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FACTORS INFLUENCING THE INCREASE IN ANTEPARTUM HEMORRHAGE AMONG PREGNANT WOMEN ATTENDING ANTENATAL CLINICS AT EKITI STATE UNIVERSITY TEACHING HOSPITAL, EKITI STATE

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Abstract

Antepartum hemorrhage is defined as vaginal bleeding that occurs after 20 weeks of gestation but before the onset of labor. It remains a significant cause of maternal and fetal morbidity and mortality, necessitating an understanding of its prevalence, risk factors, and contributing factors. This study aimed to determine the factors influencing the increase in antepartum hemorrhage among pregnant women attending antenatal clinics at Ekiti State University Teaching Hospital, Ekiti State. The study employed a simple random sampling technique, with data collected using a self-developed, semi-structured questionnaire containing 43 items. A Total of 74 respondents participated, achieving a valid return rate of 100 percent. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 28 and Microsoft Office Excel version 2016, employing descriptive statistics such as frequencies and percentages. The findings revealed that 13.5 percent of the respondents had experienced antepartum hemorrhage, with varying frequencies of occurrence. Identified risk factors included high parity (27.0 percent strongly agreed, 51.4 percent agreed), pregnancy complications (47.3 percent strongly agreed, 41.9 percent agreed), and a history of uterine surgery (32.4 percent strongly agreed, 39.2 percent agreed). Additionally, factors such as advanced maternal age (41.9 percent strongly agreed, 45.9 percent agreed) and multiple pregnancies (14.9 percent strongly agreed, 48.6 percent agreed) were significant contributors. The study underscores the need for heightened awareness, improved prenatal screening, and tailored interventions to mitigate antepartum hemorrhage risks. Health education on risk reduction strategies and early medical intervention is essential in preventing complications associated with antepartum hemorrhage.

Keywords: Antepartum hemorrhage, maternal health, pregnancy complications, risk factors, prenatal care, bleeding disorders, obstetric emergencies.

Introduction

Globally, maternal mortality is unacceptably high, about 287,000 women died during and following pregnancy and childbirth in 2020 (WHO, 2024). Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births (World Bank, 2024). According to Jan & Tereza (2022), Hemorrhage remains the leading preventable cause of maternal death worldwide, accounting for over one-quarter (27%) deaths. The absolute majority, 95% of all maternal deaths, still occur in low- and lower-middle-income countries. Hemorrhage emerges as the major cause of severe maternal morbidity in almost all 'near miss' audits in both developed and developing countries (Nik et al., 2022). Antepartum

Hemorrhage is defined as bleeding from the genital tract after the 24th week of pregnancy, and before the onset of labor (Myles, 2020).

Antepartum Hemorrhage (APH) traditionally refers to any vaginal bleeding occurring after 24 weeks gestation. However, as the age of viability has reduced can be considered for any bleeding occurring after 20 weeks gestation (Shaw, 2023). According to Kalu & Chukwurah (2022), Obstetric hemorrhage is one of the leading causes of maternal mortality in Nigeria. APH has a heterogeneous pathophysiology and cannot be predicted. Abruption is usually a sudden and unexpected obstetric emergency, not predictable by means of known reproductive risk factors (NHS, 2020). More to that, there is limited evidence to support interventions to prevent APH.

Antepartum hemorrhage is listed as a maternal complication in 15.1% of fetal and 7.1% of early newborn deaths worldwide (Paul & Extension, 2023). APH is responsible for an estimated 6.5% of maternal deaths worldwide (Say et al., 2021). Up to 1/5 of all very preterm babies are born in association with APH (Mu et al., 2022).

Obstetric hemorrhage may occur during pregnancy, either antepartum (due to placenta previa or placental abruption) or most commonly postpartum (due to uterine atony, retained placenta, uterine rupture, or cervical, vaginal, or perineal laceration). Sub-Saharan Africa and Southern Asia accounted for around 87% (253,000) of the estimated global maternal deaths in 2020. Sub-Saharan Africa alone accounted for around 70% of maternal deaths (202,000), while Southern Asia accounted for around 16% (47,000). At the same time, between 2000 and 2020, Eastern Europe and Southern Asia achieved the greatest overall reduction in maternal mortality ratio (MMR): a decline of 70% (from an MMR of 38 to 11) and 67% (from an MMR of 408 down to 134), respectively (WHO, 2024). Sub-Saharan Africa has a very high MMR in 2020, despite this, it also achieved a substantial reduction in MMR of 33% between 2000 and 2020 (WHO, 2024). Four Sustainable Development Goals (SDGs) sub-regions roughly halved their Maternal Mortality Rates (MMRs) during this period: Eastern Africa, Central Asia, Eastern Asia, and Northern Africa and Western Europe reduced their MMR by around one third. Overall, the MMR in least-developed countries declined by just under 50%. In land locked developing countries, the MMR decreased by 50% (from 729 to 368). In small island developing countries, the MMR declined by 19% (from 254 to 206). The high number of maternal deaths in some areas of the world reflects inequalities in access to quality health services and highlights the gap between rich and poor. The MMR in low-income countries in 2020 was 430 per 100,000 live births versus 13 per 100,000 live births in high income countries (WHO, 2024).

According to WHO (2024), Humanitarian, conflict, and post-conflict settings hinder progress in reducing the burden of maternal mortality. In 2020, according to the Fragile States Index, 9 countries were “very high alert” or “high alert” (from highest to lowest: Yemen, Somalia, South Sudan, the Syrian Arab Republic, the Democratic Republic of the Congo, the Central African Republic, Chad, Sudan and Afghanistan); these countries had MMRs ranging from 30 (the Syrian Arab Republic) to 1223 (South Sudan) in 2020. The average MMR for very high and high alert fragile states in 2020 was 551 per 100,000, over double the world average. Women in low-income countries have a higher lifetime

risk of death of maternal death. A woman's lifetime risk of maternal death is the probability that a 15-year-old woman will eventually die from a maternal cause. In high income countries, this is 1 in 5300, versus 1 in 49 in low-income countries (WHO, 2024). Nationally, the data are estimated with a regression model using information on the proportion of maternal deaths among non-AIDS deaths in women ages 15-49, fertility, birth attendants, and GDP.

According to (WHO 2024), women die as a result of complications during and following pregnancy and childbirth. Most of these complications develop during pregnancy and most are preventable or treatable. Other complications may exist before pregnancy but are worsened during pregnancy, especially if not managed as part of the woman's care. The major complications that account for nearly 75% of all maternal deaths are:

- severe bleeding (mostly bleeding after childbirth);
- infections (usually after childbirth);
- high blood pressure during pregnancy (pre-eclampsia and eclampsia);
- complications from delivery; and
- Unsafe abortion.

To avoid maternal deaths, it is vital to prevent unintended pregnancies. All women, including adolescents, need access to contraception, safe abortion services to the full extent of the law, and quality post-abortion care (Askew et al., 2023). Most maternal deaths are preventable, as the health-care solutions to prevent or manage complications are well known. All women need access to high quality care in pregnancy, and during and after childbirth. Maternal health and newborn health are closely linked. It is particularly important that all births are attended by skilled health professionals, as timely management and treatment can make the difference between life and death for the women as well as for the newborns (Jacobsson, 2023).

Severe bleeding after birth can kill a healthy woman within hours if she is unattended. Injecting oxytocic's immediately after childbirth effectively reduces the risk of bleeding. Infection after childbirth can be eliminated if good hygiene is practiced and if early signs of infection are recognized and treated in a timely manner. Pre-eclampsia should be detected and appropriately managed before the onset of convulsions (eclampsia) and other life-threatening complications. Administering drugs such as magnesium sulfate for pre-eclampsia can lower a woman's risk of developing eclampsia (WHO, 2024).

According to Bethan (2024), Antepartum hemorrhage (APH) is defined as genital tract bleeding from 24+0 weeks' gestation and complicates 3-5% of pregnancies. The three most important causes of APH are placenta previa, placental abruption and vasa previa, these result in high morbidity and mortality for both mother and baby. Other causes of APH include lower genital tract sources such as cervical polyps, vaginitis and cervicitis (Bethan, 2024).

Statement of the Problem

Antepartum hemorrhage is a very serious problem and contributes significantly to maternal and neonatal morbidity and mortality in developing countries. Identification of the risk factors of APH will help for prevention and controls programs (Dibaba et al.,

2021). Antepartum hemorrhage is one of the cases seen among pregnant women attending antenatal clinics at the Obstetrics and Gynecology department of the of Ekiti State University Teaching Hospital, Ado-Ekiti within the last few months\years. It constitutes one of the major causes of maternal mortality in Ekiti State. On clinical posting, it was observed that the inflow of unbooked patients within the age of 25-35years admitted into antenatal ward on the account of antepartum hemorrhage was observed at the Antenatal ward Ekiti State University Teaching Hospital. This prompted to research on the factors influencing the increase in antepartum hemorrhage among women attending antenatal clinic in Ekiti State University Teaching Hospital.

Based on all these facts, it is of utmost importance to determine the factors influencing the increase of Antepartum hemorrhage.

Objectives of the study

To determine the factors influencing of antepartum hemorrhage among pregnant women attending antenatal clinic at Ekiti state University Teaching Hospital, Ekiti State. The Specific Objectives are:

1. To assess prevalence of ante-partum haemorrhage among pregnant women attending antenatal clinic at Ekiti State University Teaching Hospital, Ekiti State.
2. To assess factors associated with increase in ante-partum haemorrhage among pregnant women attending antenatal clinic at the Ekiti State University Teaching Hospital, Ekiti State.
3. To assess the knowledge of ante-partum haemorrhage among pregnant women attending antenatal clinic at Ekiti State University Teaching Hospital, Ekiti State.

Research Questions

1. What is the prevalence of ante-partum haemorrhage among pregnant women attending antenatal clinic at Ekiti State University Teaching Hospital, Ekiti State?
2. What are the risk factors associated with ante-partum haemorrhage among pregnant women attending antenatal clinic at Ekiti State University Teaching Hospital, Ekiti State?
3. What is the knowledge of ante-partum haemorrhage among pregnant women attending antenatal clinic at Ekiti State University Teaching Hospital, Ekiti State?

Research Hypothesis

1. There is no significant relationship between the age of mothers and increase in antepartum hemorrhage.
2. There is no significant relationship between the knowledge of mothers and increase in antepartum hemorrhage.

Scope of the study

This research was carried out in the Ado-Ekiti with the use of pregnant women attending antenatal clinics at the Obstetrics and Gynecology department of the Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti State.

Literature Review

Empirical Review

Obstetric hemorrhage remains the leading preventable cause of maternal death worldwide, accounting for over one-quarter (27%) deaths (Jan & Tereza, 2022). The adult lifetime risk of maternal mortality in sub-Saharan Africa was 1 in 38, compared to 1 in 3700, among women in high resource countries (Njoroge, 2020). A number of clinical and epidemiological studies have been done to identify the risk factors associated with antepartum hemorrhage (Oladapo et al., 2022).

Ranjani-Priya, (2020) in her study conducted in India reported that the incidence of antepartum hemorrhage was 3.8%. Abruptio placenta (56%) constituted the largest group. Maximum number of patients was in the age group 20 to 30 years in both abruption (53.5%) and placenta previa (52.5%). In abruption 53.6% and in placenta previa 79% of the patients were multiparous. Majority (56%) of the patients with antepartum hemorrhage had gestational age of 28 to 34 weeks. Mean period of gestation in APH patients was 33.4 weeks. In abruption, 64% of the patients and in placenta previa 42% were in the age group of 31-34 weeks and 6 days. In the present study, 64% of the patients were anemic at the time of admission. Majority 34% of the anemic patients had Hb of 7.5-9.9 gm (Ranjani-Priya, 2020). Majority of the cases of APH were due to abruptio (56%) followed by placenta previa (38%), undetermined (6%) which is concordance to studies done by Adekanle et al., (2019) where higher incidence of placenta previa was reported followed by abruption. the incidence of APH was highest 57.14% Abruption, 52.63%. placenta previa, 33.33% undetermined in the age group 20- 24 years followed by 17.86% abruption, 36.84% placenta previa. the incidence of antepartum hemorrhage was also more common in nullipara women than in multipara women, out of 56 cases of abruption, 10.71% were multiparous and 89.29% were nulliparous. the incidence of placenta previa in nullipara was 73.68% compared to 26.32% in multiparous (Ranjani-Priya, 2020).

In the study conducted by Ranjani-Priya, (2020) the maximum 35.7% of the patients with abruption had Hb of 5 to 7.4 gm and 42.1% of patients with placenta previa had Hb of 7.5 to 9.9 gm. Pre-eclampsia (36%) was the most common risk factor for APH. The commonest mode of delivery was caesarean delivery i.e. 60%. In abruption majority 53.6% had normal delivery. 89.5% of placenta previa had caesarean section which was the largest group. Retrospectively, 5.3% of the patients with placenta previa had placenta accreta. DIC and renal failure were seen in 3.6% each (Ranjani- Priya, 2020). Majority (64%) of the patients in this study required blood transfusions. 64% of abruption and 68% of placenta previa patients required blood transfusion. IUD or still births were noted in 31% of the cases. Neonatal deaths were observed in 5.8%. Prematurity was the most common complication observed in the present study in 82.8% of the cases followed by neonatal jaundice which was observed in 51% of the cases. NICU admissions were present in 8.5% of the cases. Okukundakwe, (2019) in his report also reported that 56% of the patients had an APGAR score of <7 at 1 min and 63% had an APGAR of 4 to 6 at 5 min. Maximum number of births had birth weight of 1.5-2 Kg. In previa 17, majority

(39.2%) of births had birth weight of 1.5-2 Kg and in undetermined majority (66.7%) had birth weight of 2.5-3 Kg.

A major risk factor - placenta previa occurs when the blastocyst is implanted low in the uterine cavity. The factors associated with placenta previa are advancing maternal age, increasing maternal parity, large placental size (Multiple pregnancy), endometrial damage (Previous dilatation and curettage), uterine-scars like previous caesarean section or myomectomy, pathology-like endometritis, placental-pathology such as marginal cord insertions and succenturiate lobes. Previous history of placental previa and, curiously, cigarette smoking increases the chance of placental previa (Kuribayashi et al., 2021).

Vasa previa is described when fetal vessels coursing through the membranes over the internal cervical os and below the fetal presenting part, unprotected by placental tissue or the umbilical cord. This can be secondary to a velamentous cord insertion in a single or bi-lobed placenta or from fetal vessels running between lobes of a placenta with one or more accessory lobes. The incidence is approximately 1:6000 pregnancies, but the condition may be under-reported. Vasa previa carries a significant risk to the fetus. Unprotected fetal vessels are at risk of disruption with consequent fetal hemorrhage, when the fetal membranes are ruptured either spontaneously or artificially. Therefore, vasa previa often presents with fresh vaginal bleeding and fetal heart rate abnormalities at the time of membrane rupture (Dibaba et al., 2021; Ranjani-Priya, 2020).

Previous studies have also highlighted that antepartum hemorrhage is an important cause of maternal and neonatal morbidity and mortality (Adekanle et al., 2019; Oladapo et al., 2022; Ranjani-Priya, 2020). There have been many cases reported but there is no recent anecdotal evidences to substantiate the characteristics associated with this condition in our local environment.

Methodology

A descriptive cross-sectional survey was used for this study to identify the knowledge and factors influencing the increase in antepartum hemorrhage among pregnant women attending antenatal clinic at Ekiti State University Teaching Hospital. The target population are the pregnant women attending antenatal clinics at the Obstetrics and Gynecology Department of the Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti State. The study population consists of selected pregnant women attending antenatal clinics at the Obstetrics and Gynecology Department of the Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti State. The sample size of 74 pregnant women.was selected using the Taro Yamane's formula. Simple random sampling was used to select respondents that participated in the study.

Inclusion Criteria

Pregnant women booked and attending antenatal clinic at Ekiti State University Teaching Hospital, Ado-Ekiti within the study period.

Pregnant women with bleeding per vagina after 28 weeks of gestation.

Pregnant women who gave informed consent to participating in this study.

Exclusion Criteria

Pregnant women who were not registered or unbooked attending antenatal clinic at Ekiti

State University Teaching Hospital, Ado-Ekiti within the study period for the first time.
Pregnant women with bleeding per vagina before 28 weeks of gestation.
Pregnant women suffering from other bleeding disorders.
The validity of the instrument was ensured and a pilot study was conducted to determine the reliability of the instrument using 10% of the sample size. Cronbach's Alpha of 0.7 was gotten, which showed that instrument had a high proportion of internal consistency. Study data was collected using self-administered questionnaires. A semi-structured questionnaire was administered by the researcher. Data collected was checked for errors, entered, cleaned and analyzed using the SPSS statistical version 28. Data was presented using tables and graphs and data summation using means, measures of association between dependent and independent variables was done using chi square test and p-value set at 0.05.

Ethical Consideration

A letter of introduction from the school was obtained from the school. Ethical consent was obtained from the Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti state. Written consent was obtained from the respondents after the study objectives, the extent, the benefits and risks were properly explained to the respondents. Study participants were assured of confidentiality and this was indicated on the questionnaire. Participation was voluntary and Participants were offered the choice of pulling out at any point of the study. The participants were given a consent portion to sign on the questionnaire.

Results

Table 1: Socio-demographic characteristics of the Respondents

Variable	Frequency (n)	Percentage (%)
Age		
20-24	18	24.3
25-29	21	28.4
30-34	21	28.4
35 and above	14	18.9
Total	**74**	**100**
Parity (number of previous pregnancies)		
None	16	21.6
One	21	28.4
Two	25	33.8
Three	8	10.8
Four and above	4	5.4
Total	**74**	**100**
Marital status		
Single	7	9.5
Married	63	85.1
Divorced	4	5.4
Total	**74**	**100**
Occupation		
Employed	27	36.4
Self -employed	37	50.0
Unemployed	10	13.6
Total	**74**	**100**
Religion		
Christianity	61	82.4
Islam	11	14.9
Others	2	2.7

Total	**74**	**100**
Ethnicity		
Hausa	7	9.4
Igbo	15	20.3
Yoruba	50	67.6
Others	2	2.7
Total	**74**	**100**
Educational Level		
Primary	5	6.8
Secondary	16	21.6
College/tertiary	53	71.6
Total	**74**	**100**

The age distribution of the participants showed that 18 (24.3%) were between 20-24 years, 21 (28.4%) were aged 25-29 years, another 21 (28.4%) were within the 30-34 years range, while 14 (18.9%) were 35 years and above. Regarding parity (number of previous pregnancies), 16 (21.6%) participants had no previous pregnancies, 21 (28.4%) had one, 25 (33.8%) had two, 8 (10.8%) had three, while 4 (5.4%) had four or more pregnancies. In terms of marital status, the majority were married 63 (85.1%), while 7 (9.5%) were single and 4 (5.4%) were divorced. For occupation, 27 (36.4%) were employed, 37 (50.0%) were self-employed, and 10 (13.6%) were unemployed. Religious affiliation showed that Christianity was the dominant religion among respondents 61 (82.4%), followed by Islam 11 (14.9%), and other religions 2 (2.7%). Ethnic distribution revealed that the majority were Yoruba 50 (67.6%), followed by Igbo 15 (20.3%), Hausa 7 (9.4%), and other ethnic groups 2 (2.7%). In terms of educational attainment, 5 (6.8%) had only primary education, 16 (21.6%) attained secondary education, while the majority 53 (71.6%) had college or tertiary education.

Table 2: Knowledge of APH among pregnant women

Variable	Frequency (n)	Percentage (%)
Have you heard of antepartum hemorrhage before?		
Yes	68	91.9
No	6	8.1
Total	**74**	**100**
If yes, from where?		
Hospital	63	92.7
Radio	3	4.4
Friends	2	2.9
Total	68	**100**
What are the symptoms of antepartum hemorrhage?		
Bleeding from the vagina	64	86.4
Whitish discharge from the vagina	6	8.1
Pain in the vagina	3	4.1
Others	1	1.4
Total	**74**	**100**
The following are the causes of antepartum hemorrhage? (tick as many as you think is correct)		
Dangerous lifestyles like smoking and drinking	12	16.2
Multiple pregnancies	22	29.7
Abnormal placenta positions	17	23.0
Previous caesarean section	10	13.5
Abnormal fetal formation	4	5.4
Previous abortions/miscarriages	3	4.1

When the mother is old	1	1.4
Fall/trauma to the abdomen	2	2.7
Sex during pregnancy	3	4.0
Total	**74**	**100**
Another name for antepartum hemorrhage is miscarriage		
Yes	29	39.2
No	45	60.8
Total	**74**	**100**
When can antepartum hemorrhage happen the most		
First trimester	29	39.2
Second trimester	30	40.5
Third trimester	6	8.1
Any time	9	12.2
Total	**74**	**100**
Antepartum hemorrhage can cause severe harm to the following		
The mother alone	3	4.0
The baby alone	4	5.4
Both the baby and the mother	66	89.2
None of them	1	1.4
Total	**74**	**100**

The knowledge of antepartum hemorrhage among pregnant women revealed that 68 (91.9%) had heard of the condition before, while 6 (8.1%) had not. Among those who had heard of it, 63 (92.7%) received information from hospitals, 3 (4.4%) from the radio, and 2 (2.9%) from friends. Regarding symptoms, 64 (86.4%) identified vaginal bleeding, 6 (8.1%) mentioned whitish vaginal discharge, 3 (4.1%) noted pain in the vagina, and 1 (1.4%) indicated other symptoms. Concerning the causes of antepartum hemorrhage, 12 (16.2%) attributed it to dangerous lifestyles such as smoking and drinking, 22 (29.7%) to multiple pregnancies, 17 (23.0%) to abnormal placenta positions, 10 (13.5%) to a previous caesarean section, 4 (5.4%) to abnormal fetal formation, 3 (4.1%) to previous abortions or miscarriages, 1 (1.4%) to advanced maternal age, 2 (2.7%) to falls or trauma to the abdomen, and 3 (4.0%) to sex during pregnancy. When asked whether antepartum hemorrhage is another name for miscarriage, 29 (39.2%) responded yes, while 45 (60.8%) disagreed. In terms of when antepartum hemorrhage occurs most, 29 (39.2%) indicated the first trimester, 30 (40.5%) stated the second trimester, 6 (8.1%) mentioned the third trimester, and 9 (12.2%) believed it could happen at any time. On the potential harm caused by antepartum hemorrhage, 3 (4.0%) believed it affects only the mother, 4 (5.4%) said it harms only the baby, 66 (89.2%) recognized that it affects both the mother and baby, while 1 (1.4%) believed it has no impact on either.

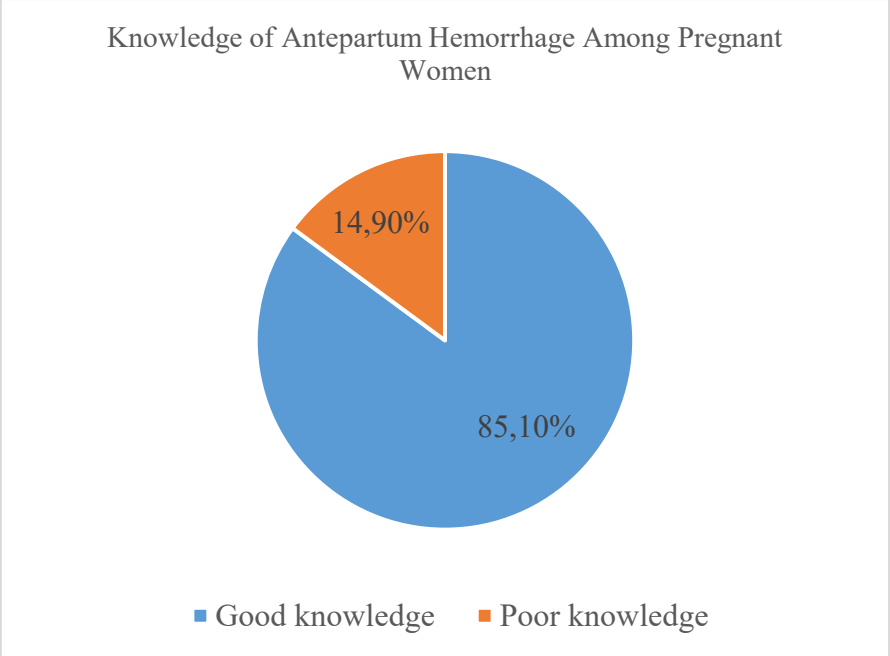

Figure 1: Pie chart representing the knowledge of antepartum hemorrhage among pregnant women

The pie chart representing the knowledge of antepartum hemorrhage among pregnant women. 85.1% of the women have good knowledge of antepartum hemorrhage, while 14.9% have poor knowledge of antepartum hemorrhage.

Table 3: Prevalence of Antepartum Hemorrhage Among Pregnant Women

Variable	Frequency (n)	Percentage (%)
Have you experience any bleeding from your vagina in this pregnancy or in your previous pregnancies?		
Yes	10	13.5
No	64	86.5
Total	**74**	**100**
If yes, how many episodes of bleeding have you had? System		
One	1	10.0
Two	3	30.0
Three	4	40.0
More than Three	2	20.0
Total	10	**100**
How was it managed?		
I was managed on injection for three months	20	27.0
Using of drugs	38	51.4
Bedrest and medications	10	13.5
I can't recall vividly	6	8.1
Total	**74**	**100**

The prevalence of antepartum hemorrhage among pregnant mothers indicated that 10 (13.5%) had experienced vaginal bleeding during their current or previous pregnancies, while 64 (86.5%) had not. Among those who had experienced bleeding, 1 (10.0%) reported a single episode, 3 (30.0%) had two episodes, 4 (40.0%) had three episodes, and 2 (20.0%) experienced more than three episodes. Regarding management, 20 (27.0%)

were treated with injections for three months, 38 (51.4%) used drugs, 10 (13.5%) managed it with bed rest and medications, while 6 (8.1%) could not recall the exact treatment they received.

Table 4a: Risk Factors Among Pregnant Women

Variable	Frequency (n)	Percentage (%)
High parity		
Strongly agree	20	27.0
Agree	38	51.4
Disagree	10	13.5
Strongly disagree	6	8.1
Total	**74**	**100**
Serious medical conditions		
Strongly agree	32	43.2
Agree	34	45.9
Disagree	7	9.5
Strongly disagree	1	1.4
Total	**74**	**100**
Complication in pregnancy		
Strongly agree	35	47.3
Agree	31	41.9
Disagree	5	6.8
Strongly disagree	3	4.0
Total	**74**	**100**
History of trauma		
Strongly agree	26	35.1
Agree	35	47.3
Disagree	7	9.5
Strongly disagree	6	8.1
Total	**74**	**100**
History of premature rupture of membrane		
Strongly agree	25	33.8
Agree	26	35.1
Disagree	21	28.4
Strongly disagree	2	2.7
Total	**74**	**100**
Obstetrics and Gynecological history		
Strongly agree	26	35.1
Agree	35	47.3
Disagree	7	9.5
Strongly disagree	6	8.1
Total	**74**	**100**
Multiple pregnancies like twin, triplet etc.		
Strongly agree	14	18.9
Agree	40	54.1
Disagree	14	18.9
Strongly disagree	6	8.1
Total	**74**	**100**
Short inter-pregnancy interval		
Strongly agree	20	27.0
Agree	34	46.0
Disagree	18	24.3
Strongly disagree	2	2.7

Total	**74**	**100**
Table 4b: Risk Factors Among Pregnant Women		
High number of previous deliveries		
Strongly agree	20	27.0
Agree	26	35.2
Disagree	20	27.0
Strongly disagree	8	10.8
Total	**74**	**100**
Previous history of miscarriages		
Strongly agree	18	24.3
Agree	35	47.3
Disagree	19	25.7
Strongly disagree	2	2.7
Total	**74**	**100**
History of operations on the uterus		
Strongly agree	24	32.4
Agree	29	39.2
Disagree	14	18.9
Strongly disagree	7	9.5
Total	**74**	**100**
History of caesarian section		
Strongly agree	20	27.0
Agree	33	44.6
Disagree	19	25.7
Strongly disagree	2	2.7
Total	**74**	**100**
History of ectopic pregnancy		
Strongly agree	24	32.4
Agree	35	47.3
Disagree	9	12.2
Strongly disagree	6	8.1
Total	**74**	**100**
Social History		
Strongly agree	16	21.6
Agree	24	32.4
Disagree	21	28.4
Strongly disagree	13	17.6
Total	**74**	**100**
History of smoking		
Strongly agree	18	24.3
Agree	35	47.3
Disagree	11	14.9
Strongly disagree	10	13.5
Total	**74**	**100**
Alcohol intake		
Strongly agree	26	35.1
Agree	29	39.2
Disagree	12	16.2
Strongly disagree	7	9.5
Total	**74**	**100**
Table 4c: Risk Factors Among Pregnant Women		
Hypertension in current pregnancy		
Strongly agree	19	25.7

Agree	38	51.4
Disagree	6	8.1
Strongly disagree	11	14.8
Total	**74**	**100**
History of hypertension in previous pregnancies		
Strongly agree	16	21.6
Agree	34	45.9
Disagree	15	20.3
Strongly disagree	9	12.2
Total	**74**	**100**
History of STI		
Strongly agree	25	33.8
Agree	33	44.6
Disagree	14	18.9
Strongly disagree	2	2.7
Total	**74**	**100**
History of anaemia		
Strongly agree	18	24.3
Agree	30	40.5
Disagree	13	17.6
Strongly disagree	13	17.6
Total	**74**	**100**

The risk factors for antepartum hemorrhage among pregnant mothers were assessed based on various medical, obstetric, and social factors. Regarding high parity, 20 (27.0%) strongly agreed, 38 (51.4%) agreed, 10 (13.5%) disagreed, and 6 (8.1%) strongly disagreed. Concerning serious medical conditions, 32 (43.2%) strongly agreed, 34 (45.9%) agreed, 7 (9.5%) disagreed, and 1 (1.4%) strongly disagreed. For complications in pregnancy, 35 (47.3%) strongly agreed, 31 (41.9%) agreed, 5 (6.8%) disagreed, and 3 (4.0%) strongly disagreed. A history of trauma was reported by 26 (35.1%) who strongly agreed, 35 (47.3%) who agreed, 7 (9.5%) who disagreed, and 6 (8.1%) who strongly disagreed. In relation to a history of premature rupture of membranes, 25 (33.8%) strongly agreed, 26 (35.1%) agreed, 21 (28.4%) disagreed, and 2 (2.7%) strongly disagreed. Obstetric and gynecological history was recognized as a risk factor by 26 (35.1%) who strongly agreed, 35 (47.3%) who agreed, 7 (9.5%) who disagreed, and 6 (8.1%) who strongly disagreed. Multiple pregnancies such as twins or triplets were acknowledged as a risk factor by 14 (18.9%) who strongly agreed, 40 (54.1%) who agreed, 14 (18.9%) who disagreed, and 6 (8.1%) who strongly disagreed. A short inter-pregnancy interval was reported by 20 (27.0%) who strongly agreed, 34 (46.0%) who agreed, 18 (24.3%) who disagreed, and 2 (2.7%) who strongly disagreed. High parity, or a high number of previous deliveries, was noted by 20 (27.0%) who strongly agreed, 26 (35.2%) who agreed, 20 (27.0%) who disagreed, and 8 (10.8%) who strongly disagreed. A previous history of miscarriages was reported by 18 (24.3%) who strongly agreed, 35 (47.3%) who agreed, 19 (25.7%) who disagreed, and 2 (2.7%) who strongly disagreed. A history of operations on the uterus was cited by 24 (32.4%) who strongly agreed, 29 (39.2%) who agreed, 14 (18.9%) who disagreed, and 7 (9.5%) who strongly disagreed. A history of caesarean section was acknowledged by 20 (27.0%) who strongly agreed, 33 (44.6%) who agreed, 19 (25.7%) who disagreed, and 2 (2.7%) who strongly disagreed. A

history of ectopic pregnancy was confirmed by 24 (32.4%) who strongly agreed, 35 (47.3%) who agreed, 9 (12.2%) who disagreed, and 6 (8.1%) who strongly disagreed. In terms of social history, 16 (21.6%) strongly agreed, 24 (32.4%) agreed, 21 (28.4%) disagreed, and 13 (17.6%) strongly disagreed. A history of smoking was reported by 18 (24.3%) who strongly agreed, 35 (47.3%) who agreed, 11 (14.9%) who disagreed, and 10 (13.5%) who strongly disagreed. Alcohol intake was noted by 26 (35.1%) who strongly agreed, 29 (39.2%) who agreed, 12 (16.2%) who disagreed, and 7 (9.5%) who strongly disagreed. Hypertension in the current pregnancy was cited by 19 (25.7%) who strongly agreed, 38 (51.4%) who agreed, 6 (8.1%) who disagreed, and 11 (14.8%) who strongly disagreed. A history of hypertension in previous pregnancies was identified by 16 (21.6%) who strongly agreed, 34 (45.9%) who agreed, 15 (20.3%) who disagreed, and 9 (12.2%) who strongly disagreed. A history of sexually transmitted infections was reported by 25 (33.8%) who strongly agreed, 33 (44.6%) who agreed, 14 (18.9%) who disagreed, and 2 (2.7%) who strongly disagreed. Lastly, a history of anemia was noted by 18 (24.3%) who strongly agreed, 30 (40.5%) who agreed, 13 (17.6%) who disagreed, and 13 (17.6%) who strongly disagreed.

Table 5: Factors Influencing an Increase in Antepartum Hemorrhage

Variable	**Frequency (n)**	**Percentage (%)**
Increase maternal parity		
Strongly agree	33	44.6
Agree	33	44.6
Disagree	7	9.4
Strongly disagree	1	1.4
Total	**74**	**100**
Advance maternal age		
Strongly agree	31	41.9
Agree	34	45.9
Disagree	9	12.2
Total	**74**	**100**
Previous caesarian section		
Strongly agree	18	24.3
Agree	34	45.9
Disagree	19	25.7
Strongly disagree	3	4.1
Total	**74**	**100**
Uterine Scars (previous myomectomy and endometritis)	21	28.4
Strongly agree	42	56.8
Agree	7	9.4
Disagree	4	5.4
Strongly disagree	**74**	**100**
Total		
Multiple pregnancy		
Strongly agree	11	14.9
Agree	36	48.6
Disagree	19	25.7
Strongly disagree	8	10.8
Total	**74**	**100**

Previous Dilatation and Curettage		
Strongly agree	24	32.4
Agree	38	51.4
Disagree	10	13.5
Strongly disagree	2	2.7
Total	**74**	**100**

The factors influencing an increase in antepartum hemorrhage among pregnant mothers were assessed based on maternal, obstetric, and surgical histories. Increased maternal parity was strongly agreed upon by 33 (44.6%) of respondents, agreed upon by 33 (44.6%), while 7 (9.4%) disagreed, and 1 (1.4%) strongly disagreed. Advanced maternal age was cited as a factor by 31 (41.9%) who strongly agreed, 34 (45.9%) who agreed, and 9 (12.2%) who disagreed. A previous caesarean section was recognized as a factor by 18 (24.3%) who strongly agreed, 34 (45.9%) who agreed, 19 (25.7%) who disagreed, and 3 (4.1%) who strongly disagreed. Uterine scars, including previous myomectomy and endometritis, were noted as a risk factor by 21 (28.4%) who strongly agreed, 42 (56.8%) who agreed, 7 (9.4%) who disagreed, and 4 (5.4%) who strongly disagreed. Multiple pregnancy was considered a contributing factor by 11 (14.9%) who strongly agreed, 36 (48.6%) who agreed, 19 (25.7%) who disagreed, and 8 (10.8%) who strongly disagreed. Lastly, a previous history of dilatation and curettage was acknowledged by 24 (32.4%) who strongly agreed, 38 (51.4%) who agreed, 10 (13.5%) who disagreed, and 2 (2.7%) who strongly disagreed.

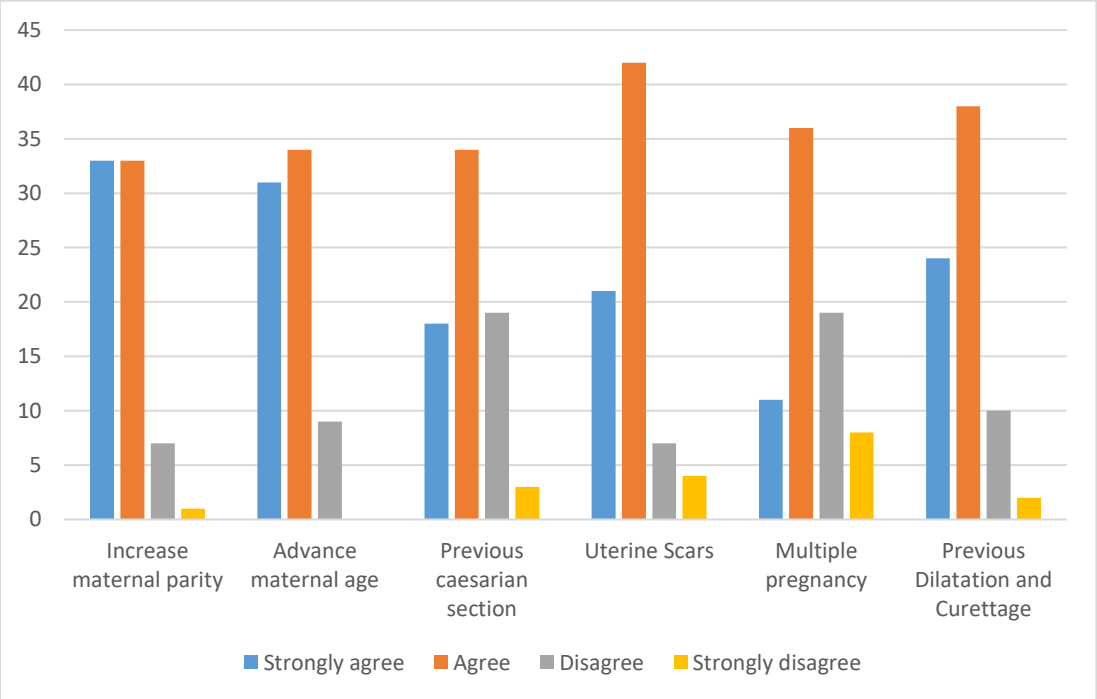

Figure 4.2: Factors Influencing an Increase in Antepartum Hemorrhage

The above clustered column shows the Factors Influencing an Increase in Antepartum as illustrated in table 5

4.6 Answers to the Research Questions

Research Question 1: What is the prevalence of antepartum hemorrhage among pregnant mothers?

According to Table 3, the prevalence of antepartum hemorrhage among pregnant mothers in this study was 13.5 percent, as 10 out of **74** participants reported experiencing vaginal bleeding during their current or previous pregnancies, while 64 participants (86.5 percent) had not experienced any form of antepartum hemorrhage. Among those who had experienced bleeding, 10.0 percent reported a single episode, 30.0 percent had two episodes, 40.0 percent had three episodes, and 20.0 percent experienced more than three episodes. These findings indicate that while the overall prevalence is relatively low, some pregnant women are at risk of recurrent episodes of antepartum hemorrhage, which may require close monitoring and medical intervention.

Research Question 2: What are the risk factors associated with antepartum hemorrhage among pregnant mothers?

As presented in Table 4, several risk factors were identified as contributing to antepartum hemorrhage among pregnant mothers. High parity was recognized as a risk factor by 27.0 percent who strongly agreed and 51.4 percent who agreed, while 13.5 percent disagreed and 8.1 percent strongly disagreed. Complications in pregnancy were widely acknowledged, with 47.3 percent strongly agreeing and 41.9 percent agreeing. A history of trauma was reported by 35.1 percent who strongly agreed and 47.3 percent who agreed. Additionally, a history of premature rupture of membranes was noted by 33.8 percent who strongly agreed and 35.1 percent who agreed. Other factors included previous miscarriages (24.3 percent strongly agreed, 47.3 percent agreed), a history of caesarean section (27.0 percent strongly agreed, 44.6 percent agreed), and multiple pregnancies (18.9 percent strongly agreed, 54.1 percent agreed). Social and lifestyle factors such as smoking (24.3 percent strongly agreed, 47.3 percent agreed) and alcohol intake (35.1 percent strongly agreed, 39.2 percent agreed) were also reported. These findings highlight that antepartum hemorrhage can result from both medical and lifestyle-related risk factors, emphasizing the need for proper prenatal care and health education.

Research Question 3: What are the factors influencing an increase in antepartum hemorrhage among pregnant mothers?

According to Table 5, increased maternal parity was identified as a significant factor influencing an increase in antepartum hemorrhage, with 44.6 percent strongly agreeing and 44.6 percent agreeing, while 9.4 percent disagreed and 1.4 percent strongly disagreed. Advanced maternal age was also highlighted, with 41.9 percent strongly agreeing and 45.9 percent agreeing, suggesting that older women are at a higher risk of experiencing antepartum hemorrhage. A previous history of caesarean section was recognized as a contributing factor by 24.3 percent who strongly agreed and 45.9 percent who agreed. Similarly, uterine scars from previous surgeries, including myomectomy and endometritis, were considered a risk factor by 28.4 percent who strongly agreed and 56.8 percent who agreed. Multiple pregnancies, such as twins or triplets, were acknowledged as a contributing factor by 14.9 percent who strongly agreed and 48.6 percent who agreed. Additionally, a history of dilatation and curettage was identified as a significant factor, with 32.4 percent strongly agreeing and 51.4 percent agreeing. These findings suggest that a combination of maternal, obstetric, and surgical histories significantly

influences the likelihood of experiencing antepartum hemorrhage, underscoring the importance of careful obstetric history assessment and prenatal monitoring.

TEST OF HYPOTHESES

Ho: There is no significant relationship between the age of mothers and increase in antepartum hemorrhage.

Table 6: The Chi-square value on the relationship between the age of mothers and increase in antepartum hemorrhage.

		Increase maternal parity							
		Strongly agree	Agree	Disagree	Strongly disagree	**Total**	Df	X^2Cal	Xtab
Age	20-24	6	10	2	0	18	9	14.777	16.919
	25-29	14	4	3	0	21			
	30-34	10	10	0	1	21			
	35 and above	3	9	2	0	14			
Total		33	33	7	1	**74**			

P-value = 0.05

The calculated value (14.777) is lesser than the table value (16.919). Hence, the hypothesis is rejected. This shows that there is no significant relationship between the age of mothers and increase in antepartum hemorrhage.

Ho2: There is no significant relationship between the knowledge of mothers and increase in antepartum hemorrhage.

Table 7: The Chi-square value on the relationship between the knowledge of mothers and increase in antepartum hemorrhage.

When can antepartum haemorrhage happen the most?	Increase maternal parity							
	Strongly agree	Agree	Disagree	Strongly disagree	**Total**	Df	X^2Cal	Xtab
First trimester	12	13	4	0	29	9	14.182	16.919
Second trimester	10	18	1	1	30			
Third trimester	5	1	0	0	6			
Any time	6	1	2	0	9			
Total	33	33	7	1	**74**			

P-value = 0.05

The calculated value (14.182) is lesser than the table value (16.919). Hence, the hypothesis is rejected. This shows that there is no significant relationship between the knowledge of mothers and increase in antepartum hemorrhage.

Discussion of Findings

The findings reveal that most participants (56.8%) were within the peak reproductive age of 25-34 years, with 18.9% aged 35 and above, highlighting the role of advanced maternal age as a risk factor for antepartum hemorrhage due to conditions like placenta previa and placental abruption. Increased maternal parity was also evident, with 49.2% having at least two previous pregnancies, which raises concerns about uterine scarring, poor placental implantation, and weakened uterine walls, all of which heighten the risk of hemorrhage. Marital status showed that 85.1% were married, which may facilitate better healthcare access, while single and divorced women (14.9%) might face financial or emotional stress, leading to inadequate antenatal care and delayed management of complications. Occupational status indicated that half of the respondents were self-employed, while 13.6% were unemployed, suggesting that financial constraints could limit access to quality healthcare, nutrition, and rest, further increasing pregnancy-related risks. Religious affiliation, with Christianity (82.4%) as the dominant faith, may influence health-seeking behaviors and acceptance of medical interventions, potentially affecting how quickly women seek care for antepartum hemorrhage. Ethnic distribution showed that Yoruba women formed the majority (67.6%), with Igbo (20.3%) and Hausa (9.4%) following, suggesting that cultural beliefs and healthcare practices among different ethnic groups may impact maternal outcomes. Educational attainment revealed that 71.6% had tertiary education, which is associated with better health awareness and antenatal care utilization, though the presence of women with lower education levels (28.4%) underscores the need for targeted maternal health education to improve awareness of antepartum hemorrhage risk factors and timely healthcare-seeking behavior.

Knowledge of APH Among Pregnant Mothers

The findings of this study indicate that a significant proportion (91.9%) of pregnant mothers had prior knowledge of antepartum hemorrhage, with hospitals being the primary source of information (92.7%). This highlights the crucial role of healthcare institutions in disseminating obstetric health information. Additionally, most respondents (86.4%) correctly identified vaginal bleeding as a key symptom, while others had misconceptions, such as associating the condition with whitish vaginal discharge (8.1%) and vaginal pain (4.1%). The knowledge of risk factors varied, with multiple pregnancies (29.7%) and abnormal placenta positions (23.0%) being the most frequently cited causes. However, some respondents attributed antepartum hemorrhage to sex during pregnancy (4.0%) and advanced maternal age (1.4%), reflecting a need for further education to correct misconceptions. These findings align with the study by Ranjani-Priya (2020), which identified placenta previa and abruptio placenta as major causes of antepartum hemorrhage, with a significant proportion of cases occurring in multiparous women and those with prior cesarean sections. The current study also

revealed a gap in understanding the timing of antepartum hemorrhage, with 39.2% believing it occurs in the first trimester, whereas Ranjani-Priya (2020) reported that most cases were observed between 28 and 34 weeks of gestation. Furthermore, the study reinforced the widely acknowledged impact of antepartum hemorrhage on both maternal and neonatal health, with 89.2% of respondents recognizing its dual risk, consistent with prior research highlighting its role in maternal and neonatal morbidity and mortality (Adekanle et al., 2019; Oladapo et al., 2022). These findings underscore the importance of targeted health education to enhance knowledge, address misconceptions, and improve maternal and neonatal outcomes.

Prevalence of Antepartum Hemorrhage Among Pregnant Mothers

The findings of this study indicate that the prevalence of antepartum hemorrhage among pregnant mothers was 13.5%, with varying degrees of recurrence among those affected. Notably, 40.0% of those who experienced vaginal bleeding reported three episodes, while 20.0% had more than three episodes, suggesting that recurrent bleeding is a common feature of antepartum hemorrhage. In terms of management, the most frequently used intervention was drug therapy (51.4%), followed by prolonged injection treatment (27.0%), and a combination of bed rest and medication (13.5%), reflecting a range of clinical approaches. These findings are consistent with prior research by Ranjani-Priya (2020), which identified that antepartum hemorrhage often necessitates medical interventions, with a significant proportion of affected women requiring blood transfusions and caesarean delivery. The recurrence of bleeding episodes observed in this study further supports previous findings that antepartum hemorrhage is associated with conditions such as placenta previa and abruptio placenta, which can lead to persistent bleeding and increased maternal and neonatal risks. The study underscores the need for continuous monitoring and timely medical intervention to mitigate complications arising from antepartum hemorrhage.

Risk Factors Among Pregnant Mothers

The findings of this study highlight multiple risk factors associated with antepartum hemorrhage among pregnant mothers, including medical, obstetric, and social determinants. High parity, complications in pregnancy, and previous caesarean section were identified as significant contributors, with over 70 percent of respondents acknowledging these as potential risk factors. Additionally, medical conditions such as hypertension, anemia, and sexually transmitted infections were widely recognized, with more than 60 percent agreeing to their role in increasing the likelihood of antepartum hemorrhage. Social factors, including smoking and alcohol intake, were also noted by a significant proportion of respondents, reinforcing existing literature that links these habits to adverse pregnancy outcomes. These findings align with the study by Ranjani-Priya (2020), which identified pre-eclampsia as a leading risk factor for antepartum hemorrhage, and Kuribayashi et al. (2021), who highlighted placenta previa as being associated with maternal age, uterine scarring, and lifestyle factors such as smoking. The high level of agreement on these risk factors underscores the need for targeted interventions, including antenatal education, early screening, and appropriate

management strategies to reduce the incidence of antepartum hemorrhage and its associated complications.

Factors Influencing an Increase in Antepartum

The assessment of factors influencing an increase in antepartum hemorrhage among pregnant mothers highlights key maternal, obstetric, and surgical risks. Increased maternal parity (89.2 percent agreement) and advanced maternal age (87.8 percent agreement) were the most widely recognized factors, aligning with studies linking them to pregnancy complications. Previous caesarean sections, uterine scars from myomectomy or endometritis, and multiple pregnancies were also highly acknowledged, supporting research that associates these conditions with placenta previa and placental abruption. Additionally, a history of dilatation and curettage was considered a significant risk factor (83.8 percent agreement). These findings emphasize the need for early prenatal screening, individualized antenatal care, and preventive measures such as ultrasound monitoring and cautious surgical management to reduce the incidence of antepartum hemorrhage and improve maternal outcomes.

Nursing Implication

The findings of this study highlight the critical role of nurses in preventing and managing antepartum hemorrhage through early risk assessment, patient education, and timely interventions. Nurses should be equipped with the knowledge to identify high-risk pregnancies, monitor maternal health closely, and provide targeted health education on modifiable risk factors such as smoking, alcohol intake, and short inter-pregnancy intervals. Additionally, promoting regular antenatal visits, ensuring proper documentation of obstetric history, and advocating for multidisciplinary collaboration can enhance patient outcomes. Strengthening emergency preparedness and blood transfusion services within maternity wards is also essential to managing hemorrhagic complications effectively.

Conclusion

Antepartum hemorrhage remains a significant obstetric challenge with potentially severe maternal and fetal consequences. This study identified major risk factors, reinforcing the need for proactive management strategies among healthcare providers. Early screening, patient education, and enhanced antenatal care services can mitigate risks and improve pregnancy outcomes. Addressing modifiable lifestyle factors and ensuring proper monitoring of high-risk pregnancies are crucial steps in preventing hemorrhagic complications. Ultimately, a multidisciplinary approach, including nurses, midwives, and obstetricians, is essential to improving maternal health and reducing the burden of antepartum hemorrhage.

Recommendations

1. Strengthen antenatal screening programs to identify high-risk pregnancies early.
2. Provide targeted health education on modifiable risk factors such as smoking, alcohol intake, and short inter-pregnancy intervals.
3. Enhance emergency preparedness in maternity wards, including access to blood transfusion services and hemorrhage management protocols.

4. Encourage regular ultrasound monitoring for early detection of placental abnormalities.
5. Implement structured training programs for healthcare providers on managing antepartum hemorrhage effectively.
6. Advocate for policies that improve maternal health services, particularly in resource-limited settings.

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