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Prevalence and Severity of Vaginal Bleeding among Pregnant Women in Southeast, Nigeria

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Abstract: ***Background***: Vaginal bleeding during early pregnancy is a common clinical presentation that significantly affects maternal and fetal outcomes. This study aims to determine the prevalence and severity of vaginal bleeding among pregnant women in Southeast, Nigeria. ***Materials and Methods***: This prospective descriptive study was conducted over two years, from January 2021 to December 2022, and included 3893 pregnant women (<20 weeks gestation) attending antenatal clinics or presenting at emergency departments. Data collection involved structured, interviewer-administered questionnaires, outpatient and emergency department records, and hospital medical records. Participants were categorized into two groups: women with and without vaginal bleeding in early pregnancy. Vaginal bleeding severity was classified using the Royal College of Obstetricians and Gynaecologists (RCOG) guidelines. Statistical analysis was conducted using Microsoft Excel 2019, with frequencies and percentages used to summarize demographic and clinical data. ***Results***: The prevalence of vaginal bleeding in early pregnancy was 23.48% (n=914). Among those with vaginal bleeding, the severity was distributed as follows: spotting (10.50%), minor haemorrhage (40.37%), major haemorrhage (39.17%), and massive haemorrhage (9.96%). The majority of participants were aged 30-39 years (54.79%) and had secondary education (64.14%). Most women with vaginal bleeding also fell within the 30-39 age group (55.25%). ***Conclusion***: The study highlights a notable prevalence of vaginal bleeding in early pregnancy, with a significant proportion experiencing major haemorrhage. Enhanced antenatal monitoring and public health interventions are recommended to manage and mitigate complications associated with vaginal bleeding in early pregnancy.

Keywords: Prevalence, Vaginal Bleeding, Pregnancy, Early Gestation, Maternal Health.

Research Paper

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INTRODUCTION

Vaginal bleeding during pregnancy is a critical obstetric concern with varying implications depending on the timing, severity, and underlying causes [1]. It is a significant contributor to maternal and fetal morbidity and mortality, particularly in low-resource settings like Southeast Nigeria. The global burden of pregnancy-related complications remains substantial, with the World Health Organization (WHO) estimating that approximately 15% of pregnant women will experience a life-threatening obstetric complication, among which vaginal bleeding features prominently [2]. Understanding the prevalence and severity of vaginal bleeding during pregnancy is essential for improving maternal and neonatal health outcomes.

Vaginal bleeding during pregnancy is categorized as early (occurring in the first trimester) or late (occurring in the second and third trimesters). Early pregnancy bleeding often results from conditions like threatened miscarriage, ectopic pregnancy, and molar pregnancy. In contrast, late pregnancy bleeding is frequently linked to placental complications such as placenta previa, placental abruption, or preterm labor [1]. Studies indicate that 20-30% of pregnancies experience some form of vaginal bleeding, with varying degrees of severity [3]. The consequences range from self-limiting events to life-threatening haemorrhages that necessitate immediate medical intervention.

In sub-Saharan Africa, including Nigeria, the maternal mortality rate remains among the highest

globally, with haemorrhage accounting for up to 27% of maternal deaths [4]. A study by Okeke *et al*., (2022) in Nigeria highlighted that vaginal bleeding was a common presenting complaint among pregnant women, significantly associated with adverse pregnancy outcomes. This underscores the importance of addressing the challenges in timely diagnosis and management, particularly in settings with limited access to healthcare.

The Southeast region of Nigeria faces unique socio-economic and cultural challenges that influence maternal health outcomes. Factors such as limited access to prenatal care, high prevalence of anaemia, low contraceptive use, and delayed presentation at health facilities contribute to the burden of obstetric complications, including vaginal bleeding [5]. Traditional beliefs and practices often delay the seeking of medical care, exacerbating the severity of complications when they occur. Furthermore, studies in the region have noted that vaginal bleeding during pregnancy is a significant risk factor for poor fetal outcomes, including preterm birth and low birth weight [6].

The pathophysiology of vaginal bleeding during pregnancy varies depending on its etiology. For instance, in the first trimester, the detachment of the trophoblast or abnormalities in implantation can lead to bleeding. In the later stages, placental abnormalities such as previa or abruption are the primary causes [1]. Known risk factors include advanced maternal age, previous pregnancy complications, smoking, hypertension, and multiparity. Socio-demographic factors, such as low educational status and lack of prenatal care, are also significant contributors [3].

Despite the documented burden of vaginal bleeding in pregnancy, there is a paucity of region-specific data in Southeast Nigeria. This knowledge gap hinders the development of targeted interventions to address the unique needs of pregnant women in the region. Understanding the prevalence and severity of vaginal bleeding among pregnant women in Southeast Nigeria is critical for informing clinical practices and policy-making. Moreover, it contributes to global efforts to reduce maternal and perinatal morbidity and mortality in line with Sustainable Development Goal 3, which aims to ensure healthy lives and promote well-being for all ages [7]. This study aims to determine the prevalence and severity of vaginal bleeding among pregnant women in Southeast Nigeria. By providing data-driven insights, the study seeks to contribute to the optimization of obstetric care services in the region.

MATERIALS AND METHODS

Study Design

This prospective descriptive study was carried out for two years, from January 2021 to December 2022. All patients <20 weeks gestation who attended the antenatal clinic or who presented to the emergency department were included in this study. Data were collected using a structured, interviewer-administered questionnaire, as well as from the antenatal outpatient department registration record, emergency department registration record, and hospital medical records. About 3893 participants were recruited for this study. Participants were assured of the confidentiality of their responses, and data was anonymized to protect their identity. Informed consent was obtained from all participants, and they were informed of their right to withdraw from the study at any time without any consequences to their medical care. Participants were divided into the following two groups:

- Women with vaginal bleeding in early pregnancy (<20 weeks)
- Women without vaginal bleeding in early pregnancy (<20 weeks).

Period of viability

Twenty-four weeks was taken as a period of viability [8]. RCOG guidelines [9], for the quantification of antepartum haemorrhage were used:

- ✓ Spotting – staining, streaking, or blood spotting noted on underwear or sanitary protection.
- ✓ Minor haemorrhage – blood loss of <50 ml that has settled.
- ✓ Major haemorrhage – blood loss of 50–1000 ml, with no signs of clinical shock.
- ✓ Massive haemorrhage – blood loss >1000 ml and/or signs of clinical shock.

Inclusion Criteria

Singleton pregnancy complicated with vaginal bleeding <20 weeks gestation.

Exclusion Criteria

1. Multiple pregnancy
2. Chronic hypertension
3. Local cervical pathology such as erosion and polyp

Statistical Analysis

The collected data was analyzed using the Microsoft Excel (2019 version). Descriptive statistics such as frequencies and percentages were used to summarize the demographic characteristics and prevalence and severity of vaginal bleeding.

RESULTS

The socio-demographic profile of the participants (n = 3893) shows that the majority (54.79%) were aged between 30 and 39 years, with a smaller proportion below 20 years (3.57%). Regarding educational attainment, most participants (64.14%) had secondary education, while only 2.00% had no formal education. The marital status distribution indicates that 95.38% were married, with a negligible proportion being single (1.59%) or divorced/widowed (3.03%). In terms

of employment, 45.70% were public sector employees, while 3.19% were unemployed (Table 1).

The obstetric history reveals that nearly half of the participants (46.62%) had experienced 2–3 pregnancies, while only 1.44% reported more than five pregnancies. Parity analysis indicates that 31.26% of participants had 2–3 deliveries, and 28.74% had none. Vaginal bleeding during previous pregnancies was reported by 22.17% of participants, while 50.37% had not experienced it, and 27.46% found the question inapplicable as this was their first pregnancy (Table 2).

Among the 3893 participants, 23.48% reported experiencing vaginal bleeding, while 76.52% did not, indicating that nearly a quarter of the study population encountered this issue (Figure 1). Among the 914 participants who experienced vaginal bleeding, 40.37% reported minor haemorrhage, while 39.17% experienced major haemorrhage. Spotting and massive haemorrhage were less common, reported by 10.50% and 9.96% of participants, respectively (Figure 3).

The age distribution highlights that vaginal bleeding was most prevalent among participants aged 30–39 years (55.25%), followed by those aged 20–29 years (27.02%). Participants aged below 20 and above 40 reported lower prevalence rates of 4.16% and 13.57%, respectively. In contrast, participants without vaginal bleeding also had the highest representation in the 30–39 age group (54.65%) but showed slightly different distributions in other age brackets, with fewer cases in the youngest group (3.39%) (Figure 2).

Table 1: Socio-Demographic Information of Participants

Socio-Demographic Information	Frequency (n = 3893)	Percentage (%)
Age (in Years)		
Below 20	139	3.57
20-29	993	25.51
30-39	2133	54.79
40 and above	628	16.13
Educational Level		
No formal Education	78	2.00
Primary Education	315	8.09
Secondary Education	2497	64.14
Tertiary Education	1003	25.76
Marital Status		
Single	62	1.59
Married	3713	95.38
Divorced/Widowed	118	3.03
Employment Status		
Unemployed	124	3.19
Self-employed	864	22.19
Private sector employee	932	23.94
Public sector employee	1779	45.70
Student	194	4.98

Table 2: Obstetric History of Participants

Variable	Frequency (n = 3893)	Percentage (%)
How many times have you been pregnant including this present one (gravida)?		
1	1069	27.46
2-3	1815	46.62
4-5	953	24.48
More than 5	56	1.44
How many deliveries have you had (parity)?		
None	1119	28.74
1	1022	26.25
2-3	1217	31.26
4 or more	535	13.74
Did you experience vaginal bleeding during previous pregnancies?		
Yes	863	22.17
No	1961	50.37
Not Applicable	1069	27.46

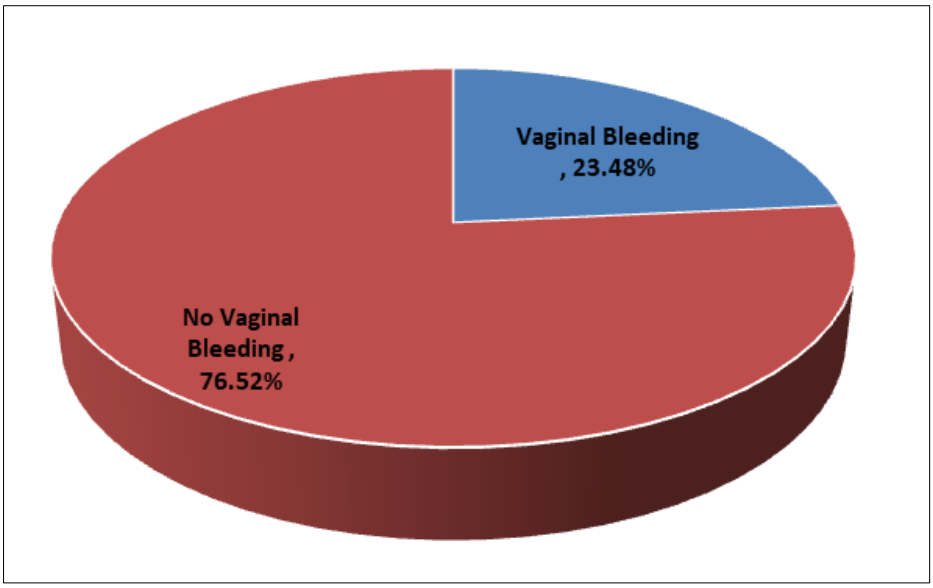

Figure 1: Prevalence of Vaginal Bleeding

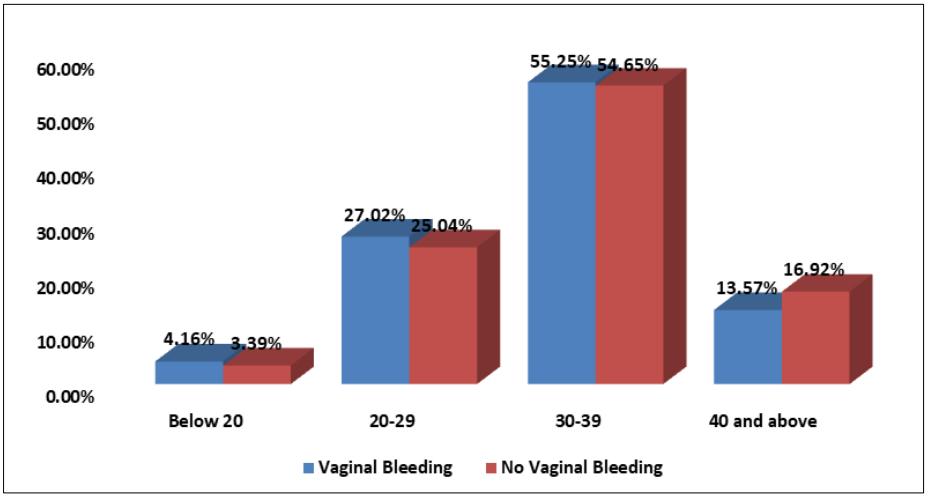

Figure 2: Age distribution of Participants with and without vaginal bleeding

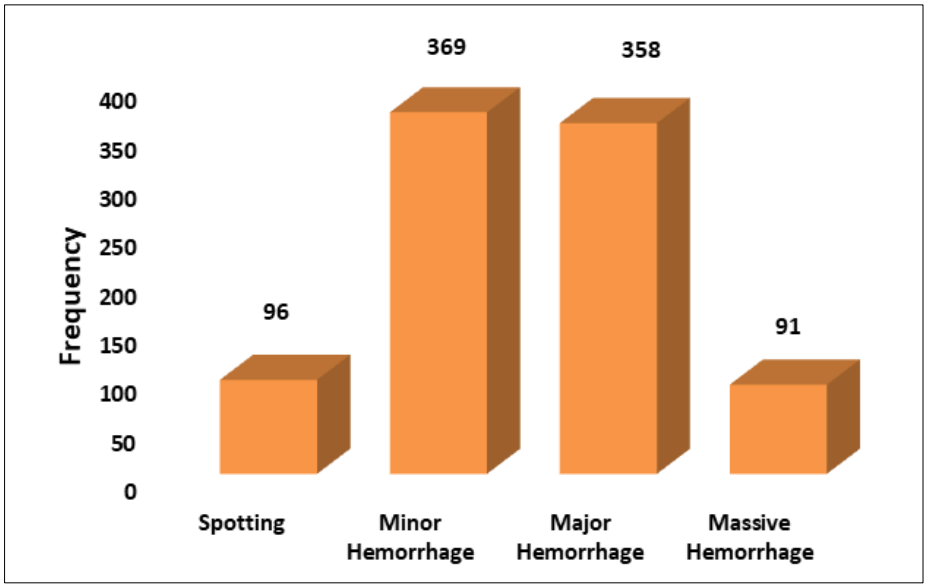

Figure 3: Severity of Vaginal Bleeding

DISCUSSION

The findings from this study provide valuable insights into the prevalence and severity of vaginal bleeding among pregnant women in Southeast Nigeria. The prevalence of vaginal bleeding among the participants was found to be 23.48%. This figure aligns with studies conducted in sub-Saharan Africa, where the prevalence ranges between 20% and 30%, depending on the population and specific risk factors examined [10, 11]. In contrast, studies from developed countries report lower prevalence rates, often below 10% [3], likely due to better antenatal care and earlier intervention in high-risk pregnancies.

The majority of participants were aged between 30 and 39 years (54.79%), with a significant proportion having at least secondary education (64.14%). Age and education levels have been shown to influence maternal health outcomes, including the risk of vaginal bleeding. Previous research indicates that older maternal age is associated with higher risks of complications such as placenta previa and abruptio placentae, which are common causes of vaginal bleeding [12]. The high prevalence of secondary education among participants may indicate better awareness and reporting of symptoms, which could partially account for the observed prevalence.

The obstetric history revealed that 22.17% of participants experienced vaginal bleeding during previous pregnancies. This finding is consistent with earlier studies suggesting that a history of vaginal bleeding increases the likelihood of recurrence in subsequent pregnancies [5]. The majority of participants with vaginal bleeding in this study had 2–3 previous pregnancies, a trend also reported by Nnaji *et al*., [13], who observed that multiparity is a significant risk factor for antepartum haemorrhage.

The severity of vaginal bleeding in this study varied, with minor haemorrhage (40.37%) and major haemorrhage (39.17%) being the most common presentations. This distribution is similar to findings from studies in Ghana and Ethiopia, where minor to major haemorrhages accounted for the majority of cases [14, 15]. The proportion of massive haemorrhage (9.96%) in this study is similar to the 9.09% reported by Bhatti [8], when he studied pregnancy outcomes in women with vaginal bleeding in early pregnancy in India. The value is however, slightly higher than the 6–8% reported in other studies in low-resource settings [16], possibly reflecting differences in healthcare access and delayed presentation.

A notable observation was the higher prevalence of vaginal bleeding among participants aged 30–39 years (55.25%). This trend is consistent with findings from studies by Wang *et al*., [17], which showed that maternal age between 30 and 40 years is a critical risk period for complications such as preterm labor and placental abnormalities. Interestingly, participants aged 20–29 years also had a significant prevalence (27.02%), suggesting that factors beyond age, such as parity and socio-economic status, may contribute to the risk.

The findings on the socio-demographic distribution of vaginal bleeding participants mirror previous research in Nigeria and other sub-Saharan African countries. For example, Eze *et al*., [5], found similar socio-demographic trends, particularly the prominence of secondary education among affected individuals. However, this study's higher prevalence of major haemorrhage compared to earlier studies might reflect regional disparities in healthcare delivery and emergency obstetric care availability.

Studies from high-income countries, such as that by Smith *et al*., [3], emphasize the role of early and frequent antenatal care in reducing the incidence and severity of vaginal bleeding. Conversely, the reliance on self-reported symptoms in low-resource settings often results in underdiagnosis or misclassification, a challenge noted in recent systematic reviews [10].

The findings of this study highlight the need for targeted interventions to reduce the prevalence and severity of vaginal bleeding. Enhanced antenatal care services, particularly for high-risk age groups and multiparous women, are critical. Public health strategies should also focus on improving access to emergency obstetric care and educating women about early symptom recognition and prompt healthcare-seeking behavior.

CONCLUSION

This study contributes to the growing body of evidence on the prevalence and severity of vaginal bleeding during pregnancy in Southeast Nigeria. While the findings align with previous research, they also underscore regional disparities in maternal health outcomes. Future studies should explore the underlying causes of these disparities and evaluate the effectiveness of tailored interventions to address them.

Conflict of Interests: Authors declare that no conflict of interest exists in this study and publication

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