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Postpartum hemorrhage among women delivered at Tumbi Regional Referral Hospital, Coast Region, Tanzania Prevalence and Risk factors

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Abstract

Background: Postpartum hemorrhage (PPH) is generally defined as blood loss greater than or equal to 500mls within 24 hours after birth, while severe PPH is blood loss greater than or equal to 1000mls within 24 hours. The aim of this study is to access the prevalence, causes and risk factors associated with postpartum hemorrhage among women delivered at Tumbi Regional Referral Hospital, Coast Region, and Tanzania.

Keywords: Postpartum hemorrhage; Delivery; Women Tumbi Regional Referral Hospital Coast Region; Tanzania

1. Introduction

Postpartum Hemorrhage (PPH) is generally defined as blood loss greater than or equal to 500mls within 24 hours after birth, while severe PPH is blood loss greater than or equal to 1000mls within 24hours. PPH is the most common cause of maternal death worldwide. Most cases of morbidity and mortality due to PPH occur in the first 24 hours following delivery and these are regarded as primary PPH whereas any abnormal or excessive bleeding from the birth canal occurring between 24 hours and 12 weeks postnatally is regarded as secondary PPH. Worldwide about half a million women dies as results of complications of pregnancy and child birth [1]. In both developed and developing countries, postpartum hemorrhage is a leading cause of severe maternal morbidity and mortality. Approximately 14 million women suffer primary postpartum hemorrhage annually and at least128, 000 of these women bleed to death [2]. Postpartum hemorrhage is the most preventable and treatable problem through active management of the third stage of labor AMTSL [3] .However , the use of oxytocin is not feasible in many low-income countries, where most births take place at home with untrained birth attendants [4]. The magnitude of PPH in Sub-Saharan Africa is high at 10.5% [5].Ethiopia is one of the countries with the highest maternal mortality rate (MMR) and almost all of these deaths were due to direc to bstetric complications [6].PPH is a leading direct causes of maternal morbidity and mortality in all region of the country [6]. World Health Organization reported in 2012 that PPH affects 2% of childbirth [7].Because two – thirds of pregnant women that develop PPH have no known risk factors, preventive measures must be offered to all pregnant women [8].The main PPH prevention measure recommended in low-and middle-income countries (LMICs) is active management of the third stage of labor (AMTSL), which WHO recommends for all deliveries in LMIC settings [9].The highest prevalence of PPH revealed in Africa (25.7%) followed by Latin America and Asia (18%), North America and Europe(13%) and Oceania (7.2%) [10].Study done in Netherlands shows that the prevalence was 4.1% (2000) [11] which rose to 6.4% in 2013 [12].In Senegal PPH rose between 10% in 2007 to 23% in 2008 [10] while in Quarite PPH was 5.4% in 2015 [13]. In Sub- Saharan Africa, where 1 in 16 women die of pregnancy and childbirth-related conditions, PPH is estimated to account for between25%-30% of these deaths [14],thus making severe bleeding the single most important cause of maternal mortality worldwide [15].Primary postpartum hemorrhage is traditionally considered as a disorder of one or more of four processes: uterine atony, retained clots or placental debris, genital lesions or trauma, and disorders of blood coagulation. Uterine atony which can occur after normal vaginal delivery or abdominal delivery is said to account for up to 75-90% of cases of Postpartum Hemorrhage [16]. Secondary (late) PPH occurs between 24

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hours after delivery of the infant and 6weeks postpartum. Most late PPH is due to retained products of conception infection, or both. In the rural areas of Tanzania, the use of a 'Kanga' has been adopted as a valid measurement too [17].Convenient because it is produced and sold locally, the pre-cut kanga is a standard sized rectangle (100 cm X 155 cm) of local cotton fabric. When three to four soaked kangas are observed at a delivery, the trained, the trained traditional birth attendant (TBA) is entrusted to transfer patients to a health center. Even when a good measurement methodology is in place, there is still difficulty in defining PPH simply as blood loss greater than 500ml because it fails to take into account predisposing health factors that are reflected in such a definition. Since the quantity of blood loss is less often important than the actual effect that it has on the laboring women, it has been suggested that the definition take into account any blood loss that causes a major physiological change, such as low blood pressure, which threatens the women's life. Tanzania is a substantial contributor to maternal mortality, with a maternal mortality ratio of 556 per 100,000 live births during the 10-year period before the 2015 / 2016 Demographic and Health Survey. Maternal mortality accounts for 21% of deaths of women reproductive age [18].In Uganda PPH causes 25% of all maternal deaths [5]. In Kenya maternal mortality has declined by nearly 50% over the past thirty years, it remains high in low-and middle-income countries [19].Therefore the aim of this study was to access the prevalence, causes and risk factors associated with postpartum hemorrhage among women delivered at Tumbi Regional Referral Hospital , Coast Region, Tanzania. The findings of this study are important for national policy makers and health institutions because it sought to open up new perspectives in early identification of women at risk for PPH, early diagnosis and might provide new strategies to prevent and control PPH.

2. Material and methods

2.1. Study area and period

This study was conducted at Tumbi Regional Referral Hospital, Kibaha District, Coast Region , Tanzania from 01 January to December 31, 2023.

Figure 1 Coast Region and its 6 districts

The study was conducted to access the prevalence, causes and risk factors associated with postpartum hemorrhage among women delivered at Tumbi Kibaha district. Kibaha is one of the six administrative districts of Coast Region in Tanzania (Figure 1). The district covers an area of 1,502 km2 (580 sq mi). Kibaha District is bordered to the northeast by Kibaha Urban District and the north by Chalinze District. The district is bordered to the southeast by the Kisarawe District, On the western side the district is bordered by Morogoro District of Morogoro Region. According to the 2012 census, the district has a total population of 70,209.

The study was conducted to access the prevalence, cause and risk factors postpartum hemorrhage among women attending antenatal clinic at Tumbi, Kibaha district.

2.2. Study design

The study design was across –sectional study which prevalence, causes and risk factors of postpartum hemorrhage among pregnant women attending antenatal clinic at Tumbi Regional Referral Hospital, Kibaha District, and Coast Region was studied at a time. Structured pretested questionnaire with key information was usedto collect the desired data.

2.3. Study population

Pregnant women attending clinic at Tumbi Regional Referral Hospital were registered in the study.

2.4. Sampling size

The sample size in this study was 212 participants. The sample size calculation by Kirkwood formula

N = Sample size

Z = Confidence interval level95% in this studywhich is 1.96

P = Proportional of study prevalence(estimatedprevalence) 1.4% 2021

D =Absolute error or precision 0.05 has to be decided by researcher.

$$N=Z^2P(1-P)/D^2$$

$$N=1.96^2 \text{ X } 1.4\%(1-1.4\%)/0.05^2$$

$$N=0.053029/0.0025$$

$$N= 212$$

2.5. Sampling Technique

Simple randomly technique was employed when participants attending at Tumbi Regional Referral Hospital antenatal clinic were allocated numbers (even and old numbers).Participants who had even numbers were involved in the study.

2.6. Data collection

The data collected by structure guided questionnaires. The questionnaire prepared in English and translated into Swahili to maintain the consistency and content of the questionnaire, confidentiality of information, participant's rights and voluntarily informed consent were secured. The participants were asked the questions and their answers filled in the questionnaire by the researcher.

2.7. Data analysis

Questionnaire filled with irrelevant information were removed. The data from questionnaire with relevant information were analyzed with Statistical Package for Social Sciences (SPSS version 20)

2.8. Inclusion criteria

Women who had vaginal delivery and whose blood losses was 500mls or more willing to participate were included in the study.

Those who had primary postpartum hemorrhage within the study willing to participate were included in the study.

2.9. Exclusion criteria

Women who had caesarean delivery and unwilling to participate in the study.

Those who delivered outside the hospital without any referral letter.

Those who were brought in dead following bleeding after delivery.

2.10. Ethical clearance

Aletter from St. Francis University College of Health and Allied Sciences ethical committee was obtained. The letter submitted to Regional Medical Officer, Coast Regional who forwarded the letter to the Medical Officer In charge who give permission to use participant at Tumbi Referral Hospital.

3. Results

3.1. Socio-demographic characteristic of participants pregnant women attending antenatal clinic at Tumbi Referral hospital

A total of 212 pregnant women participated in this study. Out of these 20 (9.4%) aged < 19 years , 100 (47.2%) aged 20-29 years, 60 (28.3%) aged 30-39 years, and 32 (15.1%) aged > 40 years. Education status of pregnant women who participated in the study, 15 (7.1%) were not educated, 30 (14.2%) were primary education, 100 (47.1%) were secondary education, 67 (31.6) were higher education. Primipara 35(16.5%), para 2- 4105 (49.5), para 5 and above 72 (34.0%) , as shown in Table 1

Table 1 Social demographic characteristics of participants

Variable	Frequency	Percentage
Age(in years)		
< 19 years	20	9.4
20-29 years	100	47.2
30-39 years	60	28.3
>40years	32	15.1
Education Status		
Not educated	15	7.1
Primary school	30	14.2
Secondary school	100	47.1
Highereducation	67	31.6
Parity		
Primepara	35	16.5
Para 2-4	105	49.5
Para 5 and above	72	34.0

3.2. Causes of primary postpartum hemorrhage of participant women attending antenatal clinic at Tumbi Referral Hospital

Among 212 pregnant women; uterine atony 40 (18.9%), laceration 15 (7.1%), retained placenta140 (66.0%),coagulopathy 17(8.0%) as shown in table 2

Table 2 Causes of primary post partum hemorrhage among participants

Variable	Frequency	Percentage
Uterine atony	40	18.9
Laceration	15	7.1
Retained placenta	140	66.0
Coagulopathy	17	8.0

3.3. Causes of secondary postpartum hemorrhage of participant women attending antenatal clinic at Tumbi Referral Hospital

A total of 200 (94.3%) participants had retained placenta, 7 (3.3%) had puerperal sepsis, and5 (2.4%) had episiotomy as shown Table 3.

Table 3 Causes of secondary post partum hemorrhage among participants

Variables	Frequency	Percentage
Retained placenta	200	94.3
Puerperal sepsis	7	3.3
Broken- down/episiotomy	5	2.4

4. Discussion

This studywas aimed to identify the prevalence, causes and risk factors of pregnant women among women attending antenatal clinic in Tumbi Regional Referral Hospital, Coast Region, and Tanzania. It was observed that 47.2% were between 20-29 years. In comparison to women in the age range between 20 and 34 years old who had a vaginal delivery, women aged 35 and older were more likely to have experienced PPH , according to research by Kebede et al. [20] and Shahbazi Sighaldeh et al [21].However, Bazirete et al. and Onong et al. were unable to discover a relationship between age and bleeding [22] and their findings are consistent with those of the current investigation. In this study 49.5% were para 2-4. A study done by Ononge et al. suggested that grand multi-parity may be tangentially related to PPH [23], and some research showed that themajority of PPH cases were in mothers who were nullparous [24]. Similar to the Ononge study, the current investigation found no evidence of a substantial impact of parity on the occurrence of PPH. In this study retained placenta 66.0% and 94.3% primary postpartum hemorrhage and secondary postpartum haemorrhage respectively, other studies was reported that abnormal placentation was responsible for majority 55.83% of severe PPH, which was much higher than the previously reported prevalence of 10% [25].

5. Conclusion

In this study if postpartum haemorrhage is reduced, maternal death will be greatly reduced since PPH is the main cause of maternal death. It is important to remember that we have to prepare for all mothers giving birth, as some get severe PPH without any known risk factors.

Recommendation

Health professional attending labor and delivery should give more attention for high risk mothers older age, grand multiparity and history of PPH mothers during delivery. Continue to encourage ANC visit and prevent prolonged labor should be advice to reduce the occurrence of postpartum haemorrhage**.**

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest in this study.

Statement of ethical approval

In this study no animal was used but human was used. The only study tool used to collect data was questionnaire. However, ethical clearance was obtained from the respective authorities to conduct the study. The research committee of St. Francis University College of Health and Allied Sciences, Regional Medical Officer, Coast Region, Medical Officer in charge Tumbi Regional Referral Hospital gave permission the study to be conducted.

Statement of informed consent

Written informed consent was obtained from all antenatal pregnant women who consented to the study, records were coded and participant / Researcher names were not used. All the information collected remained confidential and was used for purposes of the study only. Participation was voluntary and no incentives were given.

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