

## Research Article

# Obstetric Care Providers Knowledge and Practice towards Active Management of Third Stage of Labour at Hawassa City, SNNPRS, Ethiopia

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## ABSTRACT

**Background:** Active management of third stage of labour properly is frontline to prevent post-partum haemorrhage related maternal morbidity and mortality. 99% of the maternal deaths take places in developing countries. The majority causes of death occur within 4 h after delivery because of haemorrhage. Clinical trial suggests that Routine practice of active management third stage of labour dramatically reduce haemorrhage by 60%. Active management third stage of labour can help to save thousands of women life with low cost. The aims of this study to assess Obstetric care providers Knowledge and Practices on active management of third stage of labour at Hawassa city, South Ethiopia 2015.

**Methods:** An institutional based cross sectional study was conducted to health institution in Hawassa city, from April to May 2015. By using pretested structured questionnaires for knowledge assessment and observation checklists for practice. Simple random sampling technique was used to select 76 obstetric care providers. Data were entered using Epi Info version 3.5.1 was coded, edited, exported and analyzed

by SPSS version 20. Bivariate and multivariate logistic regressions were used to identify independent predictors of knowledge and practice of obstetric care providers.

**Results:** 24 (33.3%) of obstetric care providers had knowledgeable about active management third stage of labour and 16.7 % obstetric care providers was applied correctly active management of third stage of labour. Obstetric care providers who took pre/in-service training were 7.4 times was done correctly active management of third stage of labour than didn't take training [AOR=7.4, 95% CI, (1.07-51)].

**Conclusion and recommendation:** In this study knowledge and practice of obstetric care providers towards active management of third stage of labour is still low. The governmental and non-governmental organization which works in health related activities plan to give trainings on active management of third stage of labour.

**Keywords:** Active third stage management; Ethiopia; Delivery

## Abbreviations

AAUMF: Addis Ababa University Medical Faculty; AMTSL: Active Management of Third of Labour; BEmONC: Basic Emergency Obstetric and New Born Care; CCT: Cord Control Traction; FIGO: Federal International Gynaecology and Obstetrics; PPH: Post-Partum Haemorrhage; SNNPRS: Southern Nation Nationalities People Regional State

## Introduction

Every year worldwide and in Ethiopia 515,000 and 20,000 women, die respectively due to complications of pregnancy and childbirth. 99% of the maternal deaths take place in developing countries. The majority causes of death occur within 4 h after delivery because of haemorrhage<sup>1-3</sup>. A total of deliveries 5% women may develop postpartum haemorrhage; this is an accountable for a main part of maternal mortality and morbidity. Clinical trial suggests that Routine practice of active management third stage of labour dramatically reduce haemorrhage by 60%. Active management third stage of labour can help to save thousands of women life with low cost. However, the majority causes of death occur within 4 h after delivery because of haemorrhage and mismanagement third stage of labour<sup>3,4</sup>. There are 14 million women were suffered postpartum haemorrhage annually. Third-stage labour is the

period during which the placenta is completely expelled by cord control traction to prevent uterine agony and bleeding<sup>5</sup>. There are two contrasting approaches to the clinical management of the thirdstageoflabour: activeand expectant (sometimes referred to as physiological or passive) management. Expectant management is a noninterventionist approach<sup>6</sup>. In contrast, active management involves the clinician intervening in the process through three interrelated but independent processes, Prophylactic administration of an uterotonic agent, Controlled cord traction to aid the delivery of the placenta and uterine massage<sup>7</sup>. These three interventions hasten placental delivery by increasing uterine contractions, decreasing blood loss and preventing postpartum haemorrhage by averting uterine agony. Active management of third-stage of labour is currently recommended as protection against postpartum haemorrhage<sup>8</sup>. So the aims of this study to assess obstetric care provider's knowledge and practices on active management of third stage of labour.

## Methods and Materials

### Study area and period

The study was conducted at Hawassa city from April to May 2015. Hawassa city is located in the Southern part of the country and 273 km away from Addis Ababa and the capital of SNNPRS.

There are seven urban sub cities and 1 rural sub city. According to Hawassa city administration health department, the total population in 2014/2015 was expected 351,567. Out of the total population 170,510 (48.5%) were females and the rest (51.5%) were males. The numbers of women who were in childbearing age group (15-49) were 69,769, from this, 12,167 were pregnant. The health institutions were found in the city includes one governmental referral and one primary hospital, three private primary hospitals, nine governmental and two private health centres.

### Study population

The study population was all obstetric care providers who can manage active third stage of labour during the study period.

### Inclusion criteria

All obstetric care providers who were available at the time of data collection were included in the study.

### Exclusion criteria

Those who were unavailable and having less than half year experience were excluded from the study.

### Operational definitions

**Third stage management:** The third stage of labour is the time from the delivery of the foetus 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 guidelines): Administration of 10 IU oxytocin intramuscularly immediately within 1 min of delivery of foetus, apply Controlled cord traction and uterine massage after delivery of the placenta.

**Obstetric care providers:** are professionals who are learned and qualified to give obstetric care in this study those who have the capacity to manage third stage of labour.

**Knowledge:** The level of knowledge was determined on a knowledge index. Knowledgeable obstetric care provider is those who were known all AMTSL components and right time of oxytocin drug administration. Active management of third stage of labour. Knowledge was categorized as knowledge able and not knowledgeable.

**Practice:** The overt behaviour, habit or custom that people does, or carry out in his/her daily life. In this study it was measured based on question which measure the actual practices of study subjects based on predefined parameters like (time, dose of oxytocin's, CCT, uterine massage) and the results was added to classify obstetric care providers as skilled or not skilled.

### Study design and sample size determination

An institution based cross sectional study was employed. Sample size was determined by using single population proportion formula by considering assumptions of P value 5% as prevalence of active management of third stage of labour practice in Ethiopia<sup>9</sup> desired precision of 5%, 95% confidence level. 5% for non-response rate, a total of 76 obstetric care providers were required for the study.

### Sampling procedure

Systematic random sampling techniques were used to select the study subjects. The city had 4 hospitals and 12 health centres which gave labour and delivery services. Two hospitals and four health centres have selected by high case follow at least four per day. Seventy six obstetric care providers were selected by simple random sampling technique and a frame was used employer register.

### Data collection

Structured questionnaires and observation check lists were used. It was prepared in English and then translated to local language Amharic. The main contents of questionnaires were socio demographic characteristics, oxytocin drug utilization, knowledge, and observation about AMTSL practices based on FIGO guide line. The questionnaires were developed after reviewing different literatures<sup>8-10</sup>.

### Data quality control

Data were collected by eight BSc midwives who took BEmONC training, the data collects work area were out site of Hawassa city. Data collectors were trained for two day on the objectives of the study. Questionnaires were pre-tested at Yirgalem hospital to assess clarity, flow and consistency and revised prior to start data collection.

### Data analysis

To ensure the quality of data, all filled questionnaires were checked incompleteness and inconsistency. Data were entered using Epi Info version 3.5.1 and exported to SPSS version 20.0 for statistical analysis. Descriptive statistical analysis was used to compute frequency, percentage and mean for independent and dependent variables. Binary logistic regression analysis was used to ascertain the association between explanatory variables and outcome. Variables with significant association in the bivariate analysis were entered into multivariate analysis to determine knowledge and practice about obstetric care providers. Variables with P value less than 0.05 was considered as statistically significant. Finally the results were presented in texts, tables and graphs.

### Ethical consideration

Ethical approval and clearance was taken from institutional review board of AAUMF and then formal letter was written by the department of nursing to the concerned office. Regional Health Bureau gave permission to conduct the study in each selected health institution in the study area. After explaining the purpose of the study, verbal informed consent was obtained from respondents before data collection. The right to withdraw the study at any time was also assured. Coding was used to eliminate names and other personal identification of respondents throughout the study process to ensure participants confidentiality.

### Result

#### Socio-demographic characteristic and experiences of obstetric care providers

A total of 72 obstetric care providers were participated in the

**Table 1:** Socio-demographic characteristics of the obstetric care providers in Hawassa city, Sidama Zone SNNPRS, May, 2015.

Variables		Frequency	Percentage
Sex	Male	16	22.2
	Female	56	77.8
Age	20-30	52	72.2
	30-40	20	27.8
Religion	Orthodox	28	38.9
	Protestant	25	34.7
	Muslim	16	22.2
	others	3	4.2
Ethnicity	Sidama	27	37.5
	Amhara	24	33.3
	Oromo	16	22.2
	Tigre	3	4.2
	others	2	2.8
Profession	Health officer	2	2.8
	BSc midwife	16	22
	Diploma midwife	54	75
In/pre service training	yes	24	33.3
	no	48	66.7

\* Others like wolyita, guragie

study, with 95% response rate. Among the total study subjects 75% (n=54) were diploma midwives followed by 22% (n=16) B.Sc. midwives (Table 1).

### Knowledge of obstetric care providers on active management of third stage of labour

Respondents were knew the uterotonic drugs 4.2% (n=3). The majority of the respondents 86.1% (n=62) were known the dose of oxytocin is 10 IU (Table 2).

Only 33.3% (n=24) of the respondent had knowledgeable on three components, i.e., administering uterotonic drugs, apply control cord traction and uterine massage (Figure 1).

### Practices of obstetric care providers on active management of third stage of labour

More than half of 65.3% (n=47) the obstetric care providers were examined the abdomen to rule out the presence of another baby before administering oxytocin drugs. Only 31.9% (n=23) of the obstetric care providers gave the uterotonic drugs within one minute (Figure 2).

Majority of the obstetric care providers used 94.1% (n= 48) 10 IU oxytocin IM (intramuscular) (Table 3).

### Factors associated with knowledge and practice about obstetrics care providers

Male obstetrics care providers were 29.8 times have knowledgeable than female [AOR=29.78, 95% CI: (2.56, 345)]. Obstetrics care providers who got pre/in service training were 7.4 times practice than who did not get training [AOR=7.4, 95% CI: (1.07, 51)] (Tables 4 and 5).

### Discussion

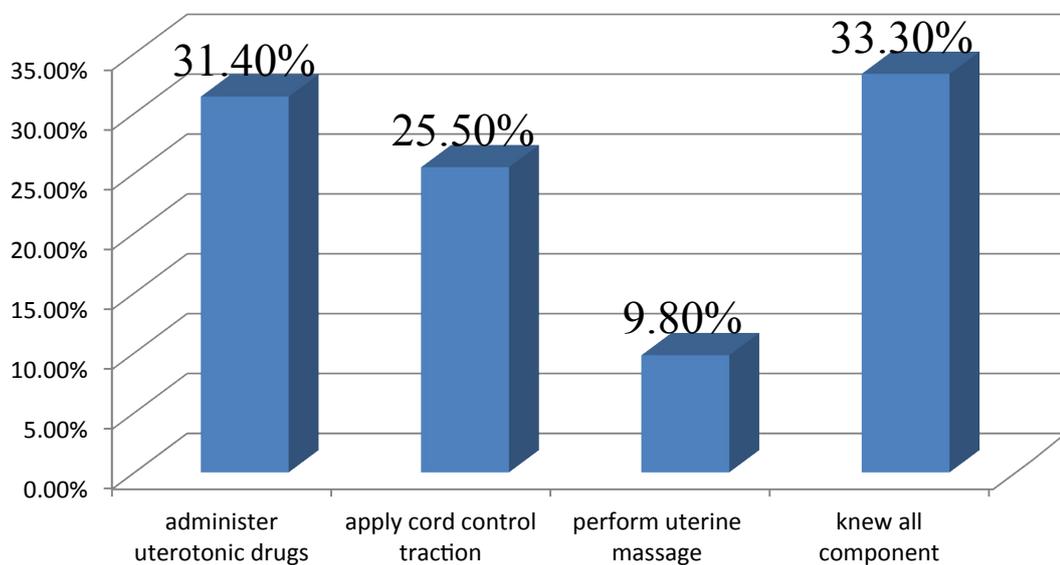
This study has tried to assess knowledge and practice

active management of third stage of labour among obstetric care providers in Hawassa city, sidama zone of SNNPRS. In this study showed that more than half of the respondents didn't know all the three components of active management of third stage of labour. Only 33.3% had knowledge on three components, i.e., administering uterotonic drugs, apply control cord traction and uterine massage and know the right time of oxytocin drug administration. These findings is higher than on obstetric care provider's knowledge on Active management of third stage of labour in south Nigeria 28.3% and Tanzania 9%<sup>11-13</sup>. Male obstetric care providers were 29.8 times have knowledge than female [AOR=29.78, 95% CI: (2.56, 345)]. This might be due to females have additional home activities and difficult to update their knowledge's and also the number of male and female participants were not proportional to compare, so it needs further investigation. Obstetrics care providers who got pre/in service training were 7.4 times practice than who did not get training [AOR=7.4, 95% CI: (1.07, 51)]. This is in line with the study done in the Tanzania<sup>3</sup>.

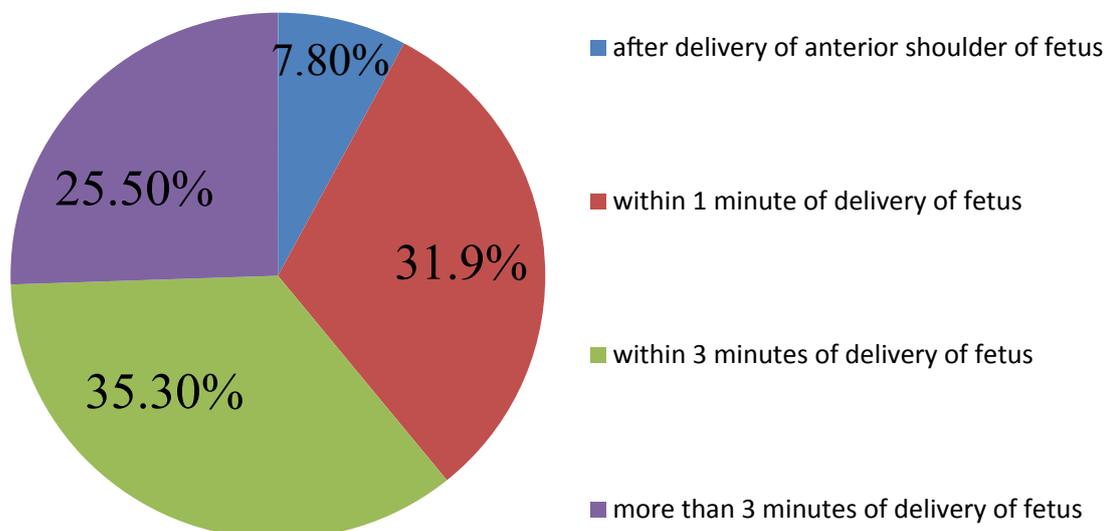
In this study practice of the obstetric care providers on active management of third stage of labour 15.7% of the study subjects was correctly practice. Which is higher than the study conducted in Ethiopia and in south Nigeria 5% and 7% respectively<sup>12,14</sup>. This might be due to the time of the research conducted. In this study 96.1% of the respondents had rid of the placenta after the administration of uterotonic drugs. It is coincide to studies conducted in Australia and United Kingdom<sup>6</sup>. According to this study, 100% of the obstetric care providers were provides oxytocin drugs for active management of third stage of labour. This is slightly higher than a study done in Istanbul, Turkey which is 95%<sup>12</sup>. This study also showed that 64.7% of the obstetric care providers ruled out the possibility of second twin before administration of oxytocin drugs. This finding is very

**Table 2:** Knowledge of obstetrics care providers on active management of third stage of labour in Hawassa city, Sidama Zone, SNNPRS, May 2015.

Variables		Frequency	Percent
Uterotonic drugs know	Oxytocin	64	88.9
	Ergometrine	4	5.6
	All	3	4.2
Know the dose of oxytocin	Yes	62	86.1
	No	10	13.9
Know the recommended route of oxytocin administration	Yes	59	81.9
	No	13	18.1
Know immediate role after delivery of fetus	Yes	27	37.5
	No	45	62.5
Know the time of Uterotonic drugs administration	Yes	55	76.4
	No	17	23.6
Know all essential components of active management of third stage of labor	Yes	24	33.3
	No	48	66.7



**Figure 1.** Knowledge on components of active management of third stage of labour.



**Figure 2.** Time of oxytocin drug administration of obstetric care providers during active management of third stage of labour.

**Table 3:** Practice of obstetric care providers on active management of third stage of labour in Hawassa city, Sidama Zone, SNNPRS, May 2015.

Variables		Frequency	Percent
Check the presence of another fetus	Yes	47	65.3
	No	25	34.7
Types of uterotonic drugs given	Oxytocin	68	94.4
	Ergometrine	4	5.6
Route of uterotonic drugs given	IM	66	91.7
	IV	6	8.3
Time of cord clamped	1-2 min	13	18.1
	3-5 min	45	62.5
	More than 5 min	14	19.4
Placenta is delivered before given uterotonic drugs	Yes	3	4.2
	No	69	95.8
Wait for gush of blood to apply cord control traction	Yes	11	15.3
	No	61	84.7
Placenta is supported with both hands	Yes	47	65.3
	No	25	34.7
Uterine massage is performed	Yes	34	47.2
	No	38	52.8
Placenta and membrane completeness is assessed	Yes	6	8.3
	No	66	91.7
Mother informed and trained how to massage the uterus	Yes	1	1.4
	No	71	98.6
Has over all skill	Yes	12	16.7
	No	60	83.3

**Table 4:** Results of multiple logistic regression analysis of active management of third stage of labour knowledge among obstetric care providers in Hawassa city, Sidama Zone, SNNPRS, May 2015.

Variable	AM TSL		95% CI		AOR
	Yes	No	OR		
Sex	Male	13	3	16.5 (2.83, 85.05)*	29.78 (2.56, 345)**
	Female	13	44	1.00	1.00
Age	20-30	20	32	1.52 (0.17, 2.50)	2.68 (0.46, 15.7)
	31-40	6	47	1.00	1.00
Ethnicity	Sidama	7	20	0.5 (0.15, 1.80)	0.67 (0.18, 2.7)
	Others	18	27	1.00	1.00
Religions	Christians	14	28	0.3 (1.184, 16.945)	3.6 (0.85, 15.5)
	Muslim	11	7	1.00	1.00
Profession	B.Sc. Midwife & HO	10	8	2.86 (0.78, 10.45)	0.54(0.06,5.16)
	Diploma Midwife	16	38	1.00	1.00
Year of graduation	2000-2005 E.C	24	41	2.3 (0.24, 22.7)	1.1(0.10,11.9)
	<2000 E.C	1	6	1.00	1.00
Receive pre/in service training	yes	10	14	1.50 (0.2, 2.3)	1.5(0.32, 6.6)
	no	3	45	1.00	1.00
Types of training	On AMTSL	1	6	0.43 (0.04, 4.14)	0.35(0.02, 4.4)
	Others	24	41	1.00	1.00

\*p-value&lt;0.05

**Table 5:** Results of multiple logistic regression analysis of active management of third stage of labour practice among obstetric care providers in Hawassa city, Sidama Zone, SNNPRS, May 2015.

Variable	AMTSL		95% CI		
	Yes	No	OR	AOR	
Sex	Male	3	13	1.25 (0.14, 4.6)	3.08 (0.29, 32.4)
	Female	8	48	1.00	1.00
Age	20-30	6	14	0.3 (0.06, 1.44)	0.25 (0.05, 1.3)
	30-40	6	47	1.00	1.00
Ethnicity	Sidama	4	23	1.0 (0.2, 4.8)	1.95 (0.25, 15.)
	Others	7	38	1.00	1.00
Religions	Christians	4	49	0.14 (1.44, 37.0)*	6.6 (0.85, 51.8)
	Muslim	7	11	1.00	1.00
Profession	B.Sc. Midwife & HO	1	17	2.86 (0.78, 10.45)	0.54 (0.06, 5.16)
	Diploma Midwife	10	44	1.00	1.00
Year of graduation	2000-2005 E.C	1	6	2.3 (0.24, 22.7)	1.1 (0.10, 11.9)
	<2000 E.C	10	55	1.00	1.00
Types of training	On AMTSL	1	6	1.4 (0.14, 14.38)	0.58 (0.04, 8.2)
	On others	10	55	1.00	1.00
Receive pre/in service training	yes	8	16	8.73 (1.5, 49.8)*	7.4 (1.07, 51)**
	no	3	45	1.00	1.00

higher than the study was done in Istanbul, turkey 18.1%<sup>12</sup>.

### Strengths and Limitation of the Study

The strength of this study was used observational check list. However, it has limitations that it was based on small sample size. Analytical study design is recommended for further study.

### Conclusion and Recommendation

The knowledge and practice of obstetrics care providers towards of active third stage management of labour was s very low. Obstetric care providers who receive pre/in-service training are seven times skill full than those who did not receive training (AOR=7.4, 95% CI=1.07-51). The obstetric care providers update themselves and perform correctly active management of third of labour and accept as norm active management of third of labour. The health bureau employee midwives and trained components of active management of third of labour. The health institutions also prepare morning session every day and mentorship. The health institution put guideline in the labour ward and put poster on the wall of labour ward to show AMTSL.

### Acknowledgement

This research was funded by Addis Ababa University Grant for thesis Research. Therefore, we are grateful to Addis Ababa University, College of Medicine and Health Sciences for their financial support. We would also like to thank all data collectors, supervisor and research participants who took part in this study without them this research would not have been realized.

### References

1. Sosa CG, Althabe F, Belizan JM, Buekens P (2009) Risk factors for postpartum hemorrhage in vaginal deliveries in a Latin-American population. *Obstet Gynecol.* 113: 1313.
2. Cherinea Khalilb MK, Hassaneinc N, Sholkamy H, Breebaart M, et al. (2006) Management of the third stage of labour in an Egyptian teaching Hospital. *Pubmed Central.* 87: 54-58
3. Federal Democratic Republic of Ethiopia Ministry of Health (2012) *Maternal Death Surveillance and Response (MDSR) Technical Guideline.*
4. Salvador E (2009) Active management of the third state of labour is rare in some developing countries. *Bulletin of the World Health Organization.* 87: 207-215.
5. Ramadhani F (2011) Midwives' competency for implementation of active management of third stage of labor in Dar es salaam municipal hospitals, Tanzania: Muhimbili University of Health and Allied Sciences.
6. McDonald S (2007) Management of the third stage of labor. *Journal of Midwifery & Women's Health.* 52: 254-261.
7. Taylor U, Delorme P, Miller S (2012) FIGO guidelines: Prevention and treatment of postpartum haemorrhage in low-resource settings. *International Journal of Gynecology and Obstetrics.* 117: 108-118.
8. Geller S, Adams M, Kelly P, Kodkany B, Derman R (2006) Post-partum haemorrhage in resource-poor settings. *International Journal of Gynecology and Obstetrics.* 92: 202-211.
9. Hofmeyr GJ, Abdel-Aleem H, Abdel-Aleem MA (2008) Uterine massage for preventing postpartum haemorrhage. *Cochrane Database Syst Rev.* 16: 6431
10. Yermachenko A (2006) The appraisal of the technical update "Prevention of postpartum haemorrhage by active management of third stage of labour".
11. O'Connell M. Active management of the third stage of labor.
12. Stanton C, Armbruster D, Knight R, Ariawan I, Gbangbade

- S, et al (2009) Use of active management of the third stage of labour in seven developing countries. *Bulletin of the World Health Organization*. 87: 207-215.
13. Mfinanga GS, Kimaro GD, Ngadaya E, Massawe S, Mtandu R, Shayo EH, et al (2009). Health facility-based Active management of the third stage of labor: Findings from a national survey in Tanzania. *Health Res Policy Syst*. 7: 6.
14. Oladapo OT, Fawole AO, Loto OM, Adegbola O, Akinola OI, et al (2009) Active management of third stage of labour: A survey of providers' knowledge in southwest Nigeria. *Arch Gynecol Obstet*. 280: 945-952.

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*Submitted: November 19, 2016; Accepted: November 26, 2016; Published: November 30, 2016*