

**ASSESSMENT OF KNOWLEDGE AND PRACTICE OF
OBSTETRIC CARE PROVIDERS TOWARD ACTIVE
MANAGEMENT OF THIRD STAGE OF LABOR AT PUBLIC
HEALTH CENTERS IN THE TOWNS OF FINFINE AREA
SPECIAL ZONE OF OROMIA REGIONAL STATE, ETHIOPIA**



**ARESEARCH THESIS SUBMITTED TO THE DEPARTMENT
OF EMERGENCY MEDICINE IN PARTIAL FULFILLMENT OF
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CARE**

ADDIS ABABA UNIVERSITY, ETHIOPIA

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ACRONYM AND ABBREVIATIONS

AMTSL	Active Management of third stage of labour
BEMOC	Basic Emergency Obstetrics Care
CCT	Controlled Cord Traction
FIGO	Federation International of Gynecology and Obstetrics
ICM	International Confederation of Midwives
IM	Intramuscular
IU	International Unit
IV	Intravenous
PPH	Postpartum hemorrhage
REC	Research Ethics Committee
SBA	Skilled Birth Attendant
SPSS	Statistical Package for social Science
WHO	World Health Organizations

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ABSTRACT

Introduction: Postpartum hemorrhage is the most common leading cause of maternal mortality worldwide and most of the death is in developing countries including Ethiopia. Globally, it is responsible for more than 25% of all maternal death and this proportion is higher in sub-Saharan Africa. Postpartum hemorrhage can be minimized and prevented by application of a protocol known as active management of third stage of labor. Proportion of deliveries assisted by a skilled birth attendant and antenatal care coverage have been used as a key proxy indicator for monitoring global progress towards decreasing maternal mortality. However, these two indicators may not reflect the content or quality of the care provider.

Objective; The objective of this study is to assess Knowledge and practice of obstetric care providers toward active management of third stage of labor (AMTSL) at health centers of Finfine area special zone of Oromia regional state, Ethiopia from April to May 2017

Methods and materials; Institutional based descriptive cross sectional study design was implemented. Whole health centers in selected towns were included to the study with 118 obstetric care providers from all health centers. Interviewer-administered structure questionnaire and observation by using observational check list was employed. Data was entered using Epidata V.3.1 and exported to SPSS version 21.0 for statistical analyses. Descriptive statistical analysis was used to present data while logistic regression were used to determine association of independent variables with practice of obstetrics care providers.

Results: Adequate knowledge on AMTSL was achieved by 40.7% of obstetrics care providers while good practice on AMTSL was achieved by 18.6% of them. Sex, pre or in service training, access to reading materials and knowledge levels of obstetrics care providers were among factors that affects their practice on AMTSL.

Conclusions and recommendations: The overall knowledge and practice of obstetric care providers on AMTSL in the present study were not satisfactory. In views of the findings of this study, it implies that the practice of obstetric care providers was much lower than their knowledge of AMTSL. The investigator calls for immediate interventions.

Key Word; Knowledge, practice, Active management of third stage of labor, postpartum hemorrhage, Ethiopia

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1. INTRODUCTION

1.1. Background

Parturition or labour is defined as a physiological process during which the products of conception that is; the fetus, membranes, umbilical cord and placenta, are expelled outside of the uterus. It is achieved with changes in the biochemical connective tissue and with gradual effacement and dilatation of the uterine cervix as a result of adequate frequency, intensity, and duration of rhythmic uterine contractions(1).

The labour or parturition has four stages. Among stages of labour the third stage, the one begins with birth of the newborn and ends with delivery of the placenta, is greatest risk for postpartum hemorrhage due to probability of uterus may not contract well after birth. When the uterus doesn't contract as intended after birth, it is called uterine atony which is the major cause of Postpartum hemorrhage (PPH)(2).

PPH is the most common leading cause of maternal mortality worldwide and most of the death is in developing countries including Ethiopia(3)(4). Globally, it is responsible for more than 25% of all maternal death and this proportion is higher in sub-Saharan Africa (5).

PPH can be minimized and prevented by application of a protocol known as active management of third stage of labor (AMTSL) (6)(7). AMTSL reduce occurrence of severe PPH by 60-70% when compared to expectant management (6)(8). It has been demonstrated to be a safe, cost-effective, evidence-based life-saving skill that effectively reduces postpartum blood loss and can be easily learned by a SBA (8)

Third stage of labour is managed by two protocols; expectant (physiological) and active management. Physiological management involves use of gravity to assist delivery of the placenta in a timely manner with maternal effort without administration of a prophylactic uterotonic, without clamping and cutting of the cord until the placenta is delivered while Active management involves giving a prophylactic uterotonic, cord clamping and controlled cord traction(7)(9).

AMTSL involves three main components: First is, the use of uterotonic agents within one minute following the birth of the baby. Uterotonics (such as oxytocin and ergometrine) and prostaglandins or its analogue such as misoprostol have strong uterotonic properties and have long been used to treat uterine atony and reduce the amount of blood lost during childbirth and placental delivery. The use of these uterotonic drugs immediately after the delivery of the newborn is one of the most important interventions used to prevent PPH (2).

Second is delivery of placenta with Controlled Cord Traction (CCT) which involves the traction on the cord during a contraction combined with counter-traction upward on the uterus with the provider's hand placed immediately above the symphysis pubis. CCT facilitates expulsion of the placenta once it has been separated from the uterine wall.

And the third component is the massage of the uterus after delivery of the placenta, which is an action used after the delivery of the placenta in which the provider or the woman places one hand on the fundus of the uterus through the woman's abdomen to rub or knead the uterus until it is firm(26).

1.2. Statement of the problem

Annually, approximately 287,000 women die as a consequence of complications related to pregnancy and childbirth which can be preventable. All most all of these deaths are recorded in low and middle income countries with largest burden in sub-Saharan Africa and South Asia (11). One fifth of worldwide maternal death as a result of hemorrhage is happened in Sub-Saharan Africa(10)

Maternal mortality attributable to hemorrhage is tremendously decreasing over the last two decades, despite PPH continues to be the leading cause of maternal death(4). PPH is being largely preventable. Notwithstanding, it is responsible for 33.9% of death in Africa(12). The problem does not appear to be a lack of selective interventions but rather the failure to implement such interventions properly in all settings(11).

Proportion of deliveries assisted by a skilled birth attendant (SBA) is now being used as a key proxy indicator for monitoring global progress towards decreasing maternal mortality, though there is no evidence for causal relationship between skilled attendance and maternal

survival(13)(14). Similarly, antenatal care coverage has been used as a key indicator(14). However, these two indicators may not reflect the content or quality of the care provided (15).

In Ethiopia, as in many developing countries, postpartum hemorrhage is the leading cause of maternal mortality. Though it is difficult to count the percentage of maternal mortality as a result of hemorrhage in Ethiopia, one study suggests that; PPH responsible for 25-30% of maternal mortality in the country (16).

Some studies in Ethiopia shows as there is a gap in knowledge and practice of skilled birth attendant on AMTSL. For instance, according to study conducted in Addis Ababa; Only 51.5% of the study participant achieved satisfactory level for knowledge question on AMSTL and about 47% of the participant achieved good in skills (17). Similarly, according to study conducted in Southern part of Ethiopia, knowledge and practice of obstetrics care providers towards of active third stage management of labour was very low; only 33.3 % had knowledge on three the components of AMTSL and 15.7 % of the study subjects was correctly practice AMSTL according to protocol(18).

To the best of investigator knowledge there is no published research conducted in Finfinne area special zone of Oromia regional state on knowledge and practice of obstetric care provider toward AMTSL. So this study is aimed to assess knowledge and practice of obstetric care provider on AMTSL in the zone.

1.3. Significance of the Study

The finding from this study has the following advantages. It will help to understand the knowledge and practice of obstetric care providers toward active management of third stage of labour in the study area and associated factors which might be essential for establishment of prevention strategies as well as treatment protocols for postpartum hemorrhage. Moreover, it will help to minimize maternal mortality secondary to hemorrhage. It can be used as reference data for the policy makers to make evidence based decision. Moreover, it will be used as base line data for a researches interested to conduct further studies in the same area.

Hence, this study was conducted to assess knowledge and practice of obstetric care provider on AMTSL in the zone.

2. LITERATURE REVIEW

An observational study was conducted to document the use of active management of the third stage of labour for preventing postpartum hemorrhage and to explore factors associated with such use in seven developing countries; Benin, El Salvador, Ethiopia, Honduras, Indonesia, Nicaragua and the United Republic of Tanzania. First, a sample of health facilities with one to three deliveries per day was chosen. Then all deliveries in the facility were observed for two 8-hour periods over 2 days to select a sample of deliveries within that facility. 200 facility-based vaginal deliveries were selected by a two-stage, probability sampling factor. The study findings showed that correct use of active management of the third stage of labour was found in only 0.5% to 32% of observed deliveries due to multiple deficiencies in practice. Developing countries have not targeted decreasing postpartum hemorrhage as an achievable goal; there is little use of active management of the third stage of labour(19).

According to study on active management of third stage of labour in Nepal, from 325 were randomly selected laboring women; loading of the oxytocin was correctly done immediately when the women were seen to bear down at second stage in 99.5% of the cases. In 5.8% of cases, the oxytocin doses were different from the standard 10 units. The possibility of second baby presence was not ruled out in 81.9% of the cases prior to the administration oxytocin. Moreover, the study revealed that controlled cord traction was applied in 56% of the cases without confirming uterine contractions. The study concluded that improvement in the standard of active management of third stage of labour is still needed in the training providing institutions (20).

As study conducted in six countries of sub-Saharan Africa (Ethiopia, Kenya, Madagascar, Mozambique, Rwanda and Tanzania) shows; from a total of 2317 women observed during child birth, 94% of the women observed were given uterotonics (2043 women received oxytocin while 130 of them received another uterotonics). From the women received uterotonics, 1640 (76%) received it within three minutes of the birth. About 377 (36%) of 1037 investigated obstetric care providers had received relevant training in the previous three years on AMTSL(21).

A cross sectional survey on 361 obstetric care providers toward their knowledge on AMTSL in Nigeria shows that; about 90.6% of the respondents have awareness on active management of labour as an obstetric intervention while 28.3% of the respondents correctly identify component

of AMTSL. The study concluded that active management of labour was a familiar but poorly understood intervention among obstetric care providers in this region (22)

A descriptive study was done to assess the normal labor practices in an Egyptian teaching hospital, where postpartum hemorrhage is the leading cause of maternal mortality and 176 normal births were directly observed. Accordingly, third-stage active management was correctly done for 15% of women observed. Most common deviations for the remaining 85% were, giving uterotonic drugs after placental delivery (65%) and without cord traction (49%). The preventive role actively managing the third stage can provide against postpartum hemorrhage was lost in the majority of the deliveries observed. Obstacles to adopting protocols shown to reduce hemorrhage should be explored, given the contribution of postpartum hemorrhage to maternal death in Egypt (23)

According to study conducted in Tanzania; from observed sample of 251 facility based vaginal deliveries for active management of third stage of labour, correct practice of active management of third stage of labour was observed in 7% of the deliveries. The study concluded that; the care providers have low knowledge and practice toward AMSTL (24).

A descriptive study in public hospitals of Zambia shows that; From a total of 82 observed deliveries active management of third stage of labour is correctly applied in only 20 (40.4%) of the cases by midwives(25).

A cross sectional study conducted in Hawasa city, Southern Ethiopia on knowledge and practice of obstetrics care provider revealed that; 33.3% of obstetric care provider had knowledgeable about active management third stage of labour while 16.7% obstetric care providers applied active management of third stage of labour correctly during management of third stage of labour. About 65.3% of the obstetric care providers examined abdomen to rule out the presence of another baby prior to administration of uterotonic drugs and 31.9% of the administer uterotonics within one minute of fetal delivery. Obstetric care providers who took pre/in-service training manage third stage of labour using AMTSL correctly by 7.4 times than those who didn't take training(18).

Another study in Ethiopia also showed that; from a total 136 study participant, 77.9% had given oxytocin within the first minute, 89% used controlled cord traction, and 86% performed uterine

massage within the first minute after delivery. Moreover, only 51.5% of midwives achieved satisfactory standard scores in knowledge question and 47% had achieved good in skills(17).

3. OBJECTIVES

3.1. General Objective

The objective of this study was to assess Knowledge and practice of obstetric care providers toward active management of third stage of labour at health centers of Finfine area special zone of Oromia regional state, Ethiopia from April to May 2017

3.2. Specific Objectives

- To assess knowledge of obstetrics care providers toward active management of third stage of labour at health centers of Finfine area special zone of Oromia regional state , Ethiopia from April to May 2017
- To assess practice of obstetrics care providers toward active management of third stage of labour at health centers of Finfine area special zone of Oromia regional state , Ethiopia from April to May 2017
- To assess factors that affect knowledge and practice of obstetrics care providers toward active management of third stage of labour at health centers of Finfine area special zone of Oromia regional state , Ethiopia from April to May 2017

4. METHODS AND MATERIALS

4.1. Study area and study period

This study was conducted in Finfine area special zone of Oromia regional state. The zone is one of the twenty zones in Oromia regional state of Ethiopia. It is located at central part of Ethiopia and surrounds Addis Ababa, the capital city of Ethiopia in all direction. The towns in the zone are; Sebeta, Burayu, Gelan, Legatafo and Sululta. These towns have a cumulative of nine health centers. The study was conducted in all of the health centers in the selected towns of the zone. The study was conducted from April to May 2017.

4.2. Study design

Institutional based descriptive cross sectional study design was implemented to assess Knowledge and practice of obstetric care providers toward active management of third stage of labour at health centers of Finfine area special zone of Oromia regional state, Ethiopia

4.3. Source and study population

The source populations were all skilled birth attendants working in delivery room of Finfine area special zone of Oromia regional state, Ethiopia

The study populations were all skilled birth attendants working in delivery room of selected towns in Finfine area special zone of Oromia regional state during data collection period

4.4. Inclusion and exclusion criteria

4.4.1. Inclusion criteria

Health care professionals who were working in delivery unit and available in the study area during data collection period were included to the study

4.4.2. Exclusion Criteria

Health care professionals who has been working in delivery unit and not available in the study area during data collection period as a result of annual leave, illness or other issues will be excluded from the study. Moreover, a study subject who had no interest to participate in the study was excluded.

4.5. Sample size determination and sampling procedure

Even though the health care system and organization is the same for all health centers, health centers in the zone are geographically classified as urban and rural health centers. The investigator purposively selected urban health centers for this study due to their accessibilities and cost effectiveness. Entire health centers in selected towns were included to the study with all obstetric care providers in respective health centers. So, no need to calculate sample size and no need to use sampling techniques.

4.6. Study Variable

4.6.1. Dependent variable

- ❖ Knowledge

- ❖ Practice

4.6.2. Independent variable

- ❖ Socio demographic variables
 - Age
 - Sex
 - Marital status
 - Educational status
 - Qualification
 - Religion
 - Years of experience
 - Training on AMTSL

4.7. Data collection tools

Interviewer-administered structure questionnaire and observation by using observational check list were employed. The questionnaires contains open as well as closed ended questions which covers socio demographic information, knowledge and practice of obstetric care providers on active management of third stage of labour. It was prepared in English.

4.8. Data Collection Procedure

The standardized questionnaire were employed to obtain information on socio-demographic and professional characteristics of the delivery case team members; knowledge and practice of Active management of third stage labour, its benefit and their regular use of it in labour management. All obstetrics care provider under the delivery case team of health centers of selected towns of the zone, who fulfill the inclusion criteria were interviewed. Face-to-face interview were conducted through nine data collectors with qualification of midwifery's and three supervisors was needed. The checklists were filled by data collectors in order to assess the practice of obstetric care providers.

4.9. Data quality assurances

To keep the data quality, standard questionnaire was adopted from ICM and FIGO guideline and modified according to the study setting protocol. Before data collection go ahead training was given for data collectors and supervisors on study materials and instruction on the study tools for one day. Then, the questionnaires was pretested on two health centers to assess for their clarity, understandability, flow and consistency of the questions prior to data collection on obstetrics care provider outside the study area. Moreover, daily the qualities of data were checked by supervisors.

4.10. Data Analysis

To ensure the quality of data, all filled questionnaires were checked incompleteness and inconsistency. Data were entered using SPSS version 21.0 for statistical analysis. Descriptive statistical analyses were used to compute independent and dependent variables. Then the data were summarized and described using descriptive statistics such as, percentage, means, and tables, Logistic regression was used to assess determinants for practice of obstetric care provider.

4.11. Ethical consideration

Ethical clearance was secured from Research Ethics Committee (REC) of the School of medicine, department of emergency medicine as mandated by Addis Ababa University. Letter of permission were obtained from Oromia Regional Health Bureau, zonal health, district officials and respective health centers.

Informed consents were obtained from all obstetric care providers prior to proceeding data collection from them. This was done with a clear description of the objectives of the study and of its procedures and after ascertaining that this information has been adequately understood. Confidentiality of the information obtained from each participant was maintained.

4.12. Dissemination plan

The results of this study will be presented to Addis Ababa University, Faculty of Medicine department of emergency medicine and documents will be disseminated to all responsible bodies in the study area. In addition, it will be submitted to Addis Ababa University health science library. Further efforts will be made to publish the findings on national or international journal.

4.13. Operational definitions of Active management of third stage of labour

The third stage of labor is the time from the delivery of the fetus until delivery of the maternal placenta. Active management of third stage of labour (AMTSL) involves interventions to assist in expulsion of the Placenta with the intention to prevent or decrease blood loss. Which has the following components (based on FIGO/ICM guidelines): Administration of 10 IU oxytocin intramuscularly immediately within 1 min of delivery of fetus, apply Controlled cord traction and uterine massage after delivery of the placenta(26).

Knowledge: The level of knowledge was determined on a knowledge index.

Adequate knowledge; is those who knew all of the eight questions prepared to assess knowledge of obstetric care providers on AMTSL

Not adequate: Those who missed at least one of the eight questions prepared to assess knowledge of obstetric care providers on AMTSL

Practice: The overt behavior, habit or custom that people does, or carry out in his/her daily life. In this study it was measured based on series of 12 steps checklist prepared from FIGO/ICM guideline on AMTSL(26).

Good practice: Those who followed 12 steps of the checklist correctly while conducting AMTSL

Poor practice: Those who didn't follow at least one steps of the checklist correctly.

4.14. Limitation of the study

This study has several limitations. First, it used small sample size which has no statistical power to draw conclusion. In addition, the study was limited to Finfinne area special zone of Oromia regional state. As a consequence of this selection bias, it is difficult to generalize the finding to region or national level. However, the data was collected by interviewee and observation. This minimized impact of limitation to the study.

5. RESULT

This section describes socio-demographic characteristics, and knowledge and practice of obstetrics care providers toward Active Management of Third Stage of labour (AMTSL) in study area.

A total of 118 obstetric care providers in selected public health centers were interviewed concerning their knowledge and observed regarding their practice toward AMTSL. The mean age of respondents was 29.8 ± 6.8 . Majority of the obstetrics care providers were female, 89(75.4%).

Eighty-five respondents were 85(72%) were married status. Christian orthodox 57(48.3%) were the dominant religion and followed by Protestant which accounted 45(38.1%).

With regard to their educational background majority of obstetrics care providers were diploma midwifery 39(33.1%) followed by diploma in nursing 33(28%). Those with BSc midwifery were 8(6.8%) of the respondents. Majority of respondents 47(39.8%) have 5 to 9 years of experience in obstetric care.

Concerning pre or in-service training 55(46.6%) respondents received training on AMTSL. Twenty-six of them (47.3%) received training within the last two years while 29(52.7%) of them took it at least two years prior to this survey.

Forty-two respondents (35.6%) acquired knowledge and skills of AMTSL from work place by reading and observation from staff while 39 (33%) and 37(31.4) of obstetrics care providers acquired knowledge and practice of AMTSL from training or workshop and from collage or universities respectively.

Table 1 also shows that 54 (45.8%) of respondents had access to reading materials while 64(54.2%) didn't have access to reading materials.

Table 1 Basic characteristics of obstetrics care providers in Oromia special zone surrounding Finfine, Ethiopia, April, 2017

Variable	Categories	Frequency	Percentage
Age	≤25	28	23.8
	26 to 35	76	64.4
	>35	14	11.9
Sex	Male	29	24.6
	Female	89	75.4
Marital status	Married	85	72
	Unmarried	33	28
Religion	Orthodox	57	48.3
	Protestant	45	38.1
	Muslim	12	10.2
	Others*	4	3.4
Educational status	Diploma in Midwifery	39	33.1
	Diploma in Nursing	33	28
	BSc in Nursing	20	16.9
	BSc in Public health officer	18	15.3
	BSc in Midwifery	8	6.8
Experience in obstetric care	≤4years	42	35.6
	5-9years	47	39.8
	≥10years	29	24.6
Received pre/in service training on AMSTL	YES	55	46.6
	NO	63	53.4
Duration since the last training	≤2	26	47.3
	>2	29	52.7
Place they acquired knowledge and skill of AMTSL	College or University	37	31.4
	Training place	39	33
	Workplace by reading and observation	42	35.6
Have access to reading material prepared on AMTSL	YES	54	45.8
	NO	64	54.2

* Catholic, Wakefata

Knowledge of obstetric care provider on AMTSL

Concerning knowledge of obstetrics care providers on AMTSL eight question were asked based on FIGO/ICM joint definition of AMTSL(26).

Accordingly, almost all 116(98.3%) obstetrics care providers in this study knew all basic components of AMTSL. Fifty-three (44.9%) respondents said that their immediate role after delivery of fetus were checking for presence of another fetus while 65(55.1%) responded their immediate role as uterotonics administration.

Majority 72 (61%) respondents knew common uterotonics such as oxytocin, ergometrine and misoprostol. However, entire respondents knew oxytocin and almost all 116(98.3%) of them correctly answered dosage and route of oxytocin administration. Sixty two (52.2%) respondents reported that they administer uterotonics within the first one minute post-delivery of the baby. Lastly, majority of respondents 94(79.7%) reported a application of uterine massage every 15 minutes for the first 2 hours of post-partum phases.

Table 2 Distributions of obstetrics care providers Knowledge on AMTSL, April to May 2017

Variables	Categories	Frequency	Percentage
Know all essential component of AMTSL	Yes	116	98.3
	NO	2	1.7
Know recommended immediate role of obstetric care providers after delivery of fetus	YES	53	44.9
	NO	65	55.1
Know common uterotonics	YES	72	61
	NO	46	39
Know recommended dose of oxytocin	YES	116	98.3
	NO	2	1.7
Know recommended route of oxytocin	YES	116	98.3
	NO	2	1.7
Know time to administer uterotonics	YES	62	52.5
	NO	56	47.5
Know frequency to perform uterine massage over the first two hour	YES	94	79.7
	NO	24	20.3
Overall knowledge toward AMTSL	Adequate	48	40.7
	Inadequate	70	59.3

Practice of obstetric care providers toward AMSTSL

Majority of obstetrics care providers palpate mothers abdomen to rule out presence of another fetus prior to administration of uterotonics, 99(83.9%). Entire laboring women received oxytocin. In addition, right dosage of oxytocin were given for 106(89.8%) of women while almost all 117(99.2%) laboring women received oxytocin through recommended route of administration. However, oxytocin were administered within the first minutes of delivery of fetus in 92(78%) cases while in 26(22%) cases oxytocin were administered within 2 to 3 minutes of delivery.

Controlled cord traction was performed as recommended protocol in 76(64.4%) observed deliveries. Respecting placenta delivery it was supported by both hands while delivery in most of a cases 106(89.8%) and assessed for completeness in 103(87.3%) observed deliveries.

Uterine massage were performed every fifteen minutes for the first two hours after delivery in 110(93.2%) observed deliveries. Obstetric care providers trained 104(88.1%) mother on how to massage uterus post-delivery.

Table 3 Distributions of obstetric care providers Practice toward AMTSL, Surrounding Finfine special zone, Oromia, Ethiopia, April to May 2017

Variable	Categories	Frequency	Percentage
Checked presence of another fetus	YES	99	83.9
	NO	8	6.8
Oxytocin given	YES	118	100
	NO	0	
Right dosage of Oxytocin Given	YES	106	89.8
	NO	12	10.2
Right route for Oxytocin	YES	117	99.2
	NO	1	0.8
Time at which oxytocin given after delivery of fetus in minutes	Within 1 minutes	67	56.8
	2 to 3	51	43.2
Placenta delivered before uterotonics administration	YES	7	5.9
	NO	111	94.1
CCT performed as protocol	YES	76	64.4
	NO	42	35.6
Placenta was supported by both hand	YES	106	89.8
	NO	12	10.2
Placenta assessed for completeness	YES	103	87.3
	NO	6	5.1
Uterine massage performed every 15 minutes for the first two hours	YES	110	93.2
	NO	8	6.8
Mother informed and trained on how to massage uterus	YES	104	88.1
	NO	14	11.9
Over all practice to AMTSL	Good	22	18.6
	Poor	96	81.4

Predictors of obstetrics care providers practice on AMTSL

Age of the patients obstetric care providers were associated with their practice on AMTSL on bivariate analysis with crude odds ratio of [0.27(95% CI, 0.08 to 0.98)]. However, the association becomes diminished when other confounders controlled, [AOR 0.26(95% CI, 0.06 to 1.18)].

Sex of health care providers predicts their practice toward AMTSL both in bivariate and multivariate analysis. Male obstetric care providers were 3.7 more likely to be good in practicing AMTSL than female obstetric care providers, [AOR (3.7(95% CI, 1.23 to 11.02)].

Training on AMTSL labor was directly proportional with practice of obstetric care providers toward AMTSL both in bivariate and multivariate analyses. Those taken training were 3.4 times more likely practice AMTSL appropriately than those without training on AMTSL, [AOR 3.4(95% CI, 1.12 to 10.27)].

Access to reading materials predicts practice status of obstetric care providers toward AMTSL on bivariate analysis but not on multivariate with [COR 3.1(95%CI, 1.17 to 8.39)] and [AOR 1.9(95% CI, 0.66 to 5.67)] respectively.

Furthermore, knowledge of obstetrics care providers about AMTSL determines their practice toward AMTSL. Those with adequate knowledge of AMTSL were 3 times more likely to be good in practice of AMTSL than those with inadequate knowledge of AMSL, [AOR 3(95% CI, 1.13 to 8.10)].

Table 4 Predictors of obstetric care providers practice toward AMTSL, surrounding Finfine special zone of Oromia regional State, Ethiopia, March-May, 2017.

Variables	Categories	Practice status		COR(95% CI)	AOR(95% CI)
		Good	Poor		
Age	≤25	7	21	0.6(0.15-2.40)	0.76(0.15-3.8)
	26 to 35	10	66	0.27(0.08-0.98)*	0.26(0.06-1.18)
	>35	5	9	1	1
Sex	Male	12	17	5.6(2.07-15.00)**	3.7(1.23-11.02)*
	Female	10	79	1	1
Received pre/in service training on AMSTL	Yes	15	40	3(1.12-8.03)*	3.4(1.12-10.27)*
	No	7	56	1	1
Have access to reading material prepared on AMTSL	Yes	15	39	3.1(1.17-8.39)*	1.9(0.66-5.67)
	No	7	57	1	1
Knowledge status of AMTSL	Adequate	14	34	3.2(1.22-8.37)*	3(1.13-8.10)*
	Inadequate	8	62	1	1

Note: *P<0.05, **P<0.01

6. DISCUSSIONS

This chapter discusses the main findings of the study with other literatures. It focused on the objective of the study and compared similarities and differences of the present study with previous studies. It provided possible justification when significance difference existed.

Concerning pre or in service training on AMTSL 46.6% of respondents reported as they received training. This result was much higher than previous studies in Ethiopia. The study Conducted in Hawasa reported 33.3% while the other study reported 38%(18)(21).

All most all (98.3%) respondents knew the three components of AMTSL which includes; administering uterotonic drugs, applying control cord traction and uterine massage. In contrast, the present findings were much higher than the results of previous studies in Ethiopia(18)(17). According to previous study from Southern Ethiopia knowledge of obstetrics care providers on the three basic components of AMTSL were 33.3%(18). The study conducted in Addis Ababa reported 63.2% (17).The difference could be due to difference in coverage of pre or in service training on AMTSL.

Concerning dosage and route of oxytocin administration all most all respondents (98.3%) responded the right dosage and route which were 10 IU through intramuscular administration. This report was nearly similar to the study in Tanzania which reported 100% (27)

The overall knowledge of obstetrics care providers in present study were 40.7%. This finding were higher than the report from Nigeria and Tanzania which were 28% and 9% respectively (22)(24). On the other hand the present finding was lower than another study from Nigeria and study from Nicaragua. They reported 66.7% and 48.2% as knowledgeable respectively(28)(29).

Majority of obstetrics care providers checked presence of another fetus by palpating abdomen prior to administering oxytocin, 99(83.9%). This finding was in agreement with study conducted in Addis Ababa, Ethiopia which reported 82.4%. However, the present finding was much higher than the result of study conducted in Southern Ethiopia which reported 65.3% (n= 47). Knowledge difference and negligence of obstetric care providers might be the reason.

Oxytocin was given for entire laboring mother in present study. In addition, in majority of observed delivery (56%) oxytocin were given within the first minutes of delivery. This finding

was nearly similar with survey conducted in six developing country in Africa which reported 52% of laboring mother received oxytocin within the first minutes of fetus delivery (21). Contrasting the present finding, study from Hawasa, Ethiopia reported that oxytocin were administered within one minutes of fetus delivery in 31.9% of observed deliveries (18). The difference could be due to difference in knowledge level toward AMTSL in both setting.

Furthermore, right dose of oxytocin were given in 89.8% of observed delivery while it was administered intramuscularly in 117(99.3%) observed delivery. This finding was slightly higher than the result of study conducted in Southern Ethiopia which reported 91.7% for intramuscular administration of oxytocin (18).

Controlled cord traction was performed as protocol in 64.4% of observed deliveries. The protocol includes placing hand above symphysis pubis and applies counter pressure, gentle and downward pull of the cord during contraction and discontinuation of traction if the placenta does not descend after 30 to 40 seconds(26). This finding was consistent with the report of study conducted in Nigeria(28).

Placenta was assessed for completeness in 103(87.3%) observed deliveries. This finding was in agreement with previous study conducted in Ethiopia (17). However, it was much higher than the result of study conducted Southern Ethiopia which reported 8.7%(18)

The investigator found out that 93.2% received immediate uterine massage in the first two hours of post-partum period. This finding was higher than the result study in Uganda found, 69.5%. The study in Uganda involved nationwide survey and the sample size was large, the could be the reason for difference in finding.

In this study the overall good practice rate of obstetrics care providers were 18.6%. This finding was slightly higher than the finding from Southern Ethiopia which reported 15.7% and much higher than the findings from Nigeria. However, it was much lower than the reported finding from Addis Ababa which was 47% (17). The contradiction with the later study could be due to difference in tools used to assess practice of obstetrics care providers on AMTSL. The present study used FIGO/ICM guideline definition for AMTSL alone to assess practice while study in Addis Ababa added some checklist used assess practice to prevent PPH. This resulted in difference operational definition toward practice of AMTSL.

Concerning factors associated with practice of obstetric care providers; the present study found statistically significant association between sex of respondents and their practice on AMTSL. Male obstetric care providers were nearly 4 times more likely practice in a good way than females, [AOR 3.7(95% CI, 1.23 -11.02)]. Similarly, study conducted in Ethiopia reported practice difference between male and female (18). This could be due to females more engaged in home and social activities than males which might have impact to update their knowledge's.

Obstetric care providers received pre or in service training were 3.4 times more likely good in practice of AMTSL than those didn't received training. This finding was in agreement with study in Ethiopia and Tanzania(18)(24).

Respondents who have access to reading materials prepared on AMTSL were 3 times more likely practice AMTSL in bivariate analyses, [COR 3.1(95% CI, 1.17 -8.39)]. The effect of availability of reading materials on practice of obstetric care providers were highly supported according to study in Uganda (19)

Adequate knowledge levels of obstetric care providers affect their practice on AMTSL in the present study. This was explained in previous studies(17)(29)(30)(31).

7. CONCLUSIONS AND RECOMMENDATIONS

Based on the main finding of the study the investigators made the following conclusions and forwarded recommendations for health care providers, policy makers and for researchers.

7.1. Conclusions

Majority respondents knew common uterotonics with their dosage and route of administration.

More than three-fourth of respondents' appropriately responded recommended frequency and duration of uterine massage during post-partum period.

In views of the findings of this study, it implies that the practice of obstetric care providers were not congruent with their knowledge of AMTSL.

The overall knowledge and practice of obstetric care providers on AMTSL in the present study were not satisfactory.

Male obstetric care providers practice AMSTL in good way than female obstetrics care providers

Having AMTSL training pre or in-service has shown to increase competence level to practice of obstetrics care providers on AMTSL.

Access to reading materials affects AMTSL practices of obstetric care providers.

Adequate Knowledge levels of obstetric care providers on AMSTL have positive impact on their practice.

7.2. Recommendations

The following recommendations are made based on the results of this study and the investigator calls for immediate interventions

For o bstetric ca re providers; obs tetric care p roviders should upda te t hemselves pe riodically. They have to improve the following practices: administration of the uterotonic drug within one minute of the delivery of the baby, correct dose of the uterotonic drug, application of controlled cord traction, and immediate massage of uterus after delivery of the placenta.

For policy makers, administration officials and non-governmental organizations; a specific plan for increased provision of pre-service and in-service training that includes AMTSL for the whole country should be developed and implemented. Training should be given for those didn't take it. In addition, periodic assessment on obstetrics knowledge and practice of AMTSLs should be existed. The government and other concerning bodies should facilitate access through obstetric care providers update their knowledge.

For researchers interested to conduct further studies; the present study used small sample size and cross sectional study. So, the investigator recommends you to use large sample size and more strong design to determine factors associated with knowledge and practice of obstetric care providers on AMTSL.

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ANNEXES

Annex 1: Questionnaire

Addis Ababa University

College of Health Sciences

Department of Emergency Medicine

Introduction

Dear respondent! The purpose of this questionnaire is to collect data about knowledge and practice toward active management of third stage of labor (AMTSL) in this health center. Questions included in this questionnaire enable researcher to get information pertaining to the level of knowledge and practices of obstetric care providers toward AMTSL. Information you give will serve only this stated academic purpose and confidentiality will also be strictly kept. Your genuine response to the questions is very important in achieving goal of the study. Thus, I cordially ask your cooperation in filling this questionnaire honestly.

General instruction: For close ended questions choose the appropriate response that reflect your situation and write the number of your choice in the corresponding provided box. For open ended question, specify the respondent view and write on space provided. Checklist related to practice of obstetric care providers are filled by observations

I agree to participate as a volunteer.

Date

Signature of participant

Part one: Socio demographic data.

1. Age _____
2. Sex: (1=M, 2=F)
3. Marital status; (1=Single, 2=Married, 3=Divorced, 4=Widowed)
4. What is your educational status? (1=Diploma midwifery, 2=Diploma in Nursing, 3=BSc in midwifery, 4=BSC in Nursing, 5=BSc in Public health officer)
5. Religion; (1=Orthodox, 2=Protestant, 3= Muslim, 4=Catholic, 5=others specify_____)
6. How many years of experience you have in attending labour _____

Part two: Information regarding training on AMTSL.

1. Have you ever taken pre/in service training on Active management of third stage of labour? (1=Yes , 2=No)
2. If yes for Q.No.1, how long it is since you took the last training? _____year
3. Where did you get exposure to the knowledge of AMTSL? (1=At midwifery school 2= When observing my colleagues performing it on a laboring woman, 3= At on job training workshop, 4= others (specify)_____)
4. Do you have access to reading material prepared on AMTSL? (1=Yes, 2=NO)
5. If Yes to Q. N. 4, where did you get reference source about AMTSL? (1=Bemonc manual and checklist, 2= WHO guideline, 3= Midwifery books 4=others_____)

Part three: knowledge on Active management of third stage labour

1. Which one of the following is/are the essential components of active management of third stage of labour?
 - A. Uterotonics drug administration
 - B. Application of controlled cord traction
 - C. Performing uterine massage
 - D. All
2. What is your immediate role after delivery of the fetus?
 - A. Check presence of another fetus

- B. Administer uterotonics
 - C. All
3. Which one of the following is/are uterotonics drug?
 - A. Oxytocin
 - B. Ergometrine
 - C. Misoprostol
 - D. All
 4. The recommended dose of oxytocin administration during AMTSL is ;
(1= 5 IU, 2=10 I U, 3=2.5 I U, 4=All)
 5. What is the recommended route of oxytocin administration during AMTSL?
(1= Oral (PO), 2= Intramuscular (IM), 3=Intravenous (IV) 4=All)
 6. When do you administer uterotonics drug?
 - A. After delivery of anterior shoulder of the fetus
 - B. Within a minute of delivery of fetus
 - C. Within three minute of delivery of fetus
 - D. More than three minute of delivery of fetus
 7. How often you perform uterine massage?
 - A. Every 10 minutes for the first two hour after delivery of the fetus
 - B. Every 15 minutes for the first two hour after delivery of the fetus
 - C. Every 30 minutes for the first two hour after delivery of the fetus
 - D. Every hourly for the first two hour after delivery of the fetus

Part four: Observational checklist to assess practice of obstetric care providers on AMTSL

8. Checked presence of another fetus (1=Yes, 2=No)
9. Types of uterotonics drug given (1=Oxytocin, 2= ergometrine, 3= others(specify_____))
10. Route of uterotonics drug given (1=IM, 2=IV)
11. Dose of uterotonics drug_____
12. Time to clamp a cord after delivery
 - A. 1-2 minutes after delivery of the fetus

- B. 3-5 minutes after delivery of the fetus
 - C. More than 5 minutes after delivery of the fetus
13. Placenta delivered before uterotonics given (1=Yes, 2=No)
 14. Waited for sign of placenta separation before application of controlled cord traction (1=Yes, 2=No)
 15. Applies controlled traction according to recommendation (1=Yes, 2=No)
 16. Placenta is supported by both hands (1=Yes, 2=No)
 17. Uterine massage is performed every 15 minute for the first two hours of postpartum time (1=Yes, 2=No)
 18. Placenta and membrane completeness is assessed (1=Yes, 2=No)
 19. Mother informed and trained on how to massage the uterus (1=Yes, 2=No)

Annex 2.

Information Sheet and Informed Voluntary Consent Form for Oromia Regional Health Bureau

Preamble: My name is Dejene Nugussie, MSc student at Addis Ababa University. I need to conduct the study in urban health centres of Finfine area Special Zone. I will conduct the study under Addis Ababa University, college of health sciences for partial fulfilment of Master of Science in Emergency Medicine and Critical Care. The study will have a paramount importance to minimize maternal mortality in the region as well as in the country. So, I kindly request your permission to do the study on obstetric care providers in the urban health centres of the zone.

Study Title:

Knowledge and practice of obstetrics care providers on Active Management of Third Stage of labor at Health Centres in Towns of Finfine Area Special Zone of Oromia Regional State, Ethiopia

Objective – The objective of this study is to assess knowledge and practice of obstetrics care providers on Active Management of Third Stage of labor at Health Centres in Finfine Area Special Zone of Oromia Regional State, Ethiopia

Benefit: The study may have no direct benefit for the participants. But the information generated from the study help the government administrator's to enforce the implementation of the regulation to minimize maternal mortality in the region. Moreover, it is used as baseline data for further investigation. Indeed, it will help the researcher to write up his thesis for partial fulfillment of Master of Science degree. There wouldn't be any direct payment for the health centers or for the participant in case of participating to study.

Harm: The study has no harm to either the health centers or to the participant. The participants do not have any harm by participating to the study or for not participating to the study, except taking few minute from his/her time.

Procedures and duration:

The study will be conducted from April to May 2017 on obstetrics care providers working in urban health centres of Finfine area Special Zone of Oromia regional State. To access the

participant; selection of urban health centers will be made first. Then, obstetrics care providers in selected health centers will be included the study. They will fill self-administered questionnaires regarding their knowledge on active management of third stage of labor. Then, the data collector fill the check list observing their practice during active management of third stage of labor after securing consent from the participant.

Confidentiality

The information gathered from participants will be confidential. The finding of this study will be general for the study community and will not reflect anything particular of individual persons. The check list will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research.

Rights

Participation in this study is voluntary basis. Considering the importance of the research to health centers in the region you are free to decide on it. If any violation of rules and conduct is seen throughout the study, your respective health center's administrator has full right to withdraw the study at any time.

If there are any questions or enquires any time about the study or the procedures, please contact:

Principal investigator

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