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Assessment of Incidence and Factors associated with Postpartum Hemorrhage among Women delivering at Kampala International University Teaching Hospital Bushenyi District

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ABSTRACT

Postpartum Hemorrhage (PPH**)** is a blood loss that is greater or equal to 500mls in 24 hours after delivery by Spontaneous vaginal delivery (SVD), or when blood loss is greater or equal to 1000mls after Caesarean section within 24 hours. Postpartum hemorrhage is one of the leading causes of maternal death in Africa and accounting for almost a half of the total number of deaths in these regions and in sub–Saharan Africa is estimated to be 10.5 %. The aim of this study was to determine the prevalence and factors associated with postpartum hemorrhage. This study employed a cross sectional descriptive study with a sample size of 36 patient of the age ranging from 19 to 45 in KIU-TH through examining the risk factors associated with this condition of PPH. Data was collected by administering questionnaires to all those who met the inclusion criteria in the study. The data collected was analyzed using Microsoft Excel and then presented inform of percentages frequencies/numbers using tables and charts. From the demographics obtained, it showed that women aged between 36-45years were mainly affected while the least affected age were 19-26 years. According to level of education, 41.7% who had never gone to school were the most affected group and the least affected were 8.3% who attended tertiary and university levels. Most affected mothers were the married by 83.3% and unmarried least affected by 16.7%. Most of the affected mothers were of high parity 44.4%, 56% had delivered by caesarian section and 55.6% attributed to induced labour. Parity showed greatest impact since some women with lower parity were less affected. Results showed that there is inadequate knowledge about the etiology of PPH of which 72% were aware about PPH existence and 28% did not have knowledge about it. Therefore, adequate prerequisites are required to perform PPH awareness and family planning to the mothers both in the hospital and the community at large.

Keywords: Postpartum Hemorrhage, Parity, labour, maternal death.

INTRODUCTION

Postpartum Haemorrhage (PPH) is considered as one of the leading causes of maternal mortality [1]. Mothers who carry pregnancies greater than 20 weeks gestation are at a risk of PPH and its complications. When PPH was first observed its effective prevention occurred when the three components of active management of third stage of labor were first described in 1962: the administration of a prophylactic Uterotonic drug, early cord clamp and cutting and controlled cord traction. By 1980's the routine counseling and testing of active management of third stage of labor showed a significant reduction in the incidence of PPH [2]

Globally PPH has been associated with risk factors such as past history of PPH, multiple pregnancy, fetal macrosomia, prime gravidity, grand multi-parity, old age greater than 40 years, preterm births,

HIV/AIDs and intra uterine fetal deaths [3].

The maternal mortality rate due to pregnancy related conditions in United States (US) has been suggested to be 7 to 10 women per 100,000 live births and an approximation of 8% of these deaths is due to PPH, and in industrialized countries PPH is suggested to be one of the top three causes of maternal mortality [4]. Thus, global prevalence of PPH is 6% and considered as the greatest burden experienced in low-income countries, Uganda inclusive [5].

Maternal mortality can be as a result of obstetric complication directly during pregnancy and or after delivery or from preexisting diseases indirectly that weaken the body immune system because of their chronicity thus ending into death. Direct causes can include some of the following such as antepartum and postpartum bleeding, preeclampsia, sepsis, prolonged labor, obstructed labor and complications related to labor, account for the great majority of maternal deaths in developing world [6]

WHO revealed that postpartum hemorrhage is one of the leading cause of maternal death in Africa and Asia accounting for almost a half of the total number of deaths in these regions and in sub Saharan Africa is estimated to be 10.5 % [7] .

In Uganda PPH has been attributed to have cause 25% of all maternal deaths [5]. Millennium Development Goal 5 focuses on healthy of mothers to reduce the maternal mortality rate by 75% between 1990 and 2015 [8]. According to Doctor [9], PPH is an emergency condition characterized by excessive bleeding after normal or cesarean delivery. However the commonest causes to PPH include retained placental tissues or other products of conception, lower genital tract trauma and thrombosis [10][11][12].

Problem Statement

In Uganda, postpartum hemorrhage has been attributed to have caused 25% of all maternal deaths [5]. Millennium Development Goal 5 focuses on healthy of mothers to reduce the maternal mortality rate by 75% between 1990 and 2015 [8].

Maternal mortality in Uganda accounts for 505/100000 live births with postpartum hemorrhage contributing the highest percentage 26% and the commonest cause being uterine atony ranked 60% [9]

Therefore, the government of Uganda together with the ministry of health have setup clinical guideline that are followed by all health facilities during natal periods in collaborating with NGOs and partnering with private hospitals, to offer services to all pregnant mothers thus minimizing chances for complications after delivery like PPH [5]

Despite all these efforts by Ugandan government, PPH still remains a great burden to the health of pregnant mothers in Uganda, therefore the need for this study to determine the prevalence and factors associated with PPH and the outcomes will draw attention for possible solutions.

Aim of the study

To assess the prevalence and factors associated with postpartum hemorrhage among women delivering at Kampala International University Teaching Hospital.

Specific Objectives

(i) To determine the prevalence of postpartum haemorrhage among women delivering at Kampala International University Teaching Hospital.

(ii) To assess the patients' factors associated with postpartum hemorrhage among women delivering at Kampala International University Teaching Hospital.

(iii) To assess the health service factors associated with postpartum Haemorrhage among women delivering at Kampala International University Teaching Hospital.

Research Questions

(i) What is the prevalence of postpartum hemorrhage among women delivering in Kampala International University Teaching Hospital?

(ii) What are the patients' factors that associated with postpartum hemorrhage among women delivering at Kampala International University Teaching Hospital.?

(iii) What are the health service factors that associated with postpartum Haemorrhage among women delivering at Kampala International University Teaching Hospital?

Significance

Postpartum hemorrhage in developing countries has been increasing however much the government's efforts and other stake holders to reduce on its impact, whose maternal mortality rate is in excess of 1000 women per 100,000 live births [5].

Knowing the patient factors that predispose mothers to PPH will create an alarm to heath person to carryout community out reaches and health education talks via mass media.

This study has also come up with hospital factors that predispose mothers to PPH so as to upgrade and improve on the working environmental and evaluating their skills.

Uganda being a developing country, information obtained from this research will help health personnel particularly in KIU-TH to sensitize women on the dangers and causes of PPH. The findings will act as an important tool by availing knowledge of risk factors to inform public interventions for PPH control and to the clinicians, identifying risk factors in Antenatal Care (ANC) and intra partum periods may provide an opportunity for timely interventions to prevent PPH. From this study, stake holders and other concerned shall use the knowledge of the objectives to improve on the safe motherhood and pregnancy status there by meeting one of the pillars of Millennium Development Goal.

This information will be disseminated to the local authorities; District Health Officer DHOs, Health Inspectors, LCs, NGOs and In-charges of Health Centers around the town with a hope that they will take up their role towards implementation of the recommendations herein.

METHODOLOGY

Study Design

The study was a descriptive cross sectional study design.

Study Area

Kampala International University Teaching Hospital [KIU-TH] is situated on about 70 acres of land at Ishaka town in Bushenyi District, along Mbarara –Kasese Road in Western Uganda.

The presence of the university has strongly led to the development of various businesses in Ishaka town, with the students and staff of the university comprising of the major clientele of these businesses. Businesses range from boutiques, restaurants, supermarkets, bars, and night clubs.

Bushenyi District has a population of 241,500 people made up 124,000 females according to the projected population estimates of 2014 of which KIU-TH maternity receives about 40 pregnant mothers in a month.

The hospital receives about ten mothers with complaints concerning Postpartum Haemorrhage every week where most of them are above 30 years of aged peasant farmers. These mothers most of them have multiple pregnancies with parity greater than one and have undergone caesarian section.

Variables: Dependent and Independent

The prevalence and factors associated with PPH was the dependent variable of the study while the independent variables were: Socio-demographic factors such as: age, occupation, education, knowledge on PPH, marital status and parity status, Obstetric factors including: mode of delivery, prolonged labour and place of delivery. Patient's characteristics including: knowledge on PPH, facility factors including availability of adequate equipment, finance, distance and hygiene.

Study Population

The study focused on the mothers who presented to KIU-TH from Bushenyi, Mitooma, Rubilizi, Sheema and Buhweju districts. According to the In-charge maternity ward, the hospital gets about 10 mothers with postpartum haemorrhage in a week, which gave a reflection of PPH. The majority of people in Bushenyi are small scale subsistence farmers, earning less than 1 dollar per day, with main cash

crop being coffee and food crop is matooke 2009 District records.

Sample Size Determination

The sample size was determined using [11] from the specified population and was limited to mothers diagnosed with postpartum haemorrhage at KIU-TH. The target population was 40 mothers who visit KIU-TH. By using the Morgan table sample size was 36.

Therefore: $n = 36$

Sampling Methods

To determine the prevalence of postpartum haemorrhage, a systemic sampling method using in-patient numbers was used. To determine the patient and the hospital factors a questionnaire were distributed among the patients.

Inclusion and Exclusion Criteria

Inclusion Criteria

Every mother who had been diagnosed of PPH and found in maternity ward at time of the interview was included provided she was willing to take part in the study.

Exclusion Criteria

Mothers who were mentally ill and critically ill were excluded to avoid irrelevant information to the study.

Data Collection Methods

The data was collected using a questionnaire, which was a mixture of structured questions. The data was collected by the researcher herself and ensured that the person who filled the questionnaire met the inclusion criteria. A record review tool was used to collect relevant information about hospital factors to determine the prevalence. Data was collected for two months since the hospital works every day.

Methods of Data Analysis

The data for prevalence and the factors were analyzed using Microsoft excel manually and interpreted into average and percentages and presented on tables and pie charts.

Data Presentation Methods

The data collected was presented inform of charts, and tables depending on the data that was analyzed.

Ethical Consideration

I sought approval from KIU authorities and the research committee of KIU western Campus, who in turn upon approval, granted me permission to conduct the study with an introductory letter. The letter was addressed to the medical Director KIU-TH who introduced me to the in charge of the maternity. Verbal consent was sought from mothers of PPH to interview them and also confidentiality was strictly observed at all stages of research.

RESULTS

Respondents Demographic Data

Data collected in this study indicates that the most affected age group is from 36 to 45 (44.4%) 16, most of them being married 30(83.3%), majority were from Muslim religious affiliation 15(41.7%), by tribe the highest number of participants were banyankore 20(55.5%). Furthermore, most participants had never gone to school 15(41.7%) which rendered majority of them peasants 18(50%) by occupation.

Table 1: Showing the socio-demographic characteristics of the study of mothers diagnosed of postpartum hemorrhage in KIU-TH (n=36)

Variable	frequency	Percentage (%)
Age (years)		
19-25	8	22.2
26-35	12	33.3
36-45	16	44.4
Marital status		
Married	30	83.3
Un married	6	16.7
Religion		
Muslims	15	41.7
Protestants	12	33.3
Catholics	5	13.9
Others	4	11.1
Tribes		
Banyankole	20	55.5
Baganda	10	27.8
Basoga	4	11.1
Others	2	5.6
Occupation		
Peasants	18	50
Traders	12	33.3
Teachers	2	5.6
Unemployed	4	11.1
Education level		
Nil	15	41.7
Primary	10	27.8
Secondary	5	13.9
University	3	8.3
Tertiary	3	8.3

PREVALENCE FOR POSTPARTUM HEMORRHAGE AMONG WOMEN DELIVERING IN KIU-TH ISHAKA BUSHENYI

Prevalence of Postpartum Hemorrhage

Most of the mothers negative about PPH 26(72%) and a few numbers of them were positive about PPH and these accounted for 10(28%) only of the total number of respondents.

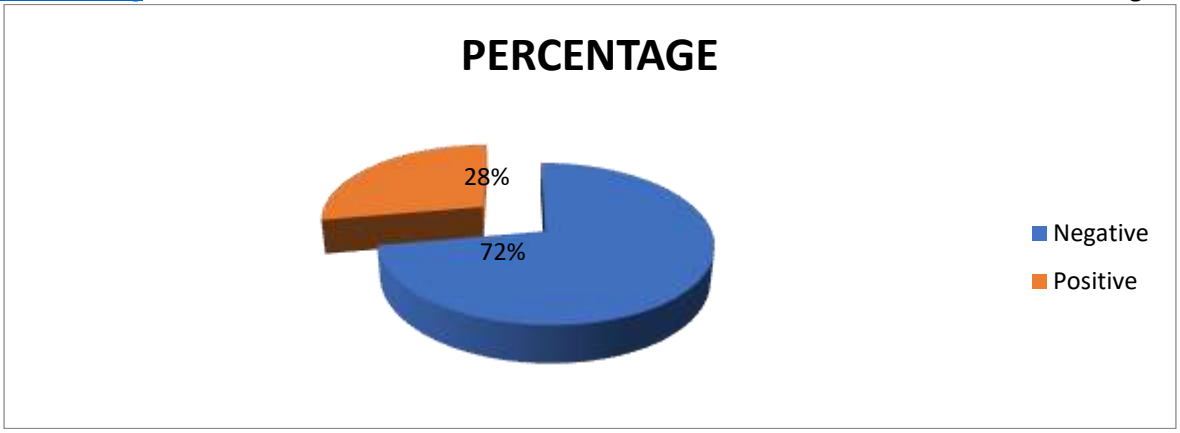

Figure 2: Showing prevalence of PPH among women.

PATIENT FACTORS ASSOCIATED WITH POSTPARTUM HEMORRHAGE AMONG WOMEN DELIVERING IN KIU-TH, ISHAKA BUSHENYI

Mothers who contributed the largest number had had more than four deliveries 16(44.4%). Most of them attributed the occurrence of PPH to multiple pregnancy which accounted for 16(44.4%), 32(88.9%) of the total number of mothers interviewed had had their deliveries at health center.

Table 2: Showing patient factors.

Variable	Frequency	Percentage
Number of deliveries		
1	10	27.8
2	5	13.9
3	5	13.9
>=4	16	44.4
Associated factor		
Multiple pregnancy	16	44.4
Previous PPH	10	27.8
Antepartum hemorrhage	8	22.2
Don't know	2	5.6
Place of delivery		
Health center	32	88.9
Home	4	11.1

HOSPITAL FACTORS ASSOCIATED WITH POSTPARTUM HEMORRHAGE AMONG WOMEN DELIVERING IN KIU-TH, ISHAKA BUSHENYI

Majority of the mothers had delivered by cesarean section 20(56%). The hospital associations towards PPH included induced labor 20(55.6%) which ranked as the highest, Majority of mothers were assisted by doctors 16 (44.4%).

Table 3: Showing hospital factors

Variable	Frequency	Percentage (%)
Patient mode of delivery		
C/S	20	56
SVD	16	44
Assistant during delivery		
Doctor	16	44.4
Midwife/Nurse	15	41.7
TBA	5	13.9
Associated factor		
Induced labour	20	55.6
Instrumental delivery	1	2.8
Retained placental products	5	13.9
Episiotomies	10	27.8

DISCUSSION

A total number of 36 respondents were interviewed at KIU-TH from 21st of April to 4thof June of the year 2017.

Prevalence

Most mothers 26(72%) were negative about PPH hence 32(88.9%) had delivered from health centers 4(11.1%) had delivered from home whilst 10(28%) were positive about PPH. In the previously investigated research, 70% had delivered from home [12].

Hospital Factors

Majority of deliveries were done by caesarian section 20(56%) under assistance of doctors 16(44.4%) and other deliveries were by spontaneous vaginal delivery 16(44%) of which 15(41.7%) were assisted by mid wives and 5(13.9%) by TBAs. Induced labour ranked 20(55.6%) of all the hospital associated factors for PPH followed episiotomies 10(27.8%) in addition to maternal age and mothers' parity. Cesarean section and induced labour were the major risks to PPH among mothers which coincide with study done by [13] [15-18]. This could be as a result of doctors handling emergencies and complicated cases aiming to save lives of either one or two (mother and the baby).

Patient Factors

The major cause of PPH to mothers was multiple pregnancy which ranked 16(44.4%) followed by previous history of PPH 10(27.8%). These findings are comparable to the findings of [14], this because having more than fetus in a mother's womb tend to over stretch it thus losing its tonicity failing to arrest bleeding after delivery.

Mostly affected mothers were those of parity greater or equal to four 16(44.4%) while the least affected were the prime gravid 10(27.8%). These findings differ from the study done by [15] indicating that the list affected were the multi gravid 3.8% and most affected were the prime gravid 24.4%. This could be due to negligence of multi gravid mothers since they think that they are now used to delivering and tend to neglect ANC services where they can identify risks to PPH [19-24]

Place of delivery also complicates delivery; as most mothers in my findings had delivered from health centers 32(88.9%) as compared to those who had delivered from their homes 4(11.1%). This differs from the findings done by [15], were mothers who had delivered from homes ranked 85.3% and those from hospitals were 14.7%. This difference may be due to the little awareness mothers had before about PPH [23][25][[26][27][28][29].

Strength and Weaknesses

My study was being facilitated and helped by nurses and in charge maternity to archive my goal. However the sample size was insufficient and this may affect the generalization of the findings to other settings where the patient numbers are large. However, the clear outcome variables were captured from hospital records.

CONCLUSION

The prevalence of postpartum haemorrhage was 28%, mostly among women of parity greater or equal to four.

Most mothers who presented with PPH had delivered by Caesarian section 56%, and others 44% delivered spontaneously, in addition to induced labour and episiotomies. Multiple pregnancy and previous history of PPH are also noted factors, this is comparable to the findings of [14]. Therefore, induced labor and caesarean section, multiple pregnancies and multiparity, together with previous history of PPH were the major factors for Postpartum hemorrhage among women delivering in KIU-TH.

Recommendations

From the findings of this study, the following recommendations can be drawn;

Prevalence factors

There is more need to Educate the community more about safe and timely delivery by skilled personnels for pre pregnant mothers and those who are pregnant generally women of child bearing ages through more community outreaches by community health workers and Village health teams.

According to the identified factors, health workers should put an eye on such mothers during labor to prevent PPH occurrence.

Awareness of mothers to have routine ANC services for early detection of some of the risk factors.

Hospital factors

Government through the Ministry Of Health should partner with hospitals creating affordable costs to mothers to render them services during pregnancy and during postpartum periods so that they can access when a problem arise.

Management protocol should be well defined and blood transfusion services should be made accessible so as to deal with severe PPH. The need to avail knowledge on Antenatal attendance for screening and use of skilled delivery attendants who observe safe delivery techniques like controlled cord traction.Increase on recruitment and salary payment to health workers in time to motivate their work.

Patient factors

Emphasis to be put on to mothers by Mother and Child Health clinics (MCH) educating them about Family planning methods as this gives time for the uterus to regain its tonicity.

Mothers should be strongly advised to go for ANC visits at least four times during the pregnancy so as to assess for all risks and do blood grouping in case PPH occurs blood is easily accessed.

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