Addis Ababa health center, May, 2014.

Observed AMTSL standard steps per observation guide	**Correctly done skills N=136**	**Percent %**
Rules out presence of another fetus	112	82.4
Administers 10 units of IM Oxytocin		
With in 1 minute	106	77.9
With in 3 minute	24	17.6
> 3 minute	6	4.4
Clamps cord close to perineum	114	83.8
Second clamp on the cord and cuts the cord	132	97.1
Stabilize the uterus for CCT	126	92.6
Waits for a strong uterine contraction	79	58.1
Doesn't not wait for a gush of blood	105	77.2
Applies controlled traction (CCT)	121	89%
Pulls the cord gently, firmly, and uniformly downward	108	79.4
Supporting the placenta with both hands	124	91.2
Extracts the membranes gently with lateral movements	112	82.4
Immediately massages the uterine fundus	117	86
Palpates the uterus every 15 minutes	82	60.3
Ensures that the uterus does not relax after stopping uterine Massage	101	74.3
Checks to see if the tissues are complete	119	87.5
Placenta is whole and intact	115	84.6
Examines the woman for cervical or vaginal tears, or episiotomy	136	100
Estimates blood loss	92	67.6

6. Discussion

Use of AMTSL according to the recommendations of FIGO/ICM was important to prevent maternal mortality and morbidity. Active management of third stage of labour (AMTSL) is a simple and practical intervention to reduce the incidence of PPH (WHO, 2007). Overall, the risk of post-partum haemorrhage was more than 60%

lower with active management of third stage of labour. The findings of this study have provided an insight information on Midwives knowledge, attitude and practice on active management of third stage of labour in the study area. Midwife on AMTSL achieved satisfactory scores from standard questions set for AMTSL and observation checklist. In this study about, 112 (82.4%) of midwives stated the definition of postpartum hemorrhage. This finding shows that most of the midwives easily identify PPH and manage before the occurrence of the problem. Eighty six (63.2%) of midwives mentioned the three important components of AMSTL, which was higher than the finding in southwest Nigeria 28.3 % (Olufeni, 2009).

Active management of the third stage of labour consists of interventions designed to facilitate the delivery of the placenta by increasing uterine contractions and to prevent PPH by averting uterine atony (ICM, IFGO, 2004). This study showed that only half, 69 (50.7%) of the study participant mentioned the goal of AMSTL as prevention of PPH which is lower than the finding in Tanzania 98.8% and Uganda 81.2% (Fatina, 2007, Naamala, 2012). This is might be due to inadequate pre- service and lack of in service training in the area.

Administration of intramuscular Oxytocin at the presentation of anterior shoulder of the fetus is recommended by FIGO/ICMI, 2003. This study showed that about 121 (89%) of midwives had awareness on Oxytocin intramuscular injection as the first line drug for management of PPH. This finding is lower than the finding in Tanzania 100 % (Fatina, 2007). This poor level of knowledge might be due to they had not attended any course or workshop on AMTSL at the work place. Fifty six (41.2%) of midwives knew how to examine the mother for vaginal blood flow within first hour after delivery. This finding shows that more than half of midwives didn't examine the mother for vaginal blood flow in the first hour after delivery.

In this study midwives attitudes towards AMSTL was positive, 133 (97.8%) stated that AMTSL should be used and advantageous to all laboring mothers to prevent PPH this finding is higher than the other studies done in Uganda 66.7% (Naamala, 2012).

This study identified that only 34 (25%) Midwives knew Oxytocin provision to the laboring women at the presentation of anterior shoulder and 54 (39.7%) of them knew early cord clamping before pulsation stops. This might be due to poor or absence of in service training regarding AMSTL. Only 8 (5.9%) of midwives had administered oxytocin after delivery of the placenta. This finding was lower than the finding in Egypt (65%) (Cherina, 2004).

However, standard AMTSL practice consists of about 18 steps that a midwife has to follow when conducting this intervention to a woman during third stage of labour. Seventy two (52.9%) of these steps were not completed by most of the midwives that made majority to score low in the skills. Compared to knowledge that most midwives achieve satisfactory scores, skills performance scores were mainly affected by incorrectly or incompletely done procedures with the reason of forgetting updates, and or procedures which were not done at all during AMTSL intervention with major reason of forgetting the steps.

In this study active management of third stage was correctly done by 64 (47%) of midwives to be observed which was higher than the finding in Egypt 15 % (Olufeni, 2009). In this study administration of the Oxytocin was correctly done by 106 (77.9%) midwives immediately after the delivery of the baby with in the first minute. The possibility of second baby was not ruled out in 24 (17.7%) of midwives before the administration of Oxytocin 10 units of IM. Controlled cord traction was applied in 121 (89%) midwives, of this, 57 (41.9%) were applied without confirming strong uterine contractions. This finding was higher than the finding in Nepal (Meera, 2006).

Only 92 (67.6%) of midwives estimated blood loss after delivery and 101 (74.3%) of midwives ensured that the uterus did not relax after stopping uterine massage. To improve the standard of active management of third stage of labour still needed training.

The World Health Organization recommends that maternity care providers receive refresher training or updates in midwifery every three to five years. Although training on AMTSL has evidenced to improve midwives awareness and practice but the observed AMTSL knowledge and skills level among the providers reflect weakness in training programs.

7. Conclusion

In this study midwives level of knowledge on AMTSL was low in Addis Ababa health centers and the main reason in this study included lack of in service training. To reduce or avoid these problems midwives who work in health center should attend training on AMSTL. Midwives attitude towards AMSTL was positive and this will help to use AMSTL for all laboring mother to prevent maternal morbidity and mortality due to PPH and to meet MDG 5. In view of the above results AMTSL is poorly practiced by midwives of Addis Ababa health centers and it needs undue attention to change and increase the practice. Standard AMTSL practice steps were not completed by most of the midwives that made majority to score low in the skills. Skill performance scores were mainly affected by incorrectly or not done procedures with the reason of forgetting the steps of AMSTL.

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Authors' contributions

AH, TL, RY, TS carried out the research from conception to the write up of the final draft of the article. All authors read and approved the final manuscript.

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Competing interests

The authors declare that they have no competing interests

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