

Assessment of Midwives' Competence in Active Management of Third Stage of Labour in Primary Health Centres in Anambra State, Nigeria

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Abstract

Background: Maternal morbidity and mortality have been a major issue for decades, despite different avenues and programmes created to reduce it; the rate of improvement remains slow. Haemorrhage being the leading cause can be prevented if every third stage of labour is actively managed. Many studies have proved that active management of third stage of labour is effective. This study was designed to assess knowledge and utilization of active management of third stage of labour (AMTSL) by midwives in primary health centres (PHC) as well as the factors influencing the practice.

Methodology: The descriptive study consisted of 177 midwives from 15 purposively selected Local Government Areas (L.G.A) of Anambra State. The instruments for data were collection structured questionnaire and an observational checklist. The questionnaire assessed knowledge, utilization and factors affecting the practice of AMTSL while the observational checklist was used to assess the actual practice of the midwives.

Result The result showed that the majority of the respondents have high (66.7%) and moderate (28.2%) knowledge. Almost all respondents (78%) reported frequent practice of AMTSL but surprisingly on observation, they do not. Many practiced some segments of AMTSL like injection of oxytocin, early clamping and cutting of the cord and uterine massage. Lack of assistants on duty; non availability of oxytocin; non-compliance of patients and long procedural time were the hindering factors identified.

Recommendations: Periodic workshops and seminars, frequent monitoring and supervision of midwives with or without notice to assess their practices will be beneficial for ensuring safety of lives and improving quality of care.

Keywords: active management of third stage of labour, midwives, primary health centre, Nigeria.

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1 Introduction and Background Information

Maternal mortality due to haemorrhage is highest where there is poor access to skilled providers, transport systems, and emergency services (WHO, 2005). Globally, obstetric haemorrhage constitutes 31% of maternal death, of which 99% of these deaths occurs as primary post partum haemorrhage (PPH) (WHO, 2005). In Nigeria, 1 in 20 women die of pregnancy/delivery related causes, compared to 1 in 61 for all developing countries and 1 in 29,800 for developed country. PPH is responsible for around 25% of maternal mortality worldwide (WHO, 2007), reaching as high as 60% in some countries. World Health Organization report in 2005 estimated that 14 million women suffer PPH annually. This is not surprising considering that a woman will die within two hours, on average, after the onset of PPH if she does not receive proper treatment (WHO, 2007). Africa has the highest prevalence rate of about 10.5% of maternal mortality (Carroli, et. al., 2008). PPH is most commonly caused by uterine atony (Ijaiya, et.al., 2003, Koh, et.al.,2009) and retained placenta due to mismanagement (Ajenifuja, et.al.,2010). Understanding the processes that occur in the third stage of labour, that is, the period from the birth of the newborn to the delivery of placenta and the anatomy and physiology of the uterus is vital in preventing PPH. The myometrium is the muscular component of the uterus and is composed of oblique muscle fibers arranged in a 'criss-cross' pattern surrounding blood vessels. During the third stage of labour, these muscle fibers contract and retract, the myometrium progressively becomes thicker and the intrauterine volume decreases. The placenta is unable to contract and thus begins to separate as the surface area of the uterus becomes smaller. The umbilical cord may appear to lengthen. This process typically takes 10-30 minutes, if the placenta fails to separate within 30 minutes after childbirth the third stage is considered to be prolonged. Upon separation of the placenta, the uterus becomes firm and globular, rising in the abdomen and possibly moving away from the abdominal midline.

At the end of a term pregnancy, 500-800 milliliters of blood flow through the blood vessels at the placental site every minute. As the placenta separates from the uterus, these vessels break and bleeding occurs. Continuous, coordinated contractions of the myometrium compress the local blood vessels to control bleeding at the placental site and allow formation of a retro placental clot. When the uterus fails to have coordinated muscular contractions it is said to be atonic, blood vessels at the placental site are not constricted and hemorrhage occurs. Numerous studies have examined incidence of PPH (Mousa and Alfrevic 2003, Lu, et.al., 2005 and Ujah, et. al., 2006) and factors that may lead to its occurrence (Ijaiya, et. al., (2003); Koh, et. al., (2009); Ajenifuja et.al., (2010)). Predicting who will have PPH based on risk factors is difficult because two-thirds of women who have PPH have no risk factors, therefore, every woman must be closely monitored during and after childbirth for signs of PPH (JHPIEGO, 2001). In addition, steps should be taken to eliminate unnecessary procedures that contribute to the incidence of PPH, such as the use of episiotomy or operative vaginal delivery without clear indication. Ijaiya et.al., (2003) stressed that there is no relationship between booking period and occurrence PPH, neither can presence of risk factors be used to predict PPH, hence, AMTSL is an effective measure to prevent it. AMTSL is the use of oxytocin on delivery of the anterior shoulder; early clamping and cutting of the cord; nipple stimulation by commencing breastfeeding immediately after delivery; assisted delivery of the placenta through controlled cord traction and massaging of the uterus immediately after delivery (Marshall, et.al., 2008). The procedure requires time; assistance, and

cooperation of the woman in labour. Instruments required for active management of third stage of labour are regular delivery pack, oxytocin, gloves, syringe and needle. Before second stage of labour, 10 units of oxytocin and syntometrine are syringed and the bladder emptied (participant's handbook for nurse/midwives life saving skills training). Several studies have shown the effectiveness of AMTSL in reducing PPH as documented by Prendiville, et.al.,(2000), Leduc, et.al., (2009), Begley, et.al., (2010), and Althabe et.al., (2006) while a study suggested its lack of benefit for the newborn (McDonald, et.al., 2003). Routine administration of uterotonic drug is an integral part of AMTSL which has greatest impact on the prevention of PPH (McDonald et.al., (2003), Elbourne et.al.,(2001), Ijaiya et.al., (2003)).

Preventing PPH through AMTSL is the most effective option for reducing mortality caused by haemorrhage. Routine use of AMTSL for all vaginal singleton birth in health facilities is recommended by the International Federation of Gynecologist and Obstetric, International Confederation of Midwives and WHO(2007). The fact that midwives actively manage third stage of labour is questionable because the incidence of PPH keeps rising. However, studies have identified a gap in the use of AMTSL. in the practices of midwives (Festin, et.al., 2003, Cherine et.al., (2004) and Slaton, et.al., 2009). It is against this background that the study is designed to assess midwives' knowledge and practice of active management of third stage of labour in primary health centres in Anambra state, Nigeria.

Statement of the problem: over the last decade, midwives in Nigeria have been exposed to training on life saving skills yet, maternal mortality due to haemorrhage is still very high. It is not clear whether the training has improved their competence in the active management of third stage of labour.

Research Objective: The overall objective of the study was to assess midwives' competence in active management of third stage of labour

Specific objectives were to: Assess midwives' knowledge of AMTSL; Explore the utilization of AMTSL; Identify factors influencing practice of AMTSL

Definitions of keywords/concepts

Active management of third stage of labour is the use of oxytocin on delivery of the anterior shoulder; early clamping and cutting of the cord; nipple stimulation by commencing breastfeeding immediately after delivery; assisted delivery of the placenta through controlled cord traction and massaging of the uterus immediately after delivery.

Midwife is a person who is specially trained in midwifery, licensed and qualified professionally in Nigeria.

Primary health centres are the first level health care facilities controlled by local government authority in each state

2 Research Methodology

Design: The clinical-based descriptive design was adopted.

Setting: Anambra state lies in the South Eastern part of Nigeria. It is one of the five Igbo speaking states. There are 3 Senatorial zones, 21 Local Government Areas (LGA), 235 health districts, 330 wards and 177 communities. There are 178 functioning primary health centres.

Sampling: Simple random sampling technique was used to select fifteen (15) LGAs. All the 126 PHCs in the 15 LGAs were selected. There were 204 midwives in these PHCs. The sample size estimates was based on the total number of midwives in all the PHCs in the State, having done a power analysis using a medium effect size of 0.5.

For the observations, one PHC from each of the 15 LGAs was selected by a simple random sampling technique. There were four observations in each centre.

Sample size: a total of 177 midwives participated in the survey while 60 midwives from this population were observed. This sample size constituted 87% of midwives in the selected centres and 71% of the entire population of midwives in all the LGAs of the State.

Inclusion criteria: Participation was based strictly on consent.

Instrument: The instrument was developed after critical review of literature and training manuals on Life saving skills. A 25- item structured and self- administered questionnaire and an 8-item observation checklist were utilized. The questionnaire consisted of two sections A and B. Section A dealt with the socio-demographical characteristics of respondents while section B was subdivided to address each research objective. Items in section B were rated: high knowledge was a score of $\geq 70\%$; moderate knowledge was a score of 50% - 69% while poor knowledge was a score $<50\%$. Extent of utilization was assessed high with a score of $>50\%$ while low was a score of $<50\%$. The questionnaire was pre tested among 10 midwives in one of the non participating LGAs. A Cronbach's alpha coefficient score of $r = 0.87$. was obtained.

3 Procedure for Data collection

Four research assistants were trained for data collection. The selected PHCs were visited and the key officers were informed about the study. Permission was further obtained in addition to that of the State Health Management board. This provided access to the midwives. Researchers obtained individual consent and distributed questionnaire to almost every midwives in PHCs and where any eligible participant declined, researchers moved on. Filled questionnaire was collected before moving to the next PHC this accounted for high retrieval rate.

Labour was also observed at the PHCs by the researchers. Four visits were made to each PHC to observe the method of practice by the midwives using a structured observation checklist. These observed midwives were among the midwives that responded to the questionnaire. The midwives were informed that it was a follow up of the survey. Those

who were not willing to be observed were not included. Data collection started on 2nd of October, 2012 and lasted for seven weeks.

Ethical issues

Ethical clearance was sought from the University of Ibadan / University College Hospital Ethical Review Committee. Permission was also obtained from the State Health Management Board, (PHC). The midwives in each PHC were informed about the purpose and objectives of the study. Issues of confidentiality of person and information; voluntariness in participation; withdrawal from the study at any point if they wish were stressed. After ascertaining that participants had clear understanding of the study, consent was obtained.

Method of data analysis

Data analysis was done using a descriptive statistics of the statistical package for social sciences version 16.

4 Results

Data on Table 1 showed that majority of the respondents 77 (43.5%) were within the age of 31-40 years, 51 (28.8%) were 41-50 years, 30 (16.9%) between age 21-30 while 19 (10.7%) are within 51-60 years. All the respondents 177 (100%) are female and Christian. The marital status showed that 159 (89.8%) were married and 18 (10.2%) were single. The table also showed that majority of the midwives 115 (65%) were RN, RM, 33 (18.6%) were RN, RM with other qualifications, 12 (6.8%) were RM, 14 (7.9%) were RN, RM, B.NSc, 3 (1.7%) were RN, RM, B.NSc. with postgraduate qualifications. The years of experience were: ≤ 5 years: 22 (12.4%); 6 – 10 years: 55 (31.1%); 11-15 years: 48 (27.1%); 16- 20 years: 44 (24.9%); ≥ 21 years: 8 (4.5%).

Table 1.1: Respondents' Demographical characteristics

Demographic characteristics	Frequency/percentage
Age of respondents	
21 - 30 years	30 (16.9%)
31 - 40 years	77 (43.5%)
41 – 50 years	51 (28.8%)
51 – 60 year	19 (10.7%)
Gender	
Female	177 (100%)
Marital status	
Single	18 (10.2%)
Married	159 (89.8%)
Religion	
Christianity	177 (100%)
Academic qualification	
RM	12 (6.8%)
RN, RM,	115 (65%)
RN, RM with other qualifications	33 (18.6%)
RN, RM, BNSc.	14 (7.9%)
RN, RM, CHO, BNSc. with postgraduate qualifications	3 (1.7%)
Years of experience	
≤ 5years	22 (12.4%)
6 – 10 years	55 (31.1%)
11-15 years	48 (27.1%)
16- 20 years	44 (24.9%)
≥ 21 years	8 (4.5%)

Knowledge of AMTSL: Table .2 shows that all the respondents 177 (100%) knew injection of oxytocin as a procedure in AMTSL, 162 (91.5%) knew about early clamping and cutting of the cord, 156 (88.1%) midwives indicated nipple stimulation by breast feeding, 150 (84.7%) knew control cord traction while 165 (93.2%) knew massaging of the uterus.

Level of knowledge of midwives on AMTSL: Table .2: shows the level of knowledge of the respondents on AMTSL, 118 (66.7%) of the respondents were highly knowledgeable on AMTSL, 50 (28.2%) had moderate knowledge while 9 (5.1%) had low knowledge.

Table 2: Midwives general knowledge and level of knowledge on AMTSL

Knowledge variables	Responses	
	Yes	No
AMTSL procedures		
Injection of oxytocin	177 (100%)	
Early clamping and cutting of cord	162 (91.5%)	15 (8.5%)
Nipple stimulation by breastfeeding	156 (88.1%)	21 (11.9%)
Controlled cord traction	150 (84.7%)	27 (15.3%)
Massaging of the uterus	165 (93.2%)	12 (6.8%)
Level of knowledge	No	Percentage%
Low knowledge	9	5.1 %
Moderate knowledge	50	28.2%
High knowledge	118	66.7%
Total	177	100%

Utilization of AMTSL: About 141 (79.7%) often give oxytocin on delivery of the anterior shoulder; 69 (39%) reported frequent administration of oxytocin on delivery of the baby; 147 (83.1%) midwives always clamp and cut the cord immediately after delivery; 18 (10.2%) of the respondents indicated frequent clamping and cutting of the cord after 2-3 minutes of delivery; 171 (96.6%) commenced breastfeeding of the baby immediately after delivery; 129 (72.9%) of the respondent allowed the placenta to separate and deliver spontaneously; 135 (76.3%) indicated frequent delivery of the placenta by control cord traction; 156 (88.1%) of the respondent emptied the uterus immediately after delivery by massaging while 155 (93.2%) frequently examine the placenta after delivery. (See table 3)

Table 3: Respondents' practice of AMTSL

Practice of AMTSL.	Responses		
	Often	Rarely	Never
Oxytocin is given on delivery of the anterior shoulder	141 (79.7%)	36 (20.3%)	
Oxytocin is given after the delivery of the baby	69 (39%)	90 (50.8%)	18 (10.2%)
The cord is clamped and cut immediately	147 (83.1%)	30 (16.9%)	
The cord is clamped and cut after 2-3minutes of delivery	18 (10.2%)	45 (25.4%)	114 (64.4%)
Breastfeeding of the baby commences immediately after delivery	171 (96.6%)	6 (3.4%)	
Placenta is allowed to separate and deliver spontaneously	129 (72.9%)	48 (27.1%)	
Placenta is delivered by controlled cord traction	135 (76.3%)	36 (20.3%)	6 (3.4%)
Empty the uterus immediately after delivery by massaging	156 (88.1%)	21 (11.9%)	
Examination of placenta after delivery	165 (93.2%)	12 (6.8%)	

On observation of labour to determine the practice and confirm their responses, 60 observation checklists were analyzed. 8 (13.3%) gave oxytocin on delivery of the anterior shoulders, 47 (78.3%) gave oxytocin on delivery of the baby, 57 (95%) clamped and cut

the cord immediately after delivery of the baby, 11 (18.3%) put the baby to breast immediately, 29 (48.3%) delivered the placenta by controlled cord traction while 44 (73.3%) massaged the uterus immediately after delivery of the placenta and membrane.

Table 4: Showed the practice of AMTSL on observation.

Practice of AMTSL on observation	Actions	
	Done	Not done
Oxytocin given on delivery of the anterior shoulder	8 (13.3%)	52 (86.7%)
Oxytocin given after the delivery of the baby	47 (78.3%)	13 (21.7%)
Cord clamped and cut immediately after delivery of the baby	57 (95%)	3 (5%)
Baby put to breast immediately	11 (18.3%)	49 (81.7%)
Placenta delivered by controlled cord traction	29 (48.3%)	31 (51.7%)
The uterus massaged immediately after delivery of the placenta and membrane.	44 (73.3%)	16 (26.7%)
Amount of blood loss checked and recorded	27 (45%)	33 (55%)
Vital signs continually monitored throughout the procedures	31 (51.7%)	29 (48.3%)

Extent of utilization of AMTSL: The extent of utilization of AMTSL, practice was graded into low and high practice. Table 5 shows that 138 (78%) highly practice it while 39 (22%) lowly practice it from the questionnaire. On observation, it was only 25 (41.7%) who highly practice AMTSL while 35 (58.3%) lowly practice it.

Table 5: shows the extent of utilization of AMTSL based.

Extent of practice	From the questionnaire		On observation	
	No	Percentage %	No	Percentage %
Low practice	39	22%	35	58.3%
High practice	138	78%	25	41.7%
Total	177	100%	60	100%

Factors influencing the practice of AMTSL: Table 6 shows respondents' factors militating against AMTSL. About 42 (23.7%) reported no assistant while on duty; 36 (20.3%) ascribed to shortage or no supply of oxytocin; 27 (15.3%) indicated lack of cooperation of patients while 25 (14.1%) documented that the procedure was time consuming.

Factors influencing the practice of AMTSL on observation: During observation, about 40 (66.7%) midwives were the only midwife on duty though with assistance from non midwives while 14 (23.3%) had no assistant.

Table 6: Respondents' response and the researcher's observation of the factors militating against AMTSL

Factors influencing the practice of AMTSL	Responses	
	Yes	No
Do you have assistant when on duty	135 (76.3%)	42 (23.7%)
Shortage or no supply of oxytocin in the PHC.	36 (20.3%)	141 (79.7%)
Do your patients cooperative during the procedure	150 (84.7%)	27 (15.3%)
The procedures take time	25 (14.1%)	152 (85.9%)
Factors influencing the practice of AMTSL on observation	Yes	No
How many midwives are on duty		
one midwife	40 (66.7%)	
two midwives	12 (20%)	
three midwives	8 (13.3%)	
Was there an assistant on duty with the midwife	46 (76.75%)	14 (23.3%)

5 Discussion of Research Results

Midwives' knowledge of AMTSL.

Majority of the midwives (66.7%) had high knowledge of AMTSL while 28.2% had moderate knowledge, this finding was supported by Harvey et.al., (2004) study in Benin, Ecuador, Jamaica and Rwanda which reported that 55.8% were knowledgeable and 48.2% skilled on the practice and also Harvey et.al., (2007) in Nicaragua observed that 62% were knowledgeable on WHO integrated management of pregnancy and child birth (IMPAC) and their average skills were 46% on active management of third stage of labour. It is important to state here that the high knowledge demonstrated by respondents may be a product of the richness of the midwifery curricular.

Utilization of AMTSL.

The finding on the level of utilization is quite revealing as the respondents indicated high practice (78%) but on observation, only 41% high practice of AMTSL was recorded. This shows that a wide gap exists between current evidence based standards and current levels of provider competence. Same was also observed in Benin; Ecuador, Jamaica and Rwanda by Harvey et.al, 2004 and in Nicaragua by Harvey et.al., (2007). From these findings, a good number of midwives practice some segments of the procedure like use of oxytocin as found by (Turan, et.al., 2006) and immediate cord clamp and cut; only very few practice the procedures holistically. These findings were affirmed by Slaton, et.al. (2009) which reported 0.5% to 32% use of AMTSL in observed deliveries due to multiple deficiencies in practice. Cherine, et.al., (2004) also reported 15% use of AMTSL in all deliveries in Egypt while Festin et.al., (2003) reported 25% use of AMTSL in 15 University teaching hospitals in 10 countries with no pattern of difference between developed and developing country. Also Rational pharmaceutical management plus programme (2006) stated weak performance (17.6%) in the correct practice of AMTSL by midwives and obstetricians in Benin. Administration of oxytocin (61.2%) and controlled cord traction (65.2%) were done by most of the professional but few massaged the uterus

(34.8%). This finding was also contradicted by some studies like that of Rizvi, et.al., (2004) they noted 0.45% and 100% adherence on successful reduction of massive PPH by use of guideline and staff education, Luman, et.al., (2011) discovered 80% compliance with the management protocol for massive PPH in Pakistan while Farrare, et.al., (2010) reported wide use of AMTSL by midwives and obstetricians in the United Kingdom.

Factors influencing the practice of AMTSL

The hindering factors observed were lack of an assistant while on duty (23.7%), shortage of oxytocin (20.3%), and noncompliance of patient during the procedure (15.3%), while 14.1% perceived the procedure to be time consuming.

During observation, 66.7% of the midwives were the only midwife on duty while 23.3% had no assistant on duty. Fauveau, et.al.,(2008) observed that 40% of births in low income countries were assisted by properly skilled birth attendants and in north western England. Ashcroft, et.al.,(2003) identified some adverse events and unreported “near misses attributable to midwifery shortage. Most of the midwives performed clerical duties thus reducing the time for provision of intrapartum care with attendant erosion of their labour ward skills and confidence. Ashcroft, et.al.,(2003) suggested that absolute staffing level was crucial for achievement of good outcome, the experience and proper deployment of available midwives were equally necessary.

In views of the findings of this study, it implies that the skills and practice of midwives are not congruent with their knowledge of AMTSL. This gap can be bridged by reorienting the midwives on the importance of quality practice and instituting standards to measure the performances of the midwives providing the care. With the right attitude, knowledge, proper education and practice, the lives of women would be in safer hands. The need for continuous training and retraining of midwives are vital to improving the standard of practice. World Health Organization recommends that maternity care providers should receive fresher training or updates in midwifery every 3-5 years. This is to buttress the need for in-service training. The need for improvement in the quality of midwifery care cannot be over emphasized, hence the need to embrace avenues that could improve staffing pattern. Implementing staffing ratio will however, provide great opportunity for improving patients care.

6 Conclusion

Midwives have good knowledge of active management of third stage of labour but the practice is highly deficient for reasons attributable to systemic failure though not devoid of personal lapses. As professionals, persistent request for resources that will contribute to high productivity and demonstration of competence is expected. Where this is not forthcoming, the profession and society must be informed; otherwise, it will lead to querying the competence of such professional group. Sustained government and political will in the areas of health resource allocation will help midwives practice what they know effectively thus reducing maternal mortality resulting from post partum haemorrhage.

Recommendations: The following recommendations are therefore made; Create policy support for the routine use of active management of third stage of labour as one of the most effective interventions to prevent postpartum haemorrhage.

Promote community and facility based commitment for routine availability and use of active management of third stage of labour for all women during childbirth.

Partner with regional task forces, civil society, and professional associations to promote local commitment.

Include active management of third stage of labour in appropriate pre service and in-service curricula and trainings and provide support for training.

Carry out training follow-up, monitoring, and supervision.

Integrate active management of third stage of labour into comprehensive safe motherhood training programmes.

Ensure adequate infrastructure, supplies, and utilities making available logistics system support like cold chain.

Support cross-cutting issues such as quality improvement, infection prevention, and access to skilled assistance at delivery.

Limitations: There were two major limitations of this study: one, the study was carried out in a low/poor resource setting and two, direct observation of practice which may on its own affect what was done. Despite the limitations of this study, the finding may be useful to midwives.

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