

Knowledge and Management of Post Partum Haemorrhage Among Skilled Birth Attendants in Primary Health Centres of Jos North LGA, Plateau State

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To cite this article:

Lydia Babatunde Bulndi, Ramyil Mamzhi-Crown Seljul, Ogundeko Timothy Ogundeko, Bassi Amos Pual, Adeniyi Olusegun Godwin, Bulndi Isaac Godwin, Stephen Nanbur, Tina Ubanyi, Ramyil Seljul Mary. Knowledge and Management of Post Partum Haemorrhage Among Skilled Birth Attendants in Primary Health Centres of Jos North LGA, Plateau State. *World Journal of Public Health*. Vol. 2, No. 4, 2017, pp. 124-130. doi: 10.11648/j.wjph.20170204.11

Received: May 18, 2017; Accepted: June 3, 2017; Published: August 11, 2017

Abstract: Postpartum Haemorrhage is the leading cause of maternal mortality worldwide with a 6% prevalence recorded. In Africa and Asia where most maternal deaths occurred, postpartum haemorrhage accounts for more than 30% of all maternal deaths. However, the proportion of maternal deaths attributable to postpartum haemorrhage varies considerably between developed and developing countries. Consequently, many health care workers in developing countries have little or no access to basic practical information of PPH making it difficult to assess women with the risk factors typically leading to the complication that develops due to PPH. This study is aimed to determine the level of knowledge and managements skills of birth attendants providing delivery services as regards to PPH in Jos North, Plateau State, Nigeria. A multistage sampling technique was used to identify skilled birth attendants who are involved in the provision of maternal health services in Jos North Local Government Area. Informed consent was obtained from the respondents and when permitted by the respondents, the questionnaires were administered with confidentiality and results recorded by the interviewer. Out of 100 questionnaires completely filled, 86% of respondent are female why 14% are male. Professional qualifications of Registered Nurses (RN) was 12%, 10% of Registered Midwives (RM), RN & RM where 31%, Community Extension Health Workers (CHEW) is 36% and 11% of Junior Community Health Extension Worker (JCHEW) respectively; 56% of them are of the age range between 41-50 yrs; while 18% were between the ages of 31-40 and ≥ 50 years respectively. We found out that RN/RM demonstrated 80% higher level of knowledge and management skills in management of post partum hemorrhage among skilled birth attendants in

primary health care of Jos North Nigeria with a significant relationship between the level of knowledge and professional qualification as well as significant relationship between the level of knowledge and years of working experience respectively at $p\text{-value} < 0.00001$. In this study, we found that the RN & RM demonstrated high level of knowledge and managements kills in the management of post partum hemorrhage in Jos north primary health care. The study also found a significant relationship between the level of knowledge and professional qualifications as well as significant relationship between the level of knowledge and years of working experience. Thus, as the professional qualification and years of working experience increases, the level of knowledge of PPH also increases, reducing the morbidity and mortality experience in Jos North LGA of Plateau state, Nigeria.

Keywords: Knowledge, Management, Skilled Birth Attendant, Primary Health Care, Jos North LGA

1. Introduction

Post partum haemorrhage (PPH) is the major cause of maternal mortality and morbidity [1]. It is estimated that post partum haemorrhage is the most common maternal deaths across the globe, responsible for more than 25% deaths annually [2]. Post partum haemorrhage is the leading cause of maternal mortality worldwide with a 6% prevalence recorded [3], [4].

In Africa and Asia where most maternal deaths occurred, post partum haemorrhage accounts for more than 30% of all maternal deaths [5], [6], [7]. However, the proportion of maternal deaths attributable to post partum haemorrhage varies considerably between developed and developing countries [8].

Death as a consequence of pregnancy remains an important cause of premature mortality worldwide. Every year, some 3 million girls aged 15 to 19 undergo unsafe abortions. Babies born to adolescent mothers face a substantially higher risk of dying than those born to women aged 20 to 24 [9], [34]. About 500,000 women estimated to have died from this potentially preventable cause each year occurring as a result of haemorrhage within few hours of delivery. Moreover, there is a high prevalence of anaemia in developing countries which complicates post partum haemorrhage [10].

In Nigeria, maternal mortality ratio is between 546 per 100,000 live births with haemorrhage accounting for 23% of all maternal deaths in 2008 with a slight increase in 2013 (23.8%) [12], [13]. However, Olowokere *et al* 2013 reported that prior booking of pregnant women for antenatal care was associated with lower prevalence of PPH (3.4%) as higher prevalence was recorded among un-booked clients in the primary health care institutions [11].

In Western and South Eastern regions of Nigeria, Idowu *et al* and Dim *et al* reported that 76.5% and 40.4% women who registered for antenatal care were anaemic at one trimester of pregnancy or another with associated incidence of PPH [14], [16], [23].

Increasing prevalence of PPH over the years, imbalance between resource rich and resource poor areas are probably due to the combination of increased prevalence of risk factors such as grand multiparity, lack of safe blood banking, non routine use of prophylaxis against haemorrhage, and lack of

measures for drugs and surgical management of atony. It is however important to note that various authors have suggested that PPH should be diagnosed with any amount of blood loss that threatens the hemodynamic stability of the woman [16], [17].

In developing countries, health systems are faced with enormous constraints that hinder the delivery of emergency obstetric care which is vital for saving the lives of women who developed PPH [18], [19]. In most developing countries, 50% or more of deliveries are attended to by unskilled providers at home; in addition, health care facilities are often not adequately staffed or lack medicines that could address PPH [20], [21], [22]. Consequently, many health care workers in developing countries have little or no access to basic practical information of PPH which makes it difficult to access women with any risk factors typically associated with complications that may likely develop PPH [23], [24], [33].

1.1. Management of Post partum Haemorrhage

There are several causes of PPH, however the most common cause is the uterine atony and active management of the third stage of labour is considered the gold standard strategy for reducing the incidence of PPH [24], [25]. This combines non drug interventions (i.e. controlled cord traction and cord clamping) with the administration of uterotonic drugs [24], [16]. Many care givers have come to rely on observation, advice from colleagues and building experience empirically through their own treatment success and failures [26], [27], [33].

1.2. Statement of the Problem

Maternal mortality ratio in Nigeria is between 23-23.8% death owe largely to post partum haemorrhage [11], [16]. Approximately half of all deliveries in developing countries take place without a skilled birth attendant and 70% of post partum mothers receive no post partum care in the first 6 weeks following delivery [23], [16]. Proper management of post partum haemorrhage is dependent on a number of factors which include skilled birth attendant, timely diagnoses and treatment adequate needed blood transfusion services and available and accessible health facilities [22], [28].

Several initiatives such as the Millennium Development Goals, (MDGs) and safe mother hood under taken by

government to reduce maternal mortality have been unsuccessful due to people's ignorance, and nonutilization of the available facilities [30], [31]. Moreso, out of the woman that finally reached and delivered at the PHC's quite a number of them developed PPH [27], [29], [33]. Hence, there is a need to assess the level of knowledge and evaluate the management of post partum hemorrhage among midwives working at the PHC's in Jos North.

1.2.1. Aim and Objective

This study aim to determine the knowledge and management skills of birth attendants providing delivery services regarding PPH in Jos North, Plateau State, Nigeria.

1.2.2. Research Question

What is the level of knowledge of skill birth attendants in recognizing PPH and its causes regard to management?

1.2.3. Hypotheses

Most deliveries and subsequent post partum complications occur at the primary care level therefore cause of PPH at this level should be evaluated and addressed to reduce the burden of PPH.

1.2.4. Scope of the Study

There is a need to have protocols of monitoring quality of care at all maternity service delivery points at the community level with the intention of building capacities of care providers for early detection and quality management of women with risk factors associated with pregnancy and delivery. This is a needed intervention in Nigeria where little is done to work with nongovernmental service providers to improve quality of care at the community level especially in Jos North Primary Health Care system [33].

2. Materials and Methodology

Jos North is a Local Government Area in Plateau State, Nigeria. Its head quarters are in the city center of Jos. It has an area of 291 km² and a population of 429,300 according to the 2006 census. It has 29 Primary Health Care centers spread across 20 political wards of Jos North LGA, with a total number of 40 Registered Nurses and Midwives (RN/RM), 110 Community Healthy Extension Workers (CHEW), 55 Junior Community Healthy Extension Workers (JCHEW) distributed to these Primary Health Care (PHC) centers. The study populations was all skilled birth attendants who are currently working at any of the PHC facilities in the Jos North, and are involved in the provision of maternal and child health care including postnatal services and family planning.

A multistage sampling technique was used to identify and select a sample frame of 100 skilled birth attendants who are involved in the provision of maternal health services working in primary health centre of Jos North Local Government Area of Plateau State, Nigeria with score at 95% confidence limit, this is due to the fact that the skilled birth attendance number is small, a 50% was drawn [34]. Respondents were

selected via an inclusion criterion who gave their consent to participate in the study. Informed consent was obtained from the respondents and when permitted by the respondents, the questionnaires were administered with confidentiality and results recorded by the interviewer.

The data collected was entered in to the statistics package for social science (SPSS) and subsequently analyzed. Frequency and distribution was presented in percentages and tables.

Permission was obtained from the Ethical Committee of Primary Health Care, Jos North Local Government of Plateau State for the study.

3. Results

Table 1 showed that 14 (14.0%) are male. While majority of them 86 (86.0%) are female. 12 (12%) are Registered Nurse, 10 (10%) are Registered Midwives, 31 (31%) are Registered Nurse-Midwives, 36 (36%) are Community Health Extension Workers (CHEW), 11(11%) are Junior Community Health Extension Workers (JCHEW). Most of the respondents 4 (4%) were NOII, 13 (13%) were NOI, 3 (3%) were ACNO, 21 (21%) were CNO, 34 (34%) were JCHEW, and 25 (25%) were SCHEW.

Table 1. Socio-demographic characteristics of the skilled birth attendants in Jos North LGA.

Variables	Frequency	Percentage (%)
Gender		
Male	14	14.0
Female	86	86.0
Professional qualifications		
RN	12	12.0
RM	10	10.0
RN/RM	31	31.0
CHEW	36	36.0
JCHEW	11	11.0
Total	100	100
Ranks		
NO II	4	4.0
NO I	13	13.0
ACNO	3	3.0
CNO	21	21.0
JCHEW	34	34.0
SCHEW	25	25.0
Total	100	100

Table 2 showed that 8 (8%) are within the age of 21-30, 18 (18%) are within the age of 31-40, 54 (54%) are within the age of 41-50, 18 (18%) are 51 years and above. The table also shows that 14 (14%) have had a working experience of 0-5 years, 22 (22%) have had a working experience of 6-10 years, 13 (13%) have had a working experience of 11-15 years, 15 (15%) have had a working experience of 16-20 years, and 36 (36%) have had a working experience of 21 years and above.

Table 2. Age and Years of Working Experience of respondents in Jos North LGA.

Variables	Frequency	Percentage (%)
Age		
20-30	8	8.0
31-40	18	18.0
41-50	56	56.0
51≥	18	18.0
Total	100	100
Years of Working experience		
0-5	14	14.0
6-10	22	22.0
11-15	13	13.0
16-20	15	15.0
21 ≥	36	36.0
Total	100	100

Table 3 showed that 58 (58%) of the respondents have seen women with PPH in their center, 31 (31%) have not seen women with PPH in their center while 11 (11%) do not know. 60 (60%) have ever managed PPH, 30 (30%) have not managed PPH while 10 (10%) did not know. 62 (62%) have management protocol for PPH in their PHC, 28 (28%) do not have management protocol for PPH in their PHC while 10 (10%) did not know. 34 (34%) said early cord clamping reduce PPH, 40 (40%) said early cord clamping does not reduce PPH, while 26 (26%) did not know. 60 (60%) said bladder emptying during the 3rd stage of labour prevent PPH, 30 (30%) said bladder emptying during the 3rd stage of labour does not prevent PPH, while 10 (10%) did not know. 90 (90%) use uterotonics

in the management of PPH and 10 (10%) do not use uterotonics in the management of PPH. 32 (32%) said placing the women in trendelenburg position reduce the risk of PPH, 49 (49%) placing the women in trendelenburg position does not reduce the risk of PPH while 19 (19%) did not know. 34 (34%) have ever heard of anti-shock garment, 53 (53%) have never heard of anti-shock garment while 13 (13%) did not know. 70 (70%) refer patients with PPH from their center to another center and 30 (30%) do not refer patients with PPH from their center to another center. 4 (4%) have provision for an ambulance in cases of emergencies, 84 (84%) do not have provision for an ambulance in cases of emergencies while 12 (12%) did not know.

Table 3. Knowledge and management of PPH among skilled birth attendants in Jos North LGA.

Variables	RESPONSE Frequency (%)		
	Yes	No	I Don't Know
Do you see women with PPH in your center?	58 (58)	31(31)	11 (11)
Do you have management protocol for PPH in your PHC?	28 (28)	62(62)	10 (10)
Have you ever managed PPH?	60 (60)	30(30)	10 (10)
Does early cord clamping reduce PPH?	34 (34)	4 (40)	26 (26)
Does bladder emptying during the 3 rd stage of labour prevent PPH?	60 (60)	30(30)	10 (10)
Do you use uterotonics agent in the management of PPH?	90 (90)	10(10)	0 (0)
Does placing the women in trendelenburg position reduce the risk of PPH	32 (32)	49(49)	19 (19)
Have you ever use anti-shock garment?	34 (34)	53(53)	13 (13)
Do you refer patients with PPH from your center to another center?	70 (70)	3 (30)	0 (0)
Is there provision for an ambulance in cases of emergencies?	4 (4)	84(84)	12 (12)

Table 4 shows that Registered nurse (RN), had 0 (0.0%) of low knowledge, 11 (24.4) demonstrated moderate knowledge and 12 (12.0) heard high Knowledge. Registered Midwives (RM), had 0 (0.0%) of low knowledge, 10 (22.2%). Moderate knowledge, 0 (0.0%) high knowledge. Registered Nurse and Registered Midwives (RN/RM) 3 (6%), 24 (53.3%) moderate knowledge, 4 (80.0%) high

knowledge. Community Health Extension Worker (CHEW) showed 36 (72%) low knowledge, 0 (0.0%), 0(0.0%) moderate knowledge and 0 (0.0%) high knowledge. Junior Community Health Extension Worker (JCHEW) low knowledge 11 (22%), 0(0.0%) moderate knowledge and 0(0.0%) respondents heard high knowledge.

Table 4. Associations between Professional qualifications and level of Knowledge in management of Post partum haemorrhage (PPH) among skilled birth attendants in Jos North LGA.

Qualification (s)	Low Knowledge	Moderate knowledge	High Knowledge	Total (%)	DF	X2*	P value
RN	0 (0.0)	11 (24.4)	1 (20.0)	12	8	92.490	0.0000 Significant
RM	0 (0.0)	10 (22.2)	0 (0.0)	10			
RN/RM	3 (6)	24 (53.3)	4 (80.0)	31			
CHEW	36 (72)	0 (0.0)	0 (0.0)	36			
JCHEW	11 (22)	0 (0.0)	0 (0.0)	11			
Total	50 (100)	45 (100)	5 (100)	100			

*Fishers exact test because some cell have less than 5.

Professional qualifications as relates to level of knowledge and the management of PPH shows that there is a significant association as well as significant relationship between level of knowledge and management of PPH in relationship with years of working experience with p-value <0.00001

respectively.

There is a significant association as well significant relationship between level of knowledge and management of PPH in relationship with years of working experience with p-value <0.00001 respectively.

Table 5. Associations between Years of working experience and level of knowledge and management of post partum hemorrhage (PPH) among skilled birth attendants.

Years of working experience	Low Knowledge	Moderate knowledge	High Knowledge	Total (%)	DF	X2*	P value
0-5	14(28.0)	0(0.0)	0(0.0)	14	8	134.78	0.0000
6-10	22(44.0)	0(0.0)	0(0.0)	22			
11-15	13(26.0)	0(0.0)	0(0.0)	13			
16-20	1(2.0)	14(31.1)	0(0.0)	15			
21≥	0(0.0)	31(68.8)	5(100)	36			
Total	50	45	5	100			

*Fishers exact test because some cell have less than 5.

4. Discussions

Findings from this study, the level of knowledge and management of post partum hemorrhage among skilled birth attendants in Primary Health Care of Jos North Nigeria, shows that 80.0% of Registered Nurses and Registered Midwives (RN/RM) found to demonstrate high level of knowledge in the management of PPH, this is in agreement with the finding of Mutunga *et al.*, 2015 which state that 90.9% of midwives could diagnose PPH, suture perineatears this is also in line with Faiza *et al.*, 2009 findings which state that 78% of Nurse Midwives have high knowledge of PPH and management skills required for handling of PPH, this may be due to their training which may not be the same with the CHEW and JCHEW who demonstrated 36% low and 11% low knowledge respectively [39], [40]. This is similar with the study which was done in Gambian by Bij de vaate *et al.*, 2002 traditional birth attendants in the prevention; recognition and management of PPH don't know the causes of excessive blood loss [41].

About 58.5% of the respondent indicated that they have seen woman with PPH at the primary health care centre of Jos north. This is in accordance with the finding of Olowokere *et al* 2013 who reported that 34.5% of most women with PPH cases are referred from primary health care centre, the different may be due to intervention strategies provided in handle PPH in western part of Nigeria which might not have be done in Jos north primary health [11].

20% of respondents indicated that, they have management protocol on PPH this is in agreement with World Health Organization (WHO) guide line for management of PPH which recommend aloose-leaf insert of this are path ways should be included for use as a wall chart [43]. Every primary health care should have guideline protocol for managing PPH before referral. 60% of respondent do not have management protocol for management of PPH at their clinic.

About 60% of respondent, have manage PPH at various primary care centre of Jos north, among the management skills for prevention and control of PPH, stated include; early

cord clamp after 3 minute, empty of bladder during third stage of labor, placing women in trendelenburg position and use of uterotonic. This is in agreement with World Health Organization (WHO) which outline guideline for management of PPH whenever as killed provider is assisting with the delivery, active management in administrative of auteronic soon after the birth of the baby, clamping of the cord following the observation of the uterine contraction at around 3 minutes and delivery of the placenta by controlled cord traction, following uterine massage [43].

53% respondent, have not applied anti sock garment on client. This is in agreement with Kolade *et al.*, 2014 which carry out thou a similar research in Western Nigeria which stated that 65% of midwives had never applied it on patient but have heard of it [35]. Reason may be that, there are no provisions for non-pneumatic anti shock garment as a first aid device that may assis two men to survive in case of delay transport and therefore receive definitive treatment.

In this study, 70% of the respondents indicate that patients with PPH are referral to secondary faculties this is in sharp contrast with Asume *et al.*, 2016 who reported only 21% of rural PHCs had good knowledge of referral; there as on may be due to years of working experience and continuous health education on the need for referral 30% of respondents don't referral patient with PPH [42]. There is an urgent need for training on referral system for combating PPH in primary health in resource limited settings.

84% of Respondents indicate that there is no provision for an ambulance or transportation in cases of emergencies this is in line with Chinomnso *et al.*, 2016 finding who reported that 22.9% respondents refusing referral to higher level of care due to lack of transportation in the primary health care [37]. Coeli *et al*, 1998, recommended a better communication and transport systems for delivery and orientation on rapid emergency respond [38].

5. Conclusion

In this study, we found that RN/RM have higher level of

knowledge and management of post partum hemorrhage among skilled birth attendants in primary health care of Jos North Nigeria. We also found that there is significant relationship between level of knowledge and professional qualification as well as significant relationship between level of knowledge and years of working experience. Thus, as the professional qualification and years of working experience increases, the level of knowledge of PPH increases and vice versa.

Recommendations

There should be annual training on PPH management for all skilled birth attendants in Primary Health Care since it is the first contact for all parturient women.

Every primary health care should have protocol leaflet on the wall to serve as a guide in managing PPH according to WHO, 2007 guidelines.

There is need for prompt referral system, orientation and education for all skilled birth attendants at Primary Health Care level.

Emergency transportation such as ambulance in every Primary Health Care centre in order to reduce maternal mortality rate is needed.

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