

Original Article

Sociodemographic And Obstetrics Characteristic Of Patients With Postpartum Hemorrhage In A Tertiary Hospital In Niger Delta: A Five-Year Retrospective Study

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ABSTRACT

Post-partum haemorrhage (PPH) is a major cause of maternal mortality, particularly in developing countries like Nigeria. Efforts must be made to mitigate its occurrence. This study assessed the prevalence of PPH, demographic characteristics, and maternal outcome of patients with PPH in a tertiary health care in Delta State, Nigeria from January 1 2020 to December 31, 2025. Patients, who delivered vaginally, and those managed for post-partum haemorrhage were obtained from records in labour ward/triage of the department of Obstetrics and gynaecology at the Delta State University Teaching Hospital, in DELSUTH from January 1st 2020 to December 31st 2025. Ethical approval for this study with reference number HREC/PAN/2024/021 was obtained from the Health Research and Ethics Committee in DELSUTH. Data analysis (mean and standard deviation) were calculated using SPSS version 22. During the study period, a total of 894 women had vaginal delivery and 30 of these women were managed for PPH. The prevalence for PPH in this study was 3.4%. Half of the population were between 30 to 39 years of age; the mean age of the participants was 28.7 ± 7.6 years. Two deaths (6.7%) resulted from PPH during the study period and 28 (93.3%) survived. PPH is largely preventable, and efforts should be made to implement measures to curb this menace. Health workers should be trained on the management of PPH, and refer patients early, to reduce the resultant maternal morbidity and mortality.

Keywords: DELSUTH, Maternal Mortality, Obstetric, Post-partum Haemorrhage

INTRODUCTION

Labour is a dynamic process, as a low-risk woman may suddenly become high-risk¹. No woman should die from the process of child-birth. However, in developing countries, like Nigeria, women still die from this labour process due to complications like postpartum haemorrhage that may occur following delivery^{2,3}. Post-partum haemorrhage (PPH) refers to bleeding from the genital tract after delivery of the baby and can be divided into primary PPH and secondary PPH⁴. Primary PPH refers to bleeding of greater than 500mls after vaginal delivery or bleeding significant enough to cause maternal hemodynamic instability within the first 24 hours while secondary haemorrhage refers to the bleeding that occurs after 24 hours of vaginal delivery⁵. Of the 58,000 maternal deaths that were reported in Nigeria in 2015, more than one-fifth were related to PPH⁶. This might be due to the poor knowledge and attendance at antenatal care, poor management of third stage of labour, use of the ill-equipped and poorly trained Traditional Birth Attendants (TBAs) by these mothers and lack of

medication(uterotonics) in most hospitals⁷.

Common causes of post-partum haemorrhage include factors due to the tone, tissue, trauma, or thrombin⁸. The tone in PPH refers to uterine atony, which is the commonest cause of PPH responsible for about 70 – 80% cause of primary postpartum haemorrhage; the tissue refers to a retained product of conception or placenta; trauma refers to injuries during childbirth including cervical laceration while thrombin refers to coagulation disorders⁹. Occasionally, there might be profuse bleeding in the presence of a contracted uterus, in this case other aetiology like cervical lacerations should be suspected.

Resuscitation measures include administration of isotonic crystalloids, use of uterotonics like intravenous oxytocin, administration of tranexamic acid; these are done concurrently while rapid assessment to know the aetiology continues⁸. Other procedures to manage PPH include repair of genital tract laceration, use of compressive sutures, uterine artery ligation, internal iliac artery ligation, uterine artery embolization, and hysterectomy¹⁰.

Tragedy sets in if the above resuscitation measures aren't instituted early. Rapid initiation depends on the equipping

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and staffing of the place of delivery, as well as early presentation of patients to secondary or tertiary facilities¹. Those women, who presents early, are resuscitated, and might be referred to as a near-miss². Because outcome varies, this study demonstrated the prevalence of women with PPH, their socio-demographic characteristics, and the maternal outcome over a period of five years.

MATERIALS AND METHODS

Study Design and Location

This was a retrospective descriptive study carried out in Obstetrics and Gynaecology Department in Delta State University Teaching Hospital, Oghara. The hospital is owned by Delta State Government and its located at Ethiopie west local government area in Delta State. They provide specialist care to patients, and serve as major referral centres to Delta state and neighbouring towns in Edo, Rivers and Bayelsa States.

Study Population

The study population comprises of all patients that had spontaneous vaginal delivery within the study period in DELSUTH.

Study Duration

This study was done between January 1 2020 and December 31 2025.

Method of Data Collection

Data of patients, who had post-partum haemorrhage following spontaneous vaginal delivery, were obtained from records in labour ward/triage of the department of Obstetrics and Gynaecology, in DELSUTH were included in the study. All case files/ obstetric clinic and ward registers of relevant patients were retrieved and reviewed. Confidentiality was ensured as both patient names, phone numbers, and other identifiers were not taken nor exposed. Variables that were described include age, marital status, occupation, level of education, parity, booking status, patient survival. Data was collected using a pre-designed proforma. Folders already used for the study were marked to avoid getting data twice from the same folders.

Inclusion Criteria: Patients with excessive vaginal bleeding within 24 hours following child birth and patients with excessive vaginal bleeding between 24 hours and 42 days of delivery.

Exclusion Criteria: Those with vaginal bleeding beyond six weeks of gestational age & those who had cesarean section.

Data Analysis

Data was analysed using SPSS version 22. Categorical variables were summarised as frequencies and percentages and quantitative data were summarized as mean and standard deviation.

Ethical Consideration

Permission to assess case files/records was obtained from the hospital management. Ethical approval was obtained from the Health Research and Ethics Committee in DELSUTH; (the approval number is HREC/PAN/2024/021).

RESULTS

During the study period, a total number of 894 women had vaginal delivery in Delta State University Teaching

Hospital (DELSUTH), Oghara and 30 of these women were managed for PPH. Half of the population were between 30 to 39 years of age (15{49.9%}); the mean of age of the participants were 28.7 ± 7.6 years. The majority 22 (73%) of the study population were married, and the highest level of education by the participants was secondary 19(63.3%). The most common occupation was trading 18(60%) (table 1). The prevalence of PPH from this study was 3.4%.

Table 2 shows that the majority of the women were in the multiparous category 13(43.3%) and were also unbooked 28(93.3%). Most of the patients 17(56.6%) with primary postpartum heamorrhage had atony. Majority 17(56.7%) of the labor process were not supervised by a medical personnel.

Figure 1 shows that 2(6.7%) of the patient had maternal mortality while 28(93.3%) of the patient survived.

Table 3 shows the association between occurrence of PPH and sociodemographic and obstetrics characteristics. There was statistical significant relationship between parity and booking status when compared with occurrence of PPH, however, there was no statistical significant difference when age, level of education (LOE) and health personnel that supervised labor where compared with occurrence of PPH.

Table1. Socio-demographic characteristics of Participants with PPH.

VARIABLES	FREQUENCY (N=30)	PERCENTAGE (%)
Age Group		
15-19	5	16.7
20-24	5	16.7
25-29	3	10.0
30-34	11	36.6
35-39	4	13.3
40-44	2	6.7
Marital Status		
Married	22	73.3
Single	8	26.7
Occupation		
Trading	18	60.0
Apprentice	1	3.3
Hairstylist	2	6.7
Seamstress	3	10
Farming	3	10
Unemployed	3	10
Educational Level		
None	5	16.7
Primary	6	20.0
Secondary	19	63.3
Tertiary	0	0.0

Table 2. Obstetrics features of the study participant with PPH.

VARIABLE	FREQUENCY (N=30)	PERCENTAGE (%)
Parity		
Primiparous	10	33.3
Multiparous	13	43.3
Grandmultiparous	7	23.3
Booked in DELSUTH		
Booked	2	6.7
Unbooked	28	93.3
Supervision of Delivery by Midwife/Doctor		
Yes	13	43.3
No	17	56.7
Cause of PPH		
Uterine Atony	17	56.6
Genital Tract Laceration	9	30
Retained Placenta	2	6.7
Genital Tract Laceration and Retained Placenta		
	2	6.7

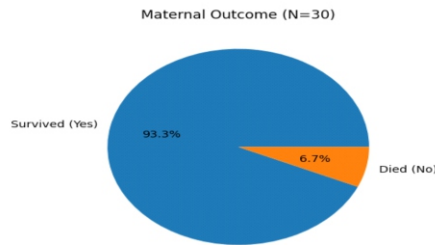


Figure 1: Maternal Outcomes of the study population

Table 3: A comparison between the occurrence of PPH with the socio-demographic and obstetrics characteristics of the study participants.

Characteristics	Primary PPH		Secondary PPH		χ^2/F	p-value
	n (%)					
Age (years)	15-19	4 (14.3)		1(50)	12.775	0.120
	20-24	5 (17.9)		0(0)		
	25-29	3 (10.7)		0(0)		
	30-34	11 (39.3)		0(0)		
	35-39	4 (14.3)		0(0)		
>40	1(3.6)		1(50)	3.401		
Parity	Nullipara	7(31.8)		3(37.5)	9.142	0.001
	multipara	13(59.0)		0(0)		
	Grandmulti	2(9.1)		5(62.5)		
LOE	None	5 (18.5)		0(0)	1.526	0.822
	Primary	5 (18.5)		1(33.3)		
	Secondary	17 (63.0)		2(66.7)		
	Tertiary	0(0)		0(0)		
Booking Status	Booked	2 (7.4)		0(0)	1.045	0.001
	Unbooked	25 (92.6)		3(100)		
Supervision by health care personnel	Yes	13 (46.4)		0(0)	2.814	0.832
	No	15(53.6)		2(100)		

LOE – level of education. *Grandmulti – Grandmultipara

DISCUSSION

Post-partum haemorrhage is a major cause of maternal morbidity and mortality in developing countries^{13,14} and a preventable cause of maternal death¹⁵. The prevalence in this study is 3.4%, which is similar to a study conducted across various referral hospitals in Nigeria, where the prevalence was 3.2%¹⁶. It was different from the prevalence of 2.2% reported in a large cross-sectional study conducted in tertiary hospitals across Nigeria⁸. The majority of the women (66.6%) who had PPH were either multiparous or grand-multiparous. This was similar to a study conducted in a tertiary hospital in Port Harcourt, Nigeria, where 73% of the women were multiparous and grand-multiparous women³. Multiparity and grandmultiparity are risk factors for postpartum haemorrhage. This may occur following atony of the uterus. Most (93.3%) of the patients in this study were unbooked, this was similar to a study done in Bayelsa State where 84.4% of the study population were unbooked¹. Antenatal care helps to identify pregnant women who are at risk of PPH and this information helps in birth preparedness and complication readiness thereby preventing the morbidity and mortality associated with PPH.

Most (93%) of these women were referred following delivery to DELSUTH and majority (56.7%) of these deliveries were not supervised by a health care personnel; this was similar to a study done by Allogoa et al in Bayelsa, Nigeria that demonstrated majority of their respondents had unsupervised delivery¹. Unsupervised delivery predisposes to PPH, as the third stage of labour will not be properly managed. Other risk factors for PPH include multiple gestation, prolonged second stage, use of instrumental deliveries, fetal macrosomia, and augmentation of labour². Due to the fact that most of these patients did not register for antenatal care these risk factors cannot be planned and managed accordingly.

The main cause of PPH in our study was uterine atony accounting for 56.6% of the study population. This was similar to several studies conducted across the country, which identified uterine atony as a common cause of PPH²⁻⁶. Generally, causes of PPH have been classified as four T's: tone (uterine atony), trauma (genital tract laceration), tissue (retained placenta), thrombin (coagulation or bleeding disorders)³⁻⁷. Uterine atony is an obstetric emergency in which the uterus fails to contract after delivery of the baby, this leads to profused bleeding that can result in severe maternal morbidity and mortality if not promptly managed. The managements entails administration of oxytocics like oxytocin or ergometrine, if this fails to cause uterine contraction an hysterectomy is advised.

In this study, 93.3% survived following presentation to our facility. This was similar to studies conducted across several hospitals in Nigeria, as well as a hospital in Zimbabwe^{1,2,12}. Many factors contribute to the survival of these women. Early presentation, prompt intervention, availability of blood transfusion services, and the presence of skilled personnel contribute to the high survival rate of these patients in tertiary health facility^{2,7}.

Identification of the aetiology of PPH in this study as uterine atony in the majority of these women is crucial to the survival of these women. Early diagnosis and institution of medical management and prompt surgical intervention improves the chances of their survival¹⁻⁴. It is recommended that each delivery suite has the PPH algorithm. This, alongside clinical drills, ensures that health workers are up to date with the management of PPH. There was an association between the type of PPH and sociodemographic characteristics as the study reveals that parity and booking status was statistically significant when compared to the type of PPH.

CONCLUSION

PPH is largely preventable, and efforts should be made to implement measures to curb this menace. The prevalence of PPH in this study was high this could be due to poor antenatal care. Health workers should be trained on the management of PPH, and refer patients early, to reduce maternal mortality. Referral centres should institute resuscitative measures early, and avoid type-three delays. Government should also subsidize costs of healthcare, to encourage these women to patronize health facilities, and reduce the incidence of type two and type three delays.

RECOMMENDATION

There should be concerted efforts aimed at reducing the

prevalence of PPH in the various states across Nigeria, through education of women and their health-care providers on the signs of PPH, and prompt referrals should be done to prevent maternal morbidity and mortality.

CONFLICT OF INTEREST

There was no conflict of interest to declare

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