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AWARENESS OF THE CAUSES AND THE PREVENTION OF ANTEPARTUM HAEMORRHAGE AMONG ANTENATAL WOMEN IN UNIVERSITY OF BENIN TEACHING HOSPITAL

Hope Oneimo Akerejola[1], Judith Erumumele Asuenimen[2]

[1]Department of Medical Laboratory Science, Edo State University, Iyamho, Edo State, Nigeria

[2]Department of Midwifery, Sancta Maria Catholic College of Nursing Sciences, Uzairue, Edo State, Nigeria

Corresponding Author: hoakerejola@gmail.com

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ABSTRACT

Antepartum haemorrhage (APH) remains a major cause of maternal morbidity and mortality, especially in low- and middle-income countries. This study assessed awareness of the causes and prevention of APH, preventive practices adopted by antenatal women, and factors influencing these practices among women attending the University of Benin Teaching Hospital (UBTH), Edo State. A descriptive cross-sectional survey design was adopted. Systematic random sampling was used to select antenatal women attending the clinic during the study period. Although 213 questionnaires were distributed, 203 were properly completed and valid for analysis, giving a response rate of 95.3%. Data were analysed using SPSS version 27.0. Descriptive statistics were used to summarize the data, while the chi-square test was applied at a 0.05 level of significance. Findings showed that 117 respondents (57.6%) had good awareness of the causes and prevention of APH, while 86 respondents (42.4%) had poor awareness. Preventive practices were also generally good, as 122 respondents (60.1%) demonstrated good practices and 81 respondents (39.9%) demonstrated poor practices. Factors influencing preventive practices had a grand mean of 3.1, and 155 respondents (76.4%) identified the listed items as determinants of preventive behavior. The chi-square test showed a statistically significant relationship between awareness and preventive practices ($\chi^2 = 7.214$, $df = 1$, $p = 0.007$). The study concludes that although awareness and preventive practices were generally satisfactory, gaps still exist. Strengthened antenatal health education, improved access to maternal health services, and supportive health-system practices are recommended.

Keywords: Awareness; Causes; Prevention; Antepartum haemorrhage; Antenatal women.

1. Introduction

Antepartum haemorrhage (APH) is commonly described as bleeding from the genital tract after fetal viability and before delivery. It remains one of the most important obstetric emergencies because it may threaten both maternal and fetal survival. Placental conditions such as placenta previa and placental abruption are repeatedly identified as major causes of APH, and both conditions are associated with maternal anaemia, preterm birth, fetal compromise, and adverse perinatal outcomes [6,5,13].

In many low-resource settings, the burden of APH is intensified by late presentation, inadequate recognition of danger signs, delays in referral, and limited access to emergency obstetric care. Awareness among pregnant women is therefore a central component of prevention and early response. When pregnant women understand the meaning, causes, warning signs, and appropriate actions related to APH, they are more likely to seek care promptly and comply with antenatal recommendations.

Studies from several African settings show that knowledge of obstetric danger signs varies across populations and is influenced by maternal education, parity, age, marital status, and frequency of antenatal clinic attendance [7,8]. Although severe vaginal bleeding is often recognized as a danger sign, knowledge of specific causes and preventive practices remains inconsistent. This suggests that antenatal clinics provide an important opportunity for health education, but the quality, clarity, and retention of information may still need improvement.

In Nigeria, obstetric haemorrhage remains a major contributor to maternal deaths. Hospital-based studies indicate that APH may not always occur at a very high prevalence, but when it occurs it can lead to serious maternal and neonatal complications, including blood transfusion, caesarean delivery, neonatal admission, perinatal loss, and prolonged hospitalization [9,12]. Preventive behavior is shaped not only by knowledge but also by income, occupation, accessibility of health services, family support, cultural beliefs, and health-system factors. This study therefore examined awareness, preventive practices, and the factors influencing preventive practices among antenatal women attending UBTH, Edo State.

2. Literature Review

Ajide et al. [2] investigated knowledge, attitude, and practice of health education strategies for preventing antepartum haemorrhage among pregnant women in a tertiary health institution. The study adopted a cross-sectional design and found that 70% of participants were aware of APH, mainly through antenatal sources. The respondents showed positive attitudes toward preventive measures, but environmental barriers and time constraints limited the translation of knowledge into practice. The authors emphasized targeted interventions such as mobile education programmes to reduce APH-related morbidity.

Elhage et al. [3] examined awareness of obstetric danger signs among pregnant women in Tobruk, Libya. Using an institution-based cross-sectional design, the study found that fatigue, severe headache, and sudden gush of fluids were reported with varying degrees of recognition. Marital status was identified as an independent predictor of awareness. Their findings indicate that social and demographic characteristics may influence how pregnant women understand and respond

to obstetric danger signs.

Mesele et al. [7] studied knowledge of pregnancy danger signs and associated factors among pregnant women in Hosanna, southern Ethiopia. The study reported that 63.2% of respondents had good knowledge of danger signs. Severe vaginal bleeding and blurred vision were among the most commonly identified danger signs. Maternal age, tertiary education, and number of live births were significant predictors of good knowledge.

Mihret and Wondimu [8] assessed knowledge of obstetric danger signs among pregnant women in Debre Tabor, Northwest Ethiopia. They reported that 61% of respondents had poor knowledge, while 39% demonstrated adequate knowledge. Poor knowledge was associated with younger maternal age, no formal education, first pregnancy, and fewer than four antenatal visits. These findings suggest that repeated antenatal contact and formal education are important for improving awareness.

Omotayo et al. [12] conducted a five-year retrospective hospital-based study at the University of Medical Sciences Teaching Hospital, Akure, Nigeria, to determine the prevalence, causes, and outcomes of APH. Among 9,890 deliveries, 207 cases of APH were recorded, giving a prevalence of 2.1%. Placenta previa was the most common cause. Most patients did not experience premature delivery, did not require blood transfusion, and did not experience maternal collapse, although some newborns required neonatal care and a small proportion did not survive.

Despite the growing literature on maternal danger signs and obstetric complications, few studies have focused specifically on the link between awareness of APH and preventive practices among antenatal women within Nigerian tertiary health institutions. There is also limited evidence that simultaneously considers behavioral, socio-cultural, economic, and health-system determinants of preventive practices. This study addresses these gaps by providing evidence from antenatal women attending UBTH.

3. Materials and Methods

3.1. Study Area and Design

The study adopted a descriptive cross-sectional design. It was conducted among antenatal women attending the antenatal clinic of the University of Benin Teaching Hospital (UBTH), Ugbowo, Benin City, Edo State. UBTH is a federal tertiary health institution established in 1973. The hospital provides outpatient, inpatient, emergency, laboratory, obstetric, gynaecological, and specialist services. The antenatal clinic offers routine antenatal care, health education, screening, monitoring, and referral services for high-risk pregnancies. This made the hospital an appropriate setting for assessing awareness and preventive practices regarding APH.

3.2. Sample Size Determination

The sample size was determined using Taro Yamane's formula at a 5% margin of error. With an estimated population of 376 antenatal women, the minimum sample size was 194. After adjusting for a 5% non-response rate, 203 participants were recruited and included in the final analysis.

3.3. Sampling Method

A systematic random sampling technique was used. The sampling interval was calculated by dividing the estimated monthly antenatal population of 376 by the calculated sample size of 203, giving an interval of approximately 2. After selecting the first eligible participant from the initial interval, every second eligible antenatal woman was selected until the required sample size was achieved.

3.4. Data Collection

Data were collected using a structured questionnaire. The questionnaire covered socio-demographic characteristics, awareness of the causes and prevention of APH, preventive practices, and factors influencing preventive practices. Completed questionnaires were retrieved on the spot to reduce missing data and ensure a high response rate. Data collection lasted approximately four weeks.

3.5. Validity and Reliability of Instrument

Face and content validity were used to ensure that the questionnaire was appropriate and relevant to the study objectives. A pilot test involving 20 respondents, representing approximately 10% of the sample size, was conducted among nurses at Edo Specialist Hospital, Benin City, who were outside the main study population. Cronbach's alpha reliability testing produced a coefficient above 0.71, indicating that the instrument was sufficiently reliable.

3.6. Method of Data Analysis

Data were analysed using SPSS version 27.0. Frequencies, percentages, and means were used to summarize socio-demographic variables, awareness, preventive practices, and influencing factors. The chi-square test of association was used to examine the relationship between awareness and preventive practices. Statistical significance was set at $p < 0.05$.

3.7. Ethical Approval and Consent

Ethical approval was obtained from the Health Research Ethics Committee of UBTH, Benin City (ADM/E22/A/VOL.VII/4831169177). Written informed consent was obtained from participants before enrolment. Participation was voluntary, and confidentiality was maintained throughout the study.

4. Results

4.1. Socio-demographic Characteristics of Respondents

A total of 203 antenatal women participated in the study. Most respondents were between 25 and 29 years (25.1%), followed by those aged 30–34 years (22.7%) and 18–24 years (20.7%). The majority were married (70.0%), while 18.7% were single. More than half had secondary education (51.2%), and 27.6% had tertiary education. Traders or business owners formed the largest occupational group (31.1%), followed by self-employed respondents (23.6%). Most respondents were Edo (48.3%) and Christian (82.8%). Regarding obstetric characteristics, 43.3% had experienced one to two pregnancies, 42.9% were at 29–36 weeks gestation, and 80.8% reported no previous history of APH. Regular antenatal attendance was reported by 64.5% of respondents.

Table 1: Socio-demographic characteristics of respondents

Items	Frequency	Percent (%)
Age (in years)		
18–24	42	20.7
25–29	51	25.1
30–34	46	22.7
35–39	34	16.7
40–44	20	9.9
45–49	10	4.9
Marital status		
Single	38	18.7
Married	142	70.0
Cohabiting	11	5.4
Divorced/Separated	7	3.4
Widowed	5	2.5
Highest educational level		
No formal education	14	6.9
Primary education	29	14.3
Secondary education	104	51.2
Tertiary education	56	27.6
Occupation		
Unemployed	41	20.2
Trader/Business owner	63	31.1
Civil/Public servant	37	18.2
Self-employed	48	23.6
Others	14	6.9
Ethnicity		
Edo	98	48.3
Igbo	41	20.2
Yoruba	32	15.8
Hausa	12	5.9
Others	20	9.8
Religion		
Christianity	168	82.8
Islam	29	14.3
Traditional/Other	6	3.0
Number of pregnancies		
1–2	88	43.3
3–4	73	36.0
5 and above	42	20.7
Gestational age of current pregnancy		
20–28 weeks	61	30.0

Items	Frequency	Percent (%)
29–36 weeks	87	42.9
37–40 weeks	55	27.1
Previous history of antepartum haemorrhage		
Yes	39	19.2
No	164	80.8
Attendance at antenatal clinics		
Regularly	131	64.5
Occasionally	57	28.1
First visit only	15	7.4

4.2. Awareness of the Causes and Prevention of Antepartum Haemorrhage

Table 2 shows that awareness was generally good. The highest mean score was recorded for awareness that placenta previa usually causes painless vaginal bleeding and that knowledge of APH helps women recognize danger signs early and seek care. The grand mean was 1.6, which was above the cut-off point of 1.5. Overall, 117 respondents (57.6%) had good awareness, while 86 respondents (42.4%) had poor awareness.

Table 2: Awareness of the causes and prevention of antepartum haemorrhage among antenatal women

Item	Correct	Wrong	Mean	Remark
Meaning of antepartum haemorrhage	128 (63.1)	75 (36.9)	1.6	Good
Most common cause of antepartum haemorrhage	111 (54.7)	92 (45.3)	1.5	Good
Placenta previa usually causes painless vaginal bleeding	134 (66.0)	69 (34.0)	1.7	Good
Placental abruption is often associated with abdominal pain and bleeding	97 (47.8)	106 (52.2)	1.5	Poor
Recognition of what is not a cause of antepartum haemorrhage	103 (50.7)	100 (49.3)	1.5	Good
Importance of knowing about APH to recognize danger signs early and seek care	139 (68.5)	64 (31.5)	1.7	Good
Risk factor for antepartum haemorrhage	95 (46.8)	108 (53.2)	1.5	Poor
Regular antenatal clinic attendance helps prevent complications	121 (59.6)	82 (40.4)	1.6	Good
Reporting immediately to hospital after late-pregnancy vaginal bleeding	124 (61.1)	79 (38.9)	1.6	Good
Grand mean			**1.6**	**Good**

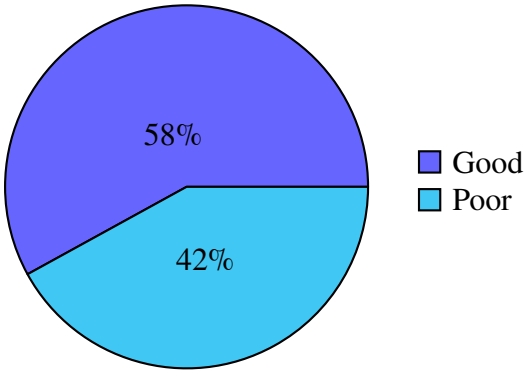

Figure 1: Level of awareness of causes and prevention of antepartum haemorrhage among antenatal women attending UBTH.

4.3. Preventive Practices Adopted by Antenatal Women

Table 3 shows that the respondents generally adopted good preventive practices. The highest mean score was recorded for following nutritional advice during antenatal care (mean = 2.9). Other good practices included avoiding harmful practices, seeking health education, following advice on physical activity and rest, reporting unusual symptoms, and encouraging partner or family support. The grand mean was 2.7, above the cut-off point of 2.5. Overall, 122 respondents (60.1%) had good preventive practices, while 81 respondents (39.9%) had poor practices.

Table 3: Preventive practices of antepartum haemorrhage adopted by antenatal women

Item	Always	Sometimes	Rarely	Never	Mean
Attend all scheduled antenatal visits	65 (32.0)	42 (20.7)	53 (26.1)	43 (21.2)	2.6
Follow nutritional advice during antenatal care	67 (33.0)	64 (31.5)	59 (29.1)	13 (6.4)	2.9
Adhere to prescribed medications during pregnancy	57 (28.1)	63 (31.0)	52 (25.6)	31 (15.3)	2.7
Avoid harmful practices that may jeopardize pregnancy	58 (28.6)	72 (35.5)	42 (20.7)	31 (15.3)	2.8
Report vaginal bleeding immediately to health provider	56 (27.6)	62 (30.5)	48 (23.6)	37 (18.2)	2.7
Seek health education about APH prevention	59 (29.1)	70 (34.5)	42 (20.7)	32 (15.8)	2.8
Follow advice on physical activity and rest	66 (32.5)	65 (32.0)	44 (21.7)	28 (13.8)	2.8
Attend group health talks or counselling sessions	48 (23.6)	52 (25.6)	57 (28.1)	46 (22.7)	2.5
Monitor and report unusual symptoms during pregnancy	67 (33.0)	56 (27.6)	56 (27.6)	24 (11.8)	2.8
Encourage partner or family support	60 (29.6)	70 (34.5)	42 (20.7)	31 (15.3)	2.8
Grand mean					**2.7**

Figure 2: Preventive practices of antepartum haemorrhage adopted by antenatal women attending UBTH.

4.4. Factors Influencing Preventive Practices

Table 4 shows that several factors influenced preventive practices. Accessibility and affordability of health services recorded the highest mean score (3.3). Quality of health education and health-system factors such as staff attitude and clinic environment also recorded high mean scores (3.2 each). The grand mean was 3.1, which indicates that most respondents considered the listed variables as factors influencing their preventive practices. Overall, 155 respondents (76.4%) identified the listed items as influencing factors, while 48 respondents (23.6%) considered them non-factors.

Table 4: Factors influencing preventive practices of antepartum haemorrhage among antenatal women

Item	SA	A	D	SD	Mean
Occupation or work schedule affects ANC attendance	85 (41.9)	70 (34.5)	28 (13.8)	20 (9.9)	3.1
Income affects access to preventive resources and care	78 (38.4)	82 (40.4)	25 (12.3)	18 (8.9)	3.1
Cultural and traditional beliefs influence preventive practices	60 (29.6)	72 (35.5)	40 (19.7)	31 (15.3)	2.8
Accessibility and affordability of health services affect practices	95 (46.8)	78 (38.4)	20 (9.9)	10 (4.9)	3.3
Quality of health education during ANC influences preventive measures	88 (43.3)	82 (40.4)	20 (9.9)	13 (6.4)	3.2
Previous obstetric history influences compliance	55 (27.1)	70 (34.5)	45 (22.2)	33 (16.3)	2.7
Staff attitude and clinic environment affect preventive practices	90 (44.3)	78 (38.4)	25 (12.3)	10 (4.9)	3.2
Family or partner support influences adherence	80 (39.4)	75 (36.9)	30 (14.8)	18 (8.9)	3.1

Item	SA	A	D	SD	Mean
Grand mean					**3.1**

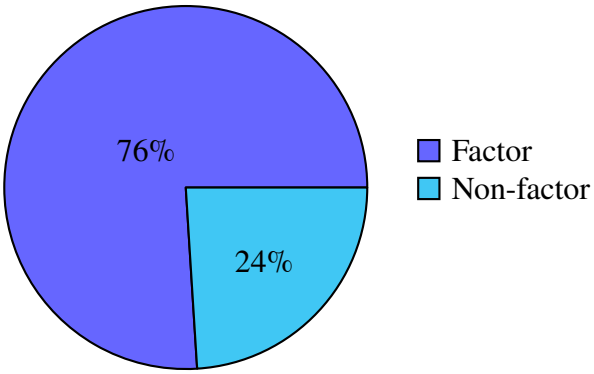

Figure 3: Factors influencing preventive practices of antepartum haemorrhage among antenatal women attending UBTH.

4.5. Relationship between Awareness and Preventive Practices

Table 5 shows the relationship between awareness and preventive practices. Among respondents with good awareness, 85 (73%) had good preventive practices, while 32 (27%) had poor practices. Among respondents with poor awareness, 37 (43%) had good practices, while 49 (57%) had poor practices. The chi-square test showed a statistically significant relationship between awareness and preventive practices ($\chi^2 = 7.214$, $df = 1$, $p = 0.007$). Since the p-value is less than 0.05, the null hypothesis was rejected. This means that women with good awareness were more likely to adopt good preventive practices.

Table 5: Relationship between awareness and preventive practices of antepartum haemorrhage

Awareness	n	Good practice	Poor practice	χ^2	p value
Good	117 (58%)	85 (73%)	32 (27%)	7.214	0.007
Poor	86 (42%)	37 (43%)	49 (57%)		

5. Discussion

The study involved 203 pregnant women attending the antenatal clinic at UBTH. Most respondents were within the active reproductive age group, especially 25–29 years and 30–34 years. This is consistent with related antenatal studies in which most participants were women in their peak reproductive years. The high proportion of married respondents may also have implications for maternal support and health-seeking behavior, since marital status has been associated with awareness of obstetric danger signs in previous studies.

Educational attainment appeared favorable, with most respondents having secondary or tertiary education. This may have contributed to the generally good level of awareness observed in the study. Previous studies by Mesele et al. [7] and Mihret and Wondimu [8] similarly reported that education

is an important predictor of knowledge of pregnancy danger signs. The occupational profile of the respondents, especially the large number of traders and self-employed women, suggests that work schedule and income may influence clinic attendance and compliance with preventive advice.

The findings showed that 57.6% of respondents had good awareness of APH, while 42.4% had poor awareness. This indicates that although awareness was generally satisfactory, a substantial proportion of antenatal women still lacked adequate knowledge. Respondents were more knowledgeable about the meaning of APH, placenta previa, painless vaginal bleeding, and the need to report bleeding promptly. However, knowledge gaps were observed in relation to placental abruption and advanced maternal age as a risk factor. These gaps are important because incomplete knowledge may delay appropriate action during obstetric emergencies.

Preventive practices were also generally good, as 60.1% of respondents demonstrated good practices. The strongest preventive practice was following nutritional advice given during antenatal care. Other positive behaviors included avoiding harmful practices, seeking health education, following advice on rest and physical activity, reporting unusual symptoms, and encouraging family or partner support. The lowest mean score was recorded for attendance at group health talks or counselling sessions, suggesting that structured health education activities may need to be strengthened or made more accessible.

The study further showed that multiple factors influenced preventive practices. Accessibility and affordability of health services recorded the highest mean score, indicating that practical access to care is central to prevention. Quality of antenatal health education, staff attitude, clinic environment, income, occupation, family support, cultural beliefs, and previous obstetric history also shaped preventive behavior. These findings support the view that maternal health behavior is influenced by both individual knowledge and broader social and health-system conditions.

The chi-square analysis demonstrated a statistically significant relationship between awareness and preventive practices. Respondents with good awareness were more likely to report good preventive practices than respondents with poor awareness. This confirms that improving knowledge of APH is likely to strengthen preventive behavior. However, since other factors also influence practice, health education should be combined with measures that improve affordability, access, respectful care, and family involvement.

6. Conclusion

This study concludes that antenatal women attending UBTH demonstrated generally good awareness of the causes and prevention of antepartum haemorrhage and generally good preventive practices. However, important knowledge gaps were identified, especially regarding placental abruption and maternal age as a risk factor. The study also showed that preventive practices were influenced by several socio-economic, cultural, family, and health-system factors.

The statistically significant relationship between awareness and preventive practices indicates that improved knowledge increases the likelihood of appropriate preventive behavior. Antenatal health education should therefore be strengthened, made more practical, and repeated throughout pregnancy. Health workers should emphasize the causes, risk factors, danger signs, and urgent response required in cases of vaginal bleeding during pregnancy. Improving access to affordable

maternal health services and promoting supportive family involvement may further reduce the risk and consequences of APH.

Conflict of Interest

The authors declare no conflict of interest.

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