



# Knowledge and Practice of Nurse Midwives Regarding Management and Prevention of Postpartum Hemorrhage in Three Selected Teaching Hospitals-Khartoum State- Sudan 2014

## KEYWORDS

Nurse Midwives, Post-partum Haemorrhage, knowledge, practice.

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**ABSTRACT** Post-partum haemorrhage (PPH) is the major cause of maternal mortality worldwide and in Sudan contributed to 28% of the reported maternal mortality cases in 2013.

*Nurse Midwives being the first point of contact play a central role in addressing this global issue. This study was conducted aiming at study knowledge and practice of nurse midwives regarding management and prevention of postpartum haemorrhage in Khartoum State Sudan.*

*Methods:*The study utilized a cross-sectional design to elicit information on knowledge and practice of nurse/midwives in the management and prevention of post partum haemorrhage, 60 nurse/midwives were drawn from three selected hospitals ,interviewed and observed.

*Result :*The findings revealed that , participants have long experience varies from 11 to 30 years but only 30% of them received in service training about PPH. Nurse midwives generally had good knowledge about Post partum haemorrhage was (78%) . Their knowledge about assessment and management, sign, Prevention and definition, types, common causes were (84.2, 82.5, 82and 81.3 %) respectively less knowledge about complication and risk factors of PPH were 73.5 and 64.2% respectively. Practical aspects of nurse/midwives regarding prevention of PPH was (69.6 %).

*Conclusions:* The results from this study showed that NM had good knowledge regarding PPH prevention and management with satisfactory practice regarding prevention of PPH. The study highlight the need for continuous in-service training to updates NM knowledge and practice regarding management and prevention of PPH.Competency based standards need to be established for midwifery practice

## POSTPARTUM HEMORRHAGE

Postpartum hemorrhage (PPH) is an obstetrical emergency that can follow vaginal or cesarean delivery. It is a major cause of maternal morbidity, and one of the top three causes of maternal mortality in both high and low income countries, although the absolute risk of death from PPH is much lower in high income countries (1 in 100,000 deliveries in the United Kingdom versus 1 in 1000 deliveries in the developing world). Hemorrhage is the most common reason postpartum women are admitted to intensive care units and arguably the most preventable cause of maternal mortality. Timely, accurate diagnosis is important to initiate appropriate interventions (eg, drugs, surgery, and referral) and improve outcome [1,2].

The World Health Organization defines postpartum hemorrhage (PPH) as excessive bleeding from genital tract at any time following of delivery up to six weeks after delivery ,during vaginal delivery as blood loss of greater than 500 cc.(3) Alternative definitions of PPH as blood loss greater than 600 cc or greater than 1000 ccs caesarean section operation (4 )The effect of the blood loss is more important rather than the amount of blood, For clinical purposes any blood loss that has the potential to produce hemodynamic compromise is considered a PPH. Estimating blood loss is fraught with inconsistencies, it has been suggested that clinicians' subjective assessments may underestimate blood loss by as much as 50%.(5,6).

Definitions vary and are often based on inaccurate estimates of blood loss. Proposed alternate metrics for defining and diagnosing PPH include change in hematocrit, need for transfusion, rapidity of blood loss, and changes

in vital signs, all of which are complicated by the emergent nature of the condition. PPH is often classified as primary/immediate/early, occurring within 24 hours of birth, or secondary/delayed/late, occurring more than 24 hours post-birth to up to 12 weeks postpartum. In addition, PPH may be described as third or fourth stage depending on whether it occurs before or after delivery of the placenta respectively.(7).

The overall prevalence of PPH worldwide is estimated to be 6 to 11 percent, rates vary by data source and country as well as assessment method with a prevalence of 10.6 percent when measured by objective appraisal of blood loss and 7.2 percent when assessed with subjective techniques. A systematic review estimated prevalence of PPH with 500 mL of blood loss or more at 10.5 percent in Africa, 8.9 percent (5,8).

There are several possible reasons for severe bleeding during and after the third stage of labor: uterine atony , trauma,retained or adherent placental tissue, clotting disorders and inverted or ruptured uterus. More than one of these can cause postpartum hemorrhage in any given woman. Uterine a tony is the leading cause of immediate PPH (75–90 %) (9).

Postpartum hemorrhage remains the leading cause of maternal mortality and severe morbidity in Africa and around the globe. Maternal death from obstetrical hemorrhage in Sudan contributed to 28% of the reported maternal mortality cases in 2013. Uterine atony remains the leading cause of death (55%) in deceased women, followed by ruptured uterus (22.2%), retained placenta (16.7%) and birth canal injuries (5.6%), (10).

PPH is one of the leading causes of maternal mortality and morbidity worldwide and accounts for nearly one-quarter of all maternal deaths. [9]. Multiple studies have suggested that many deaths associated with PPH could be prevented with prompt recognition and more timely and adequate treatment. (11,12).

The most common etiology of PPH is uterine atony (impaired uterine contraction after birth), which occurs in about 80 percent of cases. Atony may be related to overdistention of the uterus, infection, placental abnormalities or bladder distention. Though the majority of women who develop PPH have no identifiable risk factors, clinical factors associated with uterine atony, such as multiple gestation, polyhydramnios, high parity and prolonged labor, may lead to a higher index of suspicion(13,14)Other causes of PPH include retained placenta or clots, lacerations, uterine rupture or inversion, and inherited or acquired coagulation abnormalities. (15,16,17,18,19).

Compared to expectant management, active management of the third stage of labour (AMTSL) is associated with reduced maternal blood loss, reduced postpartum hemorrhage, reduced postpartum anemia, reduced need for blood transfusions and a decrease in the incidence of prolonged third stage of labor. (19).

Postpartum hemorrhage is the leading cause of maternal deaths in developing countries

Prevention of PPH should begin in the antenatal period by assessing women's risk factors at every antenatal visit and then, in partnership with the women, planning care that identifies the most appropriate lead health care professional (20).

Midwives are central to the effective prevention, recognition and treatment of PPH. They need to be aware of the risk factors for this condition and take appropriate action when they are identified. They

should also be skilled in basic life support and have an understanding of the path physiology of hypovolemic shock. This knowledge must be used in conjunction with an understanding of women's social, cultural and psychological well-being. All health care providers providing maternity care require a range of life-saving skills to enable them to make a significant contribution to reducing PPH, maternal deaths and to promote safe motherhood

Research shows that a simple, inexpensive, effective, adaptable and evidence based practical technique known as active management of third stage of labor (AMTSL), effectively reduces the occurrence of PPH, caused by uterine atony by 60%. So knowledge, attitudes and practices of NM towards prevention and management of PPH include AMTSL is very important (13)

## PREVENTION of PPH

Antenatal and intrapartum risk factors should be identified and control Active management of the third stage of labour is recommended for all women. Synthetic oxytocin is the current drug of choice for active management of the third stage of labor. Active management of the third stage of labor (AMTSL) is a feasible and inexpensive intervention that can help save thousands of women's lives. AMTSL involves three basic procedures: the use of a uterotonic agent (preferably oxytocin) within

one minute following the delivery of the baby, delivery of the placenta with controlled cord traction, and massage of the uterus after delivery of the placenta. (WHO) (13).

Early recognition, routine observation of all postpartum women for blood loss, fundal tone, BP and pulse. This is especially important during the first 4 hours post birth.

Volumes of blood loss may cause haemodynamic compromise. Fundal massage following birth of the placenta continued uterine contraction should be confirmed using fundal palpation. Fundal massage may sometimes be necessary to maintain uterine tone. Checking the placenta and membranes for completeness and assessment for trauma are very important.

The nurse/midwife has a vital role to play in the achievement of the millennium goals of reduction of child mortality, improving maternal health and combating HIV/AIDS (21).

## Justification:

PPH is one of the most alarming and serious emergencies, which Nurse midwives may face first and may be the only professional person present when hemorrhage occurs, her prompt and competent action will be crucial in controlling blood loss and reducing the risk of maternal morbidity or even death.

Skillful nurse midwives in Sudan can play an important role in prevention and risk reduction of PPH.

Currently, very little is known about the actual knowledge and practice of NM regarding management and prevention of PPH. The aim of this study was to provide base line data about knowledge and practice of NM regarding prevention and management of PPH and to put suitable recommendation to fulfill the gap.

## General objective:

To study knowledge and practice of nurse midwives regarding management and prevention of postpartum hemorrhage

## Specific objectives:

- To assess NM knowledge about PPH.
- To assess knowledge of NM regarding prevention of PPH.
- To assess performance of NM regarding management and prevention of PPH.
- To compare their knowledge with practice regarding prevention of PPH .

## Methodology:

The study utilized a cross-sectional design to elicit information on knowledge and practice of nurse/midwives in the management and prevention of post partum haemorrhage, 60 nurse/midwives were drawn from three selected hospitals ,interviewed and observed check list during march-may 2014.

Table(1) Socio demographic characteristic of the participants (n=60)			
1	Years of experience	> 10 11-20 21-30 < 30	16.3 38.8 32.7 12.2
2	Received any Training	58	96.6
3	Received any Training about PPH	18	30

Table (2) Knowledge of the participant about definition, Types and common causes of PPH (n=60)		
No	Items	Correct answer%
1	Postpartum hemorrhage is bleeding from vagina (500 or more after vaginal delivery.	85.7
2	Postpartum hemorrhage is bleeding 1000ml or more after cesarean birth	67.3
3	Types of postpartum hemorrhage- Primary.	95.9
4	Secondary. Type of postpartum hemorrhage	91.8
5	the period of primary postpartum hemorrhage During 24hrs after delivery.	77.6
6	the period of secondary of postpartum hemorrhage During 6 weeks after	73.5
7	Main cause of postpartum hemorrhage is unknown	51
8	Atone of the uterus.	95.9
9	Traumatic hemorrhage in labor.	87.8
10	Retained products of the placenta.	93.9
11	Blood coagulation disorder	73.5
	Mean	81.3

Table (5) Knowledge of the participant about assessment and management of PPH (n=60)		
No	Items	Correct answer%
1	Assess the blood loss Directly by kidney dish.	53.1
2	Pads count and weight.	77.6
3	Observe vital signs.	65.5
4	management of postpartum hemorrhage Call for help	87.8
5	Try control of bleeding by massage	100
6	I.V fluid	93.9
7	Follow up after bleeding has stopped Observed amount of the blood.	100
8	Measure pulse and other vital signs.	89.8
9	The mother remains in labor room until become stable.	89.8
	Mean	84.2

Table (4) Knowledge of the participant about sign of PPH (n=60)		
No	Items	% Correct answer
1	Signs of postpartum hemorrhage is visible outside Vaginal bleeding	95.9
2	Pallor.	93.9
3	Rising pulse rate.	59.2
4	Falling blood pressure.	69.4

5	Alter level of consciousness.	79.6
6	Enlarged uterus as it fills with blood or blood clots.	87.8
7	Maternal collapse	91.8
	Mean	82.5

Table (3) Knowledge of the participant about risk factors of PPH (n=60)		
No	Items	Correct answer%
1	Inactive management of Third stage of labor.	63.3
2	Fibroids .	71.4
3	Placenta previa.	81.6
4	Previous PPH.	71.4
5	Over distended uterus.	83.7
6	Episiotomy.	69.4
7	Use of magnesium sulfate in pre eclampsia.	34.7
8	Induction or augmentation of labor.	51
9	Infection	51
	Mean	64.2

Table (6) Knowledge of the participant about Prevention of PPH (n=60)		
No	Items	Correct answer%
1	Make sure the bladder is empty.	79.6
2	Follow up of contractions every 5 minutes.	85.7
3	Instruct the mother not to push prematurely.	93.9
4	Avoid the routine episiotomy.	100
5	Episiotomy should be timely with crowning of the fetal head.	100
6	Delivery of the baby slowly with contractions.	91.8
7	Support flexion point during labor to prevent perineum laceration.	81.6
8	Support perineum area by towel.	73.5
9	prohibition of Fundal pressure.	83.7
10	Register time of delivery to know time of placenta delivery.	61.2
11	Assessment of uterine tone after delivery.	65.3
12	Observe the signs of placenta delivery.	93.9
13	Delivery of the placenta after completely separated and the uterus contract.	95.9
14	Register time of placenta delivery.	55.1
15	period of delivery of the placenta Half an hour	71.4
16	Checking membranes and parts of the placenta after deliveries	85.7
17	Give an oxytocic drug.	93.9
18	Assessment of lochia.	65.3
19	Inspection of the perineum after delivery.	77.6
20	Proper suturing of episiotomy.	95.9
21	Provide instructions about episiotomy, uterine tone, and prevention of infection	71.4
	Mean	82

Table (4-7) Knowledge of the participant about complication of PPH (n=60)

No	Items	Correct answer%
1	Immediate complication of postpartum hemorrhage is Hypovolaemic shock	100
2	Anemia.	95.9
3	Injury to the uterus	73.5
4	Shock.	93.9
5	Infection.	46.9
6	Removal of the uterus	61.2
7	Sub involution.	71.4
8	Thrombophlebitis.	65.3
9	Embolism	53.1
	Mean	73.5

Table (4-8) General Knowledge of the participant about PPH (n=60)

No	Items	Correct answer%
1	Knowledge of the participant about definition, Types and common causes of PPH	81.3
2	Knowledge of the participant risk factors of PPH	64.2
3	Knowledge of the participant about sign of PPH	82.5
4	Knowledge of the participant about assessment and management of PPH	84.2
5	Knowledge of the participant about Prevention of PPH	82
6	Knowledge of the participant about complication of PPH	73.5
	Mean	78

Table (9) Practice of the participant about prevention of PPH (n=60)

	Items	Done proper by %
	Empty the bladder	75
	Monitor of contractions	50
		75
	Avoid the routine episiotomy	50
		65
	Delivery of the baby slowly between the contraction	93.3
	Support flexion point during labor to prevent perineum laceration	71.7
	Support perineum area	68.3
	Fundal pressure prohibit	73.3
	Register time of delivery to known time of placenta delivery	60
	Give oxytocin drug	96.7

	Observe the sign of placenta delivery	91.7
	Allowing the placenta to separate and the uterus to contract before attempting to deliver the placenta	90
	Register time of placental delivery	41.7
	Checking parts and membrane after placenta delivery.	76.7
	Proper Suturing of the episiotomy	90
	Inspection of perineum after delivery	63.3
	Assess after delivery for contractions	68.3
	Assessment of blood lost and Assessment of lochia	61.7
	Provide instruction about episiotomy, uterine tone, and prevention of infection	30
	Mean	69.6

### Discussion

Severe bleeding is the single most important cause of maternal deaths worldwide

The present study has showed high level of Knowledge about PPH among nurse midwives (table-8) as revealed by the study knowledge of strategies used in the prevention and management of postpartum hemorrhage by midwives in Bayelsa state, Nigeria (22) and similar to Midwives Knowledge at Baghdad city in Iraq (23) and agreed with study Knowledge, attitudes and practices of midwives towards active management of third stage of labor to preventing post partum hemorrhage (24). This study illustrated that knowledge of NM regarding causes of PPH and assessment were high (table-2 and 5) which is very crucial in determining the type of management but opposite to this what mention in the study conducted to assess the knowledge, attitudes, practices and the potential role of trained Gambian traditional birth attendants (TBAs) in the prevention, recognition and management of postpartum hemorrhage, TBAs did not know the causes of excessive blood loss (25) and in study of An Assessment on Nurse-Midwives Knowledge in Bangladesh which revealed a vast gap in their knowledge (26).

Definite cause for PPH is unknown, early determination of the risk factors give the clue for prevention. Knowledge of the NM about risk factors of PPH was (64.2%) which is not enough to helped them in risk reduction for PPH

Prevention of PPH is the main stay and corner stone to achieve MDG5, in this study Practice level of the nurse midwives about prevention of PPH was (69.6%) (Table -9) which is not enough if compare with their knowledge about prevention of PPH (Table -9) but better than what found in a case study in Mulago Hospital (27) and in Nigeria (28). In this study NM not contributed enough in Provision instruction about episiotomy, uterine tone and prevention of infection to their clients. although their knowledge in this area was good (71%) (table-6) but only 30% were offered it (Table -9).

### Conclusions:

The results from this study showed that NM had good knowledge regarding PPH prevention and management with satisfactory practice regarding prevention of PPH.

**Recommendations:**

The studies highlight the need for continuous in-service training to updates NM knowledge and practice regarding management and prevention of PPH. Competency based standards need to be established for midwifery practice plus support supervision.

There is need for improved performance through structured educational intervention. Resources needed for practice should always be made available and the environment should be much more conducive for practice.

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