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RISK FACTORS, CHALLENGES AND MANAGEMENT OF POST PARTUM HAEMORRHAGE IN NDUTH, OKOLOBIRI, NIGERIA: A 5-YEAR EXPERIENCE

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ABSTRACT

Objective: We aimed at exploring and comparing the incidence, risk factors, causes, treatment modalities and the outcome regarding the patients with PPH in a new tertiary centre in south-south Nigeria. **Methods:** Data from hospital records were used between January 1st.2009 to December 31st. 2013. For of all patients that had postpartum haemorrhage after vaginal delivery and cesarean section at Niger Delta University Teaching Hospital, Okolobiri, were reviewed and analyzed using Epi info version 7.1.4.0. Post-partum blood loss was calculated by estimating blood loses in graduated containers and in bed lines and gauze packs. **Results:** A total of 174 women had postpartum haemorrhage during the period under review. 152(86.64%) had primary postpartum haemorrhage, while 22(12.54%) had secondary postpartum haemorrhage. The commonest cause of post partum haemorrhage was retained products of conception due to lack of expertise and mismanagement of the third stage of labour, 61(35.06%) of cases. The other major causes were uterine atony 51(29.31%), genital tract laceration 12(6.90%), abruption placenta 17(9.69%), placenta previa 10(5.75%), uterine rupture 10(5.75%) disseminated intravascular coagulopathy 2(1.15%) sub-involution of uterus and puerperal sepsis 4(2.29%) and wrong repair of episiotomy and wound broken down, 7(4.02%). A total of 12(6.90%) maternal mortality was recorded during the period. Conclusively: Though

retained products of conception is the most common cause of post partum haemorrhage in this review, it is also obvious that patient's poor compliance to modern health care services and strong belief in the traditional health care system had immensely contributed to the negative outcome.

Keywords: Postpartum Haemorrhage, TBA, Unbooked, Risk-Factors, Mortality, NDUTH.

INTRODUCTION

Globally, postpartum haemorrhage (PPH) remains a major cause of maternal morbidity and mortality. It is the singular leading cause of maternal death worldwide. Literature had quoted a global prevalence rate of approximately 6% and Africa has the highest prevalence rate of about 10.5% (1). Even though the maternal mortality ratio due to PPH -defined as the number of maternal deaths due to PPH divided by the total number of live births- differs between countries. Still Asian and most particularly African countries have the highest maternal death and burden due to complications of PPH. In those developing countries of Africa and Asia, PPH accounts for more than 25-33% of all maternal deaths, while the disparity noticed has a proportion range from less than 10% in developed countries to nearly 60% in some third world countries (2). It further buttress the fact, that the ratio of maternal deaths attributable to PPH vary considerably between developed and developing countries and within regions, which suggest that deaths from PPH can be reduced or prevented with better emergency programmed intervention (2). Therefore adequate skill oriented interventions to prevent PPH in developing countries will be necessary in the global effort to achieve by 2015 the Millennium Development Goal of reducing maternal mortality ratio by three-quarters (from 1990 levels) (3,16,22). By WHO; PPH define as a postpartum blood loss of ≥500 mL after a vaginal delivery and of ≥1000 mL after a caesarean delivery (1, 3).However in our environment; many deliveries are done at home, and even those in the health centre may not accurately ascertain the exact blood lost, coupled with the fact that most patient are already anemic before delivery, hence present in severe critical conditions. In certain part of Nigeria for example in Borno State, haemorrhage is the second most common cause of maternal death after hypertension related causes (4). Some of the leading causes of PPH are uterine atony, retention of retained product of conception, delivery injuries, other risk factor includes grand multiparity, pre-eclampsia, operative deliveries; chorioamnonities, overdistented uterus due to large babies, twins, obstructed labour, late presentation for management after days of trial of labour in a Traditional Birth Attendance place (TBA), which has been noticed to be

very common in this region. This advocate for an active management of the third stage of labour, which is an evidence-based intervention for the prevention of uterine atony, and has been promoted in developing countries (5, 6, 7). However, both accurate knowledge about active management of the third stage of labour (8) and its correct use remain low in developing countries (9, 10). In most cases, PPH generally occurs without warning and the majority of women affected present with no known risk factors (7, 10). The aim of this work is to study how some socio-cultural and other local factors relates with PPH in women in Okolobiri, Bayelsa State in Nigeria; the relative effectiveness of the currently used mode of prevention, and treatment.

RESULTS

During the review period in this centre, we recorded a total of 2815 instrumental and vaginal deliveries, among these patients 174 were managed for post partum haemorrhage (PPH). The mean age of the patients was 28.43±6.23 STD years (15–44 years). About 35.34% of the patients were grand multiparous, 21.15% of the patients were para 2, while 32.60% of the patients were primiparous. Only 16.6% of the patients were highly educated, while majority 73.56% had either primary or secondary education, 9.77% had no formal education as shown in Table 1. Close to halve of the patients 49.02% have no source of livelihood as they comprises of house wife's, students and applicant. About 56.32% of the patients are unemployed, while 31.61% were self employed as shown in Table 2.

Table 1: Demographics of PPH patients in NDUTH

AGE	Frequency	Percent	Cum. Percent
≤ 20	18	10.34%	10.34%
21-30	93	53.45%	63.79%
31-40	55	31.61%	95.40%
≥40	8	4.60%	100.00%
Parity			
None	10	6.41%	6.41%
1 delivery	51	32.60%	39.01%
2 deliveries	33	21.15%	60.16%
≥3 deliveries	62	35.34%	100.00%

Educational status			
No formal education	17	9.77%	9.77%
Primary education	51	29.31%	39.08%
Secondary education	77	44.25%	83.33%
Higher education	29	16.6%	100.00%

Table 2: Socio-economic demographics of PPH patients in NDUTH.

OCCUPATION	Frequency	Percent	Cum. Percent
Applicant	15	8.62%	8.62%
Business	19	10.83%	19.45%
Professional	20	11.40%	30.85%
House wife	61	34.77%	65.62%
Traders	49	27.93%	93.55%
Students	10	5.70%	100.00%
Occupational status			
Employed	21	12.07%	12.07%
Self employed	55	31.61%	43.68
Unemployed	98	56.32%	100.00

We managed a total of 174(6.18%) of Post partum haemorrhage cases during the study period among the 2815 deliveries. With primary post partum haemorrhage (PPPH) constituting 152(86.64%) while secondary postpartum haemorrhage constituted 22(12.54%) as shown in Table 3. The most frequent cause of PPH was retained product of conception 61(35.06%), closely followed by uterine atony 51(29.31%), others includes accidental causes like abruption placenta 17(9.69%), genital lacerations 12(6.90%), placenta previa 10(5.75%), uterine rupture 10(5.75%), wrong repair of episiotomy 7(4.02%), puerperal sepsis and sub involution 4(2.29%) and coagulopathy 2(1.15%) as shown in Table 4.

Table 3: Type of PPH in NDUTH

Type of PPH	Frequency	Percent	Cum. Percent
Primary	152	86.64%	86.64%
Secondary	22	12.54%	100.00%
Total	174	100.00%	100.00%

Table 4: Some of the causes of PPH in NDUTH.

CAUSES of PPH	Frequency	Percent	Cum. Percent
Abruption placenta	17	9.69%	9.77%
Coagulopathy	2	1.15%	10.92%
Placenta preavia	10	5.75%	16.67%
Placenta retention	61	35.06%	51.73%
Uterine atony	51	29.31%	81.04%
Sepsis/ sub involution	4	2.29%	83.33%
Uterine rupture	10	5.75%	89.08%
Vaginal tear/ cervical tear(lacerations)	12	6.90%	95.98%
Wrong repair of episiotomy	7	4.02%	100.00%
Total	174	100.00%	100.00%

The commonest risk factors as regards the outcome, and severity of PPH in this study was abdominal massage 97(55.29%), others includes multiparity 62(35.34%), infections and sepsis 38(21.66%), anemia on admission 77(43.89%), instrumental delivery (cesarean section) 72(41.04%) , preeclampsia-eclampsia were recorded in 17(9.69%), history of preterm labor 18(10.26%), prolonged labor and over distension 13(7.41%) and history of bleeding disorder were 7(3.99%) as shown in Table 5.

Table 5: Some of the risk factor found in patients with PPH in NDUTH.

Risk factors for PPH	Frequency	Percent
Multiparty ≥3 deliveries	62	35.34%
Abdominal massage	97	55.29%
Infection and sepsis	38	21.66%

Anemia	77	43.89%
Operational delivery	72	41.04%
Preeclampsia/eclampsia	17	9.69%
History of bleeding disorder	7	3.99%
Preterm	18	10.26%
Prolonged labor/Over distension	13	7.41%

Those factors involved in the delay, late presentation and uptake of modern medical services in these region; are that majority of the patients are rural dwellers 134(76.38%), while minority were urban dwellers 40(22.8%), majority were unbooked 118(67.26%), most patients reports late after laboring for many hours and sometimes days in TBA 110(62.70%), more so; substantial number of the deliveries were undertaken by less or unskilled birth attendants at homes TBA/Nurses 76(43.32%) as shown in Table 6. Large proportion of the delivery was spontaneous vaginal route 101(58.05%), while 72(43.68% was by cesarean section, abdominal hysterectomy was performed due to severe bleeding 1(0.57%), cervical and vaginal repairs were done in 43(24.51%) of the patients, twin gestation was 7(3.99%), life birth was 126(72.41%), while still birth recorded was 48(27.59%); Antibiotics prophylaxis and therapy was initiated in 141(80.37%), meanwhile a total of 138(78.66%) patients received blood transfusion. During the hospital stay 36(20.52%) of the patients had intensive care, 5(2.85%) were on PMCT due to HIV, and 58(33.06%) had malaria and were treated as shown in Table 7.

Table 6: Socio-cultural and economic influence on prevalence of PPH

Other indirect causes of PPH	Frequency	Percent	Cum. Percent
Rural residence	134	76.38%	6.41%
Urban residence	40	22.8%	39.10%
Booked	56	31.92%	60.26%
Un-booked	118	67.26%	73.08%
Referred from TBA	110	62.70%	80.77%
Referred from PHC	16	8.91%	90.38%
Delivery by Nurse/TBA	76	43.32%	94.87%

Table 7: Mode of delivery, intervention and fetal outcome of PPH.

Intervention and outcome of PPH	Frequency	Percent
Caesarean section (CS)	72	43.68%
Spontaneous vaginal delivery(SVD)	101	58.05%
Hysterectomy	1	0.57%
Cervical/vaginal repairs	43	24.51%
Twin gestation	7	3.99%
Life baby	126	72.41%%
Still birth	48	] 27.59%
Antibiotics therapy	141	80.37%
Blood transfusion	138	78.66%
Intensive care	36	20.52%
HIV(PMCT) care	5	2.85%
Malaria treatment	58	33.06%

Among the complication suffered by the patients; anemia was the commonest recorded 95(68.35%); others includes sepsis and infections 24(17.28%), reoperation was 4(2.88%); maternal mortality during the period associated with PPH was 12(8.64%), with cardial decompensation due to severe bleeding in 4 cases, sepsis, pulmonary edema, and eclampsia in two patients involved with PPH as shown in Table 8. Oxytocis were administered in 171(97.47%) of the patients, with all these patients were given first line therapy of Oxytocin, and a supplementation therapy of misoprostol 148(86.55%), while 58(33.92%) were given an additional ergometrin. The mean blood transfusion was 2.65±1.2 std. units of blood, The average days of hospitalization was 5.32±3.65 std. days, the estimated average blood loss in the period was 1023±520 std. milliliters; The mean PVC on admission was 30.55±3.6% std.,while PCV before discharge was 29.55±2.9 % std. as shown in Table 8-9, Figure 1-4

Table 8: Maternal complication and outcome of PPH (n=139).

Type of maternal morbidity and management	Frequency	Percent
Anemia	95	68.35%
Preeclampsia and convulsion	8	5.76%
Fever/sepsis	24	17.28%
Third degree perineal tear	1	0.72%
Reoperation	4	2.88%
Maternal mortality and possible causes	12	8.64%
Pulmonary edema	2	1.44%
Cardial decompensation	4	2.88%
Eclampsia	2	1.44%
Embolia	1	0.72%
Intestinal obstruction	1	0.72%
Sepsis	2	1.44%

Table 9: Management of patients with PPH (n=171)

Unit of blood transfusion and oxytocis use	Frequency	Percent
Use of oxytocis	171	97.47%
Misoprostol	148	86.55%
Oxytocin	171	97.47%
Ergometrin	58	33.92%
Unit of blood transfused		
1	21	14.79%
2	36	20.52%
3	46	26.22%
≥4	35	19.95%

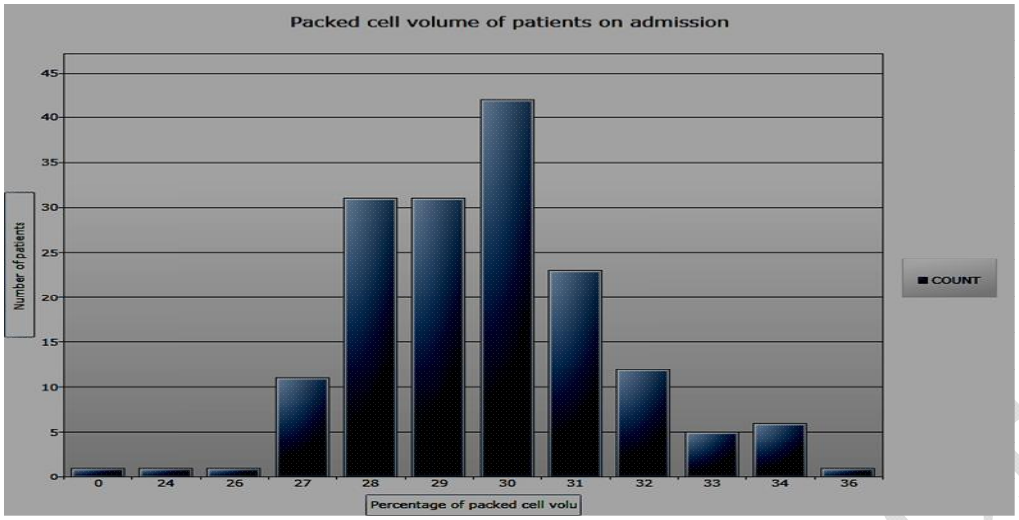

Figure 1

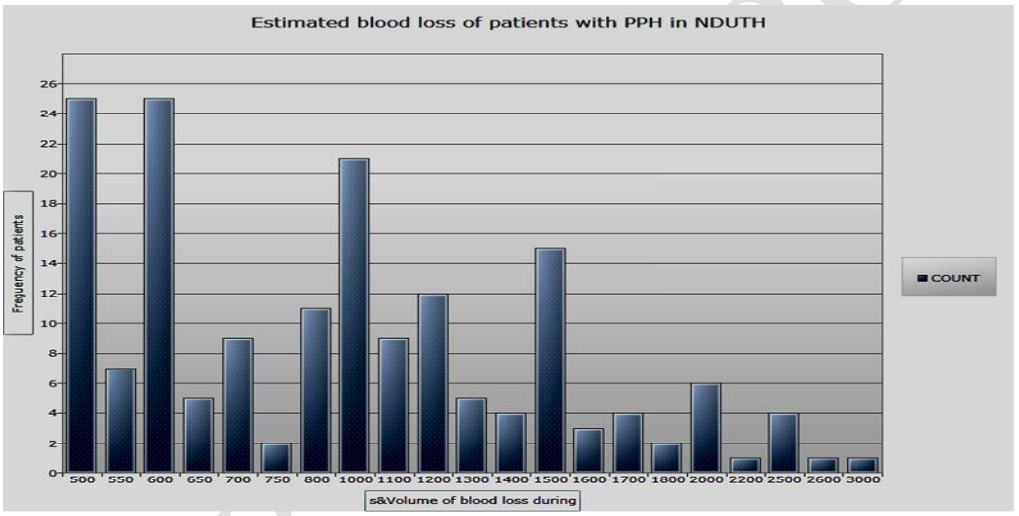

Figure 2

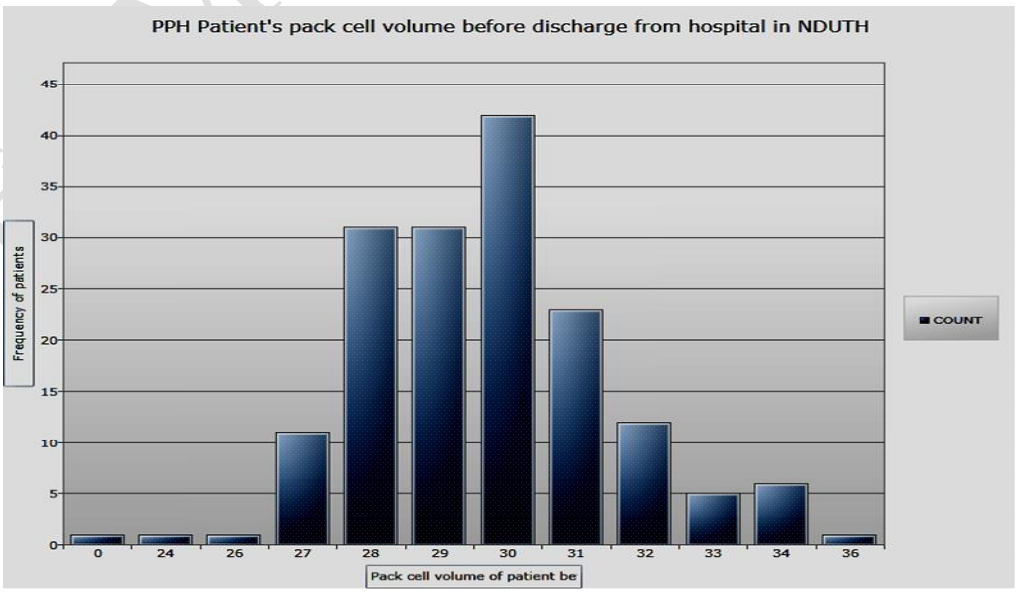

Figure 3

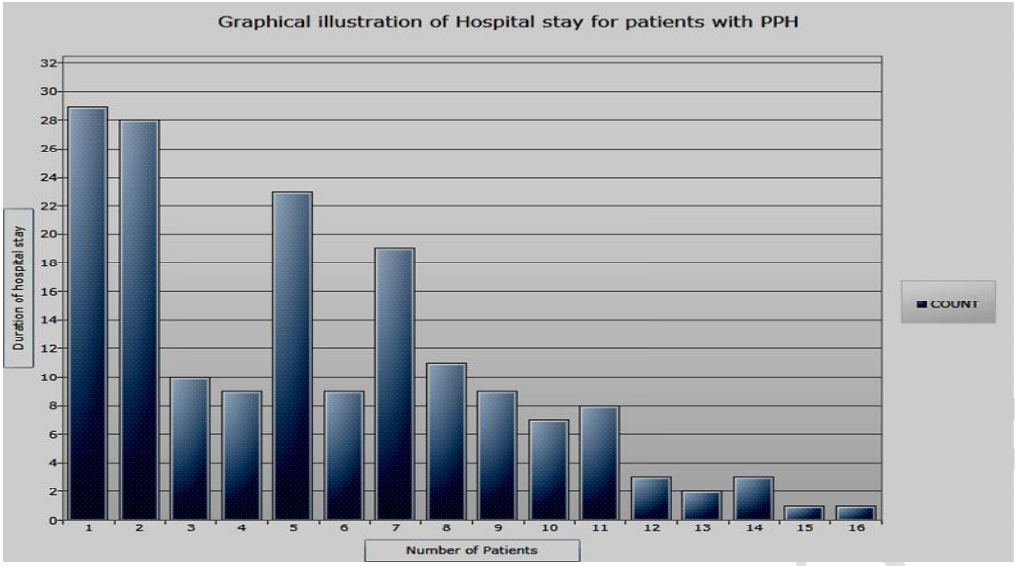

Figure 4

DISCUSSION

Postpartum haemorrhage stands a major problem in this resources deprived environment; where this study is carried out. The true prevalence and incidence could not be ascertained. Reasons; inaccurate measurement techniques, late presentation with no proper recording of blood lost, some patient could not assess the medical facility before fatal incidence occurs. The socio-economic and cultural behavior also influence immensely; where most patients do prefer TBA to modern medical service due to cost, awareness and belief. Some resent studies quote figures ranging from 5 to 12% of vaginal deliveries (11, 12). In this study, however, the incidence of post partum haemorrhage was 6.18% of the total vaginal and instrumental deliveries; this is relatively high; even though it is a tertiary hospital, where active management of the third stage of labour is advocated, and routinely practiced with the use of, misoprostol and other oxytocics. Despite these measures taken in the centre; yet due to socio-economic, tradition- cultural and other factors: the incidence has not dropped significantly; Apparently; majority of the cases involved in this review were un-booked patients, who were referred from other centers such as traditional birth attendants, faith clinics; primary health centers manned by poorly trained Community Health Workers (CHW) and women who delivered in their homes. Which has been found to be directly associated with the severity of the cases, that apparently lead maternal morbidity All the patient that died were also unbooked, which buttresses the earlier statement, as compared to those booked patients 12(6.90%). The use of oxytocics has been associated with a decrease in the incidence of PPH by about 60% by Sosa CG et tal. (13, 14). Studies done in other centre in Nigeria, and other part of the world: attributes uterine atony as the commonest cause of postpartum

haemorrhage. (15, 16, 17, 18). More so; other similar studies have also recorded uterine atony as the main cause PPH (19, 20). Meanwhile placenta retention was the commonest in this review, closely followed by uterine atony. The reasons or causes behind this maybe that; most delivery were done in the Traditional Birth Attendant places or at their homes where the third stage of labor were poorly managed (15, 21). Other causes are late presentation, traditional belief of childbearing and fears of surgery commonly encountered in this environment and it`s subsequence need for emergency cesarean section which has a higher tendency of bleeding. Some other causes are delay or none availability of emergency uterotonic drugs as a result of poverty and poor management of the third stage of labour (12, 25). The current concept in the management of the third stage of labour is active management (22, 23). This consists of interventions designed to facilitate the delivery of the placenta and prevent uterine atony by increasing uterine contractions and thus prevent postpartum haemorrhage (16, 23). The concept behind this active management, includes the immediate administration of uterotonic agents, controlled cord traction and uterine massage after the delivery of the placenta and anticipation of high risk patients, who maybe prone to uterine atony (16, 22). Most of the spontaneous deliveries complicated with postpartum haemorrhage seen in this study were conducted by unskilled attendants and less experienced nurses; that have little or no knowledge of active management of the third stage of labour. The patients with genital tract lacerations, and inadequate repair of episiotomies in this study were similar or close to other studies from other parts of the Nigeria (16, 24, and 25). Therefore it is of utmost important and imperative to foresee and manage potential dangers as to identify those risk factors leading to PPH since death from it is preventable (26,27); even though literatures have shown that; postpartum hemorrhage can occur in the absence of these risk factors (7,15,18). The most commonly influence able risk factors in this environment are Incessant abdominal massage, grand multiparty, severe preeclampsia, infection and sepsis, lack of antenatal care, early age at childbirth coupled with under nutrition all predisposing factor anemia, macrosomia, fibroids, prolonged labour, obstructed labour all contributed largely to uterine atone. During the review we also found, that the incidence of abruption placenta, uterine rupture, placenta previa, and chorioamnitis as a result of prolonged rupture of membrane without seeking medical attention to be high compared to other studies done in other centre; which are also substantial risk factor for PPH. We therefore; advocate that, the most important line of management is relief of the precipating factors, prompt and adequate replacement of intravascular blood volume (21, 28). These were achieved by transfusion, which stands in this study to be 138(78.66%) of the patients, with an average total of

2.65±1.2 std. units of blood consumed per patient, in addition to an aggressive used of uterotonics like oxytocins, misoprostol, ergometrine in 171(97.47%) of the patients; which may have reduced the incidence to a relatively lower level despite all challenges. This could have resulted to the comparatively lower proportion of women with secondary post partum haemorrhage recorded in this study 22(12.50%); as compared with other studies done by Ajenifuja KO et al in Ile-Ife, Nigeria 36(32.14%) which is higher (21). The maternal mortality recorded in this study due to Postpartum haemorrhage was 12(8.64%), although those deaths could not completely be attributed to PPH alone; since some of the patients also had other conditions like sepsis, preeclampsia, severe anemia bleeding disorders complicating with the PPH : Other studies done in the country puts maternal mortality to 18.7% by Adewunmi's 1986 study from Ibadan, Nigeria, 4.5% by Ijaiya et al in Ilorin, Nigeria; whereas on the worldwide basis postpartum haemorrhage is implicated in 25% of maternal mortality especially from the developing countries(21,25 29,30). Although our maternal mortality rate due to PPH was comparatively low, though not the lowest, yet this low figure was probably due to the prompt and appropriate intervention given to the patients in order to prevent mortality due to haemorrhage. Apart from the mortality, PPH is associated with maternal morbidities, which had necessitated increase use of antibiotic therapy, transfusion and other drug management which has a tremendous economic cost to both government and the patient's family.

CONCLUSION

We observed that, post partum haemorrhage was among the major causes of maternal morbidity and mortality. Though most of the deliveries including normal spontaneous and instrumental deliveries complicated with postpartum haemorrhage recorded in this study were conducted by skilled health workers and that have sufficient knowledge of active management of the third stage of labour. Other factors like late presentation, cost, delays, availability of resources and lack of adequate personnel all attributes to the occurrence of PPH. It is therefore apparent that; as to reduce the morbidity and mortality from postpartum haemorrhage, all hands must be on deck, as more skilled personnel, availability and access to appropriate supplies and equipment, governmental intervention in public enlightenment program on self medical awareness, reduction in health cost would all go a long way in reducing PPH and its complications. Women should be encouraged to make use of existing health facilities by booking and receiving ante natal care.

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