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A Study to Determine The Prevalence, Criticle Risk Factors, and Maternal Outcomes of Postpartum Hemorrhage Among Delivery Cases in A Selected Tertiary Care Hospital, With The Aim of Designing Targeted Preventive Interventions for High-Risk Obstetric Groups

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Abstract- "Background: Postpartum haemorrhage (PPH) is a major obstetric complication and an important cause of maternal morbidity and mortality worldwide. Early identification of risk factors, timely recognition and appropriate management are essential to prevent severe maternal complications. Understanding the prevalence, associated risk factors and maternal outcomes of PPH in tertiary care settings can help strengthen evidence-based obstetric and nursing care. Aim: To determine the prevalence of postpartum haemorrhage, identify associated maternal and obstetric risk factors, and assess maternal outcomes among women delivering at a selected tertiary care hospital. Objectives: To estimate the prevalence of PPH; identify selected sociodemographic, maternal and obstetric risk factors associated with PPH; assess maternal outcomes; and develop evidence-based recommendations for the prevention and early identification of PPH among high-risk obstetric groups. Methods: A prospective observational study will be conducted among women admitted for delivery at a selected tertiary care hospital. Consecutive sampling will be used to recruit eligible participants over the approved study period. Data will be collected using a structured data collection proforma covering sociodemographic characteristics, obstetric history, clinical risk factors, mode of delivery, objectively measured blood loss and maternal outcomes. PPH will be defined according to the case definition approved in the study protocol and current clinical guidelines. Maternal outcomes will include blood transfusion, additional medical or surgical interventions, intensive care admission and length of hospital stay. Data will be analysed using appropriate descriptive and inferential statistical methods. Expected Outcome: The study is expected to generate hospital-specific evidence regarding PPH prevalence, associated risk factors and maternal outcomes, supporting the development of targeted preventive recommendations and improved obstetric nursing care.

Keywords: Postpartum haemorrhage, prevalence, risk factors, maternal outcomes, obstetric nursing, maternal health, tertiary care hospital.

I. INTRODUCTION

Postpartum haemorrhage (PPH) is one of the most serious obstetric emergencies and remains a major contributor to maternal morbidity and mortality worldwide. It is characterised by excessive bleeding following childbirth and can lead to life-threatening complications if not recognised and managed promptly. Despite advances in obstetric care, improved healthcare facilities and the availability of effective treatment strategies, postpartum haemorrhage continues to pose a significant challenge to maternal healthcare services, particularly in low- and middle-income countries.

The World Health Organization (WHO) published its consolidated guidelines for the prevention, diagnosis and treatment of postpartum haemorrhage in 2025. These guidelines emphasise early recognition, objective measurement of blood loss, timely treatment and coordinated care by healthcare professionals. The updated diagnostic approach recommends initiating first-response treatment when objectively measured blood loss reaches 500 mL or more, or 300 mL or more with an abnormal haemodynamic sign, whichever occurs first within 24 hours after birth. Particular attention is required during the first two hours following delivery.

Postpartum haemorrhage may occur due to several obstetric conditions. The commonly recognised causes include uterine atony, retained placental tissue, genital tract trauma and coagulation abnormalities. Uterine atony, in which the uterus

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fails to contract adequately after childbirth, is considered the most common cause of PPH. Other contributing conditions include abnormal placentation, prolonged labour, instrumental delivery and complications associated with caesarean section.

Several maternal and obstetric factors may increase the risk of developing postpartum haemorrhage. These include maternal anaemia, previous history of PPH, multiple pregnancy, placenta praevia, hypertensive disorders of pregnancy, prolonged labour, induction or augmentation of labour and fetal macrosomia. A systematic review and meta-analysis published in *The Lancet* in 2025, involving 327 studies and more than 847 million women, identified anaemia, previous PPH, caesarean birth, multiple pregnancy and placenta praevia among the important risk factors associated with postpartum haemorrhage. However, PPH can also occur in women without identifiable risk factors, highlighting the importance of preparedness for every delivery.

The maternal consequences of postpartum haemorrhage can range from mild complications to severe, life-threatening conditions. Excessive blood loss may result in severe anaemia, hypovolaemic shock, disseminated intravascular coagulation, renal impairment, multi-organ dysfunction and, in severe cases, maternal death. Some women may require blood transfusion, additional medical management, surgical interventions, intensive care admission or prolonged hospitalisation. These complications can also affect the physical, emotional and psychological well-being of mothers and their families.

In India, obstetric haemorrhage remains an important contributor to maternal mortality. A nationally representative analysis of maternal mortality trends reported that obstetric haemorrhage accounted for approximately 47% of maternal deaths in the analysed 2007–2014 data, with estimates indicating approximately 11,200 haemorrhage-related maternal deaths in 2020. Although this category includes haemorrhage beyond postpartum haemorrhage, it demonstrates the continuing importance of strengthening emergency obstetric care and maternal health services in the country.

The prevention and management of postpartum haemorrhage require a multidisciplinary approach involving obstetricians, nurses, midwives, anaesthetists and other healthcare professionals. Nurses play a vital role in identifying women at risk, monitoring maternal vital signs, assessing uterine contraction, measuring blood loss, administering prescribed uterotonic medications, recognising early warning signs and facilitating timely emergency interventions. Effective communication, adherence to clinical protocols and preparedness for obstetric emergencies are essential components of quality nursing care.

Early identification of risk factors and continuous monitoring during the immediate postpartum period can help reduce delays in diagnosis and treatment. Identifying women with anaemia, previous PPH, multiple pregnancy, placental abnormalities and other obstetric complications may support appropriate risk assessment and preparedness. Nevertheless, risk assessment should not replace routine monitoring and preventive care for all women giving birth.

Although international guidelines provide evidence-based recommendations for preventing and managing postpartum haemorrhage, hospital-specific information regarding its prevalence, associated risk factors and maternal outcomes is important for evaluating local maternal healthcare needs. A prospective observational assessment can provide useful information about the burden of PPH, the clinical characteristics of affected women and the maternal complications encountered in a tertiary care setting.

Therefore, the present study is proposed to determine the prevalence of postpartum haemorrhage, identify associated maternal and obstetric risk factors, and assess maternal outcomes among women delivering at a selected tertiary care hospital. The findings are expected to provide evidence that may guide the development of targeted preventive recommendations, strengthen early identification strategies and improve the quality of obstetric nursing care for women at increased risk of postpartum haemorrhage.

II. REVIEW OF LITERATURE

1. Literature Related To The Prevalence Of Postpartum Haemorrhage

Postpartum haemorrhage (PPH) is a major obstetric complication and an important public health concern because of its contribution to maternal morbidity and mortality. The reported prevalence of PPH varies across countries and healthcare settings depending on the population studied, obstetric practices, diagnostic criteria and methods used for measuring blood loss.

A systematic review and meta-analysis published in *The Lancet Obstetrics, Gynaecology & Women's Health* in 2026 examined the prevalence of postpartum haemorrhage and severe postpartum haemorrhage across different geographical regions. The review highlighted variations in reported prevalence according to the method of blood loss assessment and mode of delivery. It also emphasised the importance of objective measurement of blood loss for obtaining reliable prevalence estimates.

The World Health Organization (WHO), in its consolidated guidelines published in 2025, emphasised the importance of early identification and standardised diagnosis of PPH. The guidelines recommend objective blood loss measurement

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and timely initiation of appropriate treatment to reduce severe maternal complications.

These findings indicate the need for hospital-based studies to estimate the prevalence of postpartum haemorrhage using clearly defined diagnostic criteria and standardised blood loss assessment methods.

2. Literature Related To Risk Factors Associated With Postpartum Haemorrhage

Yunas et al. (2025) conducted a systematic review and meta-analysis published in *The Lancet* to identify the causes and risk factors associated with postpartum haemorrhage. The review included 327 studies involving approximately 847 million women. Uterine atony was identified as the most common cause of PPH, accounting for a pooled proportion of 70.6%. Other reported causes included genital tract trauma (16.9%), retained placenta (16.4%), abnormal placentation (3.9%) and coagulopathy (2.7%). Important risk factors included maternal anaemia, previous history of PPH, caesarean birth, multiple pregnancy, placenta praevia, sepsis and absence of antenatal care. The authors highlighted the importance of identifying high-risk women and implementing appropriate preventive and management strategies.

A multicentre prospective cohort study conducted in India by researchers examining the relationship between anaemia, labour induction and postpartum haemorrhage included 9,420 pregnant women from 13 hospitals. The study investigated whether induction or augmentation of labour among women with anaemia was associated with an increased risk of PPH. This research is particularly relevant to Indian obstetric settings because maternal anaemia is an important clinical consideration during pregnancy and childbirth.

The findings from these studies emphasise the importance of assessing maternal health conditions, previous obstetric history and intrapartum factors while identifying women who may be at increased risk of postpartum haemorrhage.

3. Literature Related To Causes And Clinical Characteristics Of Postpartum Haemorrhage

Uterine atony is recognised as the leading cause of primary postpartum haemorrhage. It occurs when the uterus fails to contract effectively following delivery, resulting in continued bleeding from the placental implantation site. Other important causes include retained placental tissue, genital tract injuries and coagulation abnormalities.

The systematic review by Yunas et al. (2025) demonstrated that postpartum haemorrhage may result from multiple concurrent causes rather than a single isolated obstetric condition. This finding supports the importance of comprehensive clinical assessment and preparedness for obstetric emergencies in all deliveries.

The WHO consolidated guidelines (2025) also emphasise the importance of evidence-based preventive measures, including prophylactic uterotonic administration, objective assessment of blood loss and prompt management when PPH is identified.

4. Literature Related To Maternal Outcomes Of Postpartum Haemorrhage

A hospital-based study conducted in rural Bangalore, India, examined the impact of primary postpartum haemorrhage on maternal near-miss morbidity and mortality. The retrospective analysis included 124 women with PPH over four years. The researchers observed that women referred after delivery from peripheral healthcare facilities experienced greater morbidity than women who delivered within the study hospital. Severe cases were associated with complications such as organ dysfunction, intensive care admission, blood transfusion and the need for surgical intervention. The study highlighted the importance of timely referral and effective management of obstetric emergencies.

A retrospective study conducted at a tertiary care teaching hospital in Southern India examined emergency peripartum hysterectomy over a 14-year period. Among 16,473 deliveries, 12 women underwent emergency peripartum hysterectomy. Atonic PPH was the most common indication, accounting for 58% of cases. All women required intensive care and blood transfusion, and two maternal deaths were reported. The study highlighted the severe consequences of uncontrolled obstetric haemorrhage and the importance of timely intervention.

These findings demonstrate that postpartum haemorrhage can result in serious maternal complications, including severe anaemia, hypovolaemic shock, blood transfusion requirements, intensive care admission, emergency hysterectomy and maternal mortality.

5. Literature Related To Prevention And Nursing Management Of Postpartum Haemorrhage

The WHO consolidated guidelines published in 2025 provide evidence-based recommendations for the prevention, diagnosis and treatment of postpartum haemorrhage. These recommendations emphasise preventive uterotonic medications, objective measurement of blood loss, early diagnosis and timely initiation of treatment.

The guidelines also highlight the importance of coordinated multidisciplinary care and the implementation of standardised treatment approaches. Early recognition of abnormal bleeding and prompt management can help prevent progression to severe maternal complications.

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Nurses and midwives have an essential role in preventing and managing PPH. Their responsibilities include monitoring maternal vital signs, assessing uterine tone, observing vaginal bleeding, measuring blood loss, administering prescribed medications, maintaining intravenous access as indicated and promptly reporting abnormal clinical findings.

Regular training, simulation-based learning, emergency preparedness and adherence to institutional protocols can improve the quality of obstetric nursing care and contribute to better maternal outcomes.

6.Summary Of The Reviewed Literature

The reviewed literature establishes that postpartum haemorrhage remains a significant obstetric emergency associated with multiple maternal and obstetric risk factors. Uterine atony is the leading reported cause, while maternal anaemia, previous history of PPH, caesarean birth, multiple pregnancy and placental abnormalities are among the important associated risk factors.

Existing studies have also demonstrated that PPH can result in serious maternal complications, including blood transfusion, intensive care admission, surgical intervention and maternal mortality. Early recognition, objective measurement of blood loss, timely treatment and coordinated multidisciplinary management are essential for improving maternal outcomes.

Although international and Indian studies have examined various aspects of postpartum haemorrhage, hospital-specific evidence remains important because prevalence, risk-factor patterns, referral practices and maternal outcomes may differ across healthcare settings.Therefore, the proposed study aims to determine the prevalence of postpartum haemorrhage, identify associated risk factors and assess maternal outcomes among women delivering at a selected tertiary care hospital. The findings may provide a scientific basis for developing targeted preventive recommendations and strengthening obstetric nursing care for women at increased risk of postpartum haemorrhage.

II. OBJECTIVES OF THE STUDY

Title: Prevalence, Associated Risk Factors and Maternal Outcomes of Postpartum Haemorrhage Among Women Delivering at a Selected Tertiary Care Hospital: A Prospective Observational Study.

1. General Objective

To assess the prevalence, associated risk factors and maternal outcomes of postpartum haemorrhage among women delivering at a selected tertiary care hospital.

2. Specific Objectives

- To determine the prevalence of postpartum haemorrhage among women delivering at a selected tertiary care hospital.
- To identify the selected sociodemographic, maternal and obstetric risk factors associated with postpartum haemorrhage.
- To assess maternal outcomes among women who develop postpartum haemorrhage.

III. TO DETERMINE THE ASSOCIATION BETWEEN SELECTED MATERNAL AND OBSTETRIC RISK FACTORS AND THE 4

Materials And Methods

1. Research Approach

A quantitative research approach will be adopted to assess the prevalence, associated risk factors and maternal outcomes of postpartum haemorrhage among women delivering at a selected tertiary care hospital.

2. Research Design

A prospective observational hospital-based study design will be used. The study will involve systematic observation and collection of clinical information from eligible women during delivery and the immediate postpartum period without introducing any experimental intervention.

3.Setting Of The Study

The study will be conducted in the Labour Room, Obstetrics and Gynaecology Department, and postnatal wards of a selected tertiary care hospital.

4. Study Population

The study population will consist of all eligible pregnant women admitted for childbirth at the selected tertiary care hospital during the study period.

5. Study Duration

The proposed study will be conducted over a period of six months following institutional approval and ethical clearance. The duration may be modified according to the calculated sample size and expected monthly delivery rate.

6. Sample Size

The sample size will be calculated using the standard formula for estimating prevalence:

$n = Z^2 \times P \times (1 - P) / d^2$

Where:

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1. n = Required sample size

• Z = Standard normal value at 95% confidence level (1.96)

1. P = Expected prevalence of postpartum haemorrhage based on published literature or pilot data

2. d = Absolute precision or margin of error

If the expected prevalence is unknown, an assumed prevalence of 50% and an absolute precision of 5% will give an initial sample size of approximately 384 women. An additional allowance for incomplete observations or missing data may be considered. The final sample size will be determined before recruitment.

7. Sampling Technique

Consecutive sampling will be adopted. All eligible women admitted for delivery during the study period will be considered for recruitment until the required sample size is achieved.

8. Inclusion Criteria

- Women admitted for vaginal or caesarean delivery at the selected tertiary care hospital.
- Women delivering during the approved study period.
- Women providing informed consent, where required by the ethics committee.

9. Exclusion Criteria

- Women referred after delivery from another healthcare facility when reliable blood-loss information from childbirth is unavailable.
- Women whose delivery and postpartum clinical records are insufficient to determine the study outcome.
- Women who decline participation, where individual consent is required.

10. Variables Of The Study

Independent variables:

- Maternal age
- Parity and gravidity
- Previous history of postpartum haemorrhage
- Antenatal anaemia
- Hypertensive disorders of pregnancy
- Multiple pregnancy
- 7. Gestational age
- 8. Placental abnormalities
- 9. Induction or augmentation of labour
- 10. Duration of labour
- 11. Mode of delivery
- 12. Instrumental delivery

Dependent variables:

- Occurrence of postpartum haemorrhage
- Severity of postpartum haemorrhage
- Maternal complications and clinical outcomes

11. Data Collection Tool

A structured data collection proforma will be developed based on the study objectives, relevant literature and current clinical guidelines.

The tool will consist of the following sections:

12. Section A: Sociodemographic Characteristics

- Age
- Residence
- Educational status
- Occupation

Section B: Maternal and obstetric history

- Gravida and parity
- Gestational age
- Previous history of PPH
- Previous caesarean section
- Antenatal care details
- Haemoglobin level during pregnancy

Section C: Clinical and obstetric risk factors

- Maternal anaemia
- Hypertensive disorders
- Multiple pregnancy
- Placental abnormalities
- Prolonged or obstructed labour
- Induction or augmentation of labour
- Mode of delivery
- Uterine atony
- Retained placental tissue
- Genital tract trauma
- Coagulation abnormalities

Section D: Assessment of postpartum haemorrhage

- Objectively measured blood loss
- Time of onset
- Type of PPH
- Severity of blood loss

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- Vital signs and haemodynamic status
- Uterine tone

13. Section E: Maternal Outcomes

- Haemoglobin changes
- Blood transfusion
- Medical management
- Surgical interventions
- Hypovolaemic shock
- Intensive care admission
- Duration of hospital stay
- Maternal mortality, if any

14. Operational Definition And Diagnosis Of Pph

Postpartum haemorrhage will be identified according to the diagnostic criteria specified in the 2025 WHO consolidated guidelines.

For this study, the primary PPH outcome will include objectively measured cumulative blood loss of at least 500 mL within 24 hours after birth, or at least 300 mL accompanied by an abnormal haemodynamic sign, whichever occurs first. Severe PPH will be separately classified according to the protocol.

Blood loss will be measured using calibrated collection devices and other institutionally approved objective methods, including assessment of blood loss during caesarean delivery. Clinical findings and haemodynamic parameters will also be documented.

15. Data Collection Procedure

After obtaining institutional permission and ethical committee approval, eligible women will be identified in the labour room and obstetric department.

The purpose and procedure of the study will be explained to eligible participants, and informed consent will be obtained where required.

Relevant sociodemographic, maternal and obstetric information will be collected through interviews and review of clinical records. Blood loss during childbirth and the postpartum period will be assessed using the hospital's approved objective measurement procedures.

Women diagnosed with postpartum haemorrhage will be followed clinically until discharge to document maternal outcomes. All clinical treatment and emergency management will remain under the responsibility of the treating obstetric team. Participation in the research will not delay or alter standard clinical care.

16. Validity And Reliability Of The Tool

The data collection proforma will be submitted to experts in Obstetrics and Gynaecology, Obstetric and Gynaecological Nursing, Community Health Nursing and Biostatistics for content validation.

Necessary modifications will be made based on expert suggestions. A pilot assessment may be conducted after obtaining the necessary approvals. The reliability and consistency of the data collection procedures will be evaluated before the main study.

17. Ethical Considerations

- Approval will be obtained from the Institutional Ethics Committee before commencement of the study.
- Written informed consent will be obtained where required.
- Permission will be obtained from the concerned hospital authorities and department.
- Confidentiality and anonymity of participants will be maintained.
- Patient information will be used exclusively for the approved research purposes.
- Participation will be voluntary, and refusal to participate will not affect the care received.
- Standard clinical management will not be modified or delayed for research purposes.

18. Plan For Data Analysis

Data will be coded, entered and analysed using appropriate statistical software.

Descriptive statistics:

- Frequency and percentage will be used for categorical variables.
- Mean and standard deviation will be used for normally distributed continuous variables.
- Median and interquartile range will be used for skewed continuous variables.

4. Prevalence of PPH will be calculated with a 95% confidence interval.

IV. MATERIALS AND METHODS

1. Research Approach

A quantitative research approach will be adopted to assess the prevalence, associated risk factors and maternal outcomes of postpartum haemorrhage among women delivering at a selected tertiary care hospital.

2. Research Design

A prospective observational hospital-based study design will be used. The study will involve systematic observation and

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collection of clinical information from eligible women during delivery and the immediate postpartum period without introducing any experimental intervention.

3 Setting Of The Study
The study will be conducted in the Labour Room, Obstetrics and Gynaecology Department, and postnatal wards of a selected tertiary care hospital.

4.Study Population
The study population will consist of all eligible pregnant women admitted for childbirth at the selected tertiary care hospital during the study period.

5.Study Duration
The proposed study will be conducted over a period of six months following institutional approval and ethical clearance. The duration may be modified according to the calculated sample size and expected monthly delivery rate.

6. Sample Size
The sample size will be calculated using the standard formula for estimating prevalence:

$$n = Z^2 \times P \times (1 - P) / d^2$$

Where:

n = Required sample size

Z = Standard normal value at 95% confidence level (1.96)

P = Expected prevalence of postpartum haemorrhage based on published literature or pilot data

d = Absolute precision or margin of error

If the expected prevalence is unknown, an assumed prevalence of 50% and an absolute precision of 5% will give an initial sample size of approximately 384 women. An additional allowance for incomplete observations or missing data may be considered. The final sample size will be determined before recruitment.

7. Sampling Technique
Consecutive sampling will be adopted. All eligible women admitted for delivery during the study period will be considered for recruitment until the required sample size is achieved.

8. Inclusion Criteria
Women admitted for vaginal or caesarean delivery at the selected tertiary care hospital.Women delivering during the approved study period.Women providing informed consent, where required by the ethics committee.

9. Exclusion Criteria
Women referred after delivery from another healthcare facility when reliable blood-loss information from childbirth is unavailable.

Women whose delivery and postpartum clinical records are insufficient to determine the study outcome.

Women who decline participation, where individual consent is required.

10. Variables Of The Study
Independent variables:

11. Maternal Age
Parity and gravidity

Previous history of postpartum haemorrhage

12. Antenatal Anaemia
- Hypertensive disorders of pregnancy
- Multiple pregnancy
- Gestational age

13. Placental Abnormalities
Induction or augmentation of labour

- Duration of labour
- Mode of delivery

14. Instrumental Delivery
Dependent variables:

- Occurrence of postpartum haemorrhage
- Severity of postpartum haemorrhage
- Maternal complications and clinical outcomes

15. Data Collection Tool
A structured data collection proforma will be developed based on the study objectives, relevant literature and current clinical guidelines.

The tool will consist of the following sections:

Section A: Sociodemographic characteristics

Age

Residence

Educational status

16. Occupation
Section B: Maternal and obstetric history

Gravida and parity

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17. Gestational Age

- Previous history of PPH
- Previous caesarean section
- Antenatal care details
- Haemoglobin level during pregnancy
- Section C: Clinical and obstetric risk factors
- Maternal anaemia
- Hypertensive disorders
- Multiple pregnancy

18. Placental Abnormalities

- Prolonged or obstructed labour
- Induction or augmentation of labour
- Mode of delivery

19. Uterine Atony

- Retained placental tissue
- Genital tract trauma

20. Coagulation Abnormalities

Section D: Assessment of postpartum haemorrhage

Objectively measured blood loss

Time of onset

21. Type Of Pph

Severity of blood loss

Vital signs and haemodynamic status

Uterine tone

Section E: Maternal outcomes

Haemoglobin changes

Blood transfusion

Medical management

Surgical interventions

22. Hypovolaemic Shock

- Intensive care admission
- Duration of hospital stay
- Maternal mortality, if any

23. Operational Definition And Diagnosis Of Pph

Postpartum haemorrhage will be identified according to the diagnostic criteria specified in the 2025 WHO consolidated guidelines.

For this study, the primary PPH outcome will include objectively measured cumulative blood loss of at least 500 mL within 24 hours after birth, or at least 300 mL accompanied by an abnormal haemodynamic sign, whichever occurs first. Severe PPH will be separately classified according to the protocol.

Blood loss will be measured using calibrated collection devices and other institutionally approved objective methods, including assessment of blood loss during caesarean delivery. Clinical findings and haemodynamic parameters will also be documented.

24. Data Collection Procedure

After obtaining institutional permission and ethical committee approval, eligible women will be identified in the labour room and obstetric department.

The purpose and procedure of the study will be explained to eligible participants, and informed consent will be obtained where required.

Relevant sociodemographic, maternal and obstetric information will be collected through interviews and review of clinical records. Blood loss during childbirth and the postpartum period will be assessed using the hospital's approved objective measurement procedures.

Women diagnosed with postpartum haemorrhage will be followed clinically until discharge to document maternal outcomes. All clinical treatment and emergency management will remain under the responsibility of the treating obstetric team. Participation in the research will not delay or alter standard clinical care.

25. Validity And Reliability Of The Tool

The data collection proforma will be submitted to experts in Obstetrics and Gynaecology, Obstetric and Gynaecological Nursing, Community Health Nursing and Biostatistics for content validation.

Necessary modifications will be made based on expert suggestions. A pilot assessment may be conducted after obtaining the necessary approvals. The reliability and consistency of the data collection procedures will be evaluated before the main study.

26. Ethical Considerations

Approval will be obtained from the Institutional Ethics Committee before commencement of the study.

- Written informed consent will be obtained where required.
- Permission will be obtained from the concerned hospital authorities and department.

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- Confidentiality and anonymity of participants will be maintained.
- Patient information will be used exclusively for the approved research purposes.
- Participation will be voluntary, and refusal to participate will not affect the care received.
- Standard clinical management will not be modified or delayed for research purposes.

27. Plan For Data Analysis
Data will be coded, entered and analysed using appropriate statistical software.

Descriptive statistics:

- Frequency and percentage will be used for categorical variables.
- Mean and standard deviation will be used for normally distributed continuous variables.
- Median and interquartile range will be used for skewed continuous variables.
- Prevalence of PPH will be calculated with a 95% confidence interval.

Inferential statistics:

- Chi-square test or Fisher's exact test will be used to assess associations between categorical variables.
- Independent t-test or Mann–Whitney U test will be used for appropriate continuous-variable comparisons.
- Logistic regression analysis may be performed to identify independent factors associated with PPH, depending on the number of outcome events and available data.
- Adjusted odds ratios with 95% confidence intervals will be reported.
- A p-value of less than 0.05 will be considered statistically significant.

28. Presentation Of Findings
The findings will be presented using appropriate tables, charts and graphs to describe the prevalence of postpartum haemorrhage, distribution of associated risk factors and maternal outcomes.

V. MATERIALS AND METHODS

1. Research Approach
A quantitative research approach will be adopted to assess the prevalence, associated risk factors and maternal outcomes of postpartum haemorrhage among women delivering at a selected tertiary care hospital.

2. Research Design
A prospective observational hospital-based study design will be used. The study will involve systematic observation and collection of clinical information from eligible women during delivery and the immediate postpartum period without introducing any experimental intervention.

3. Setting Of The Study
The study will be conducted in the Labour Room, Obstetrics and Gynaecology Department, and postnatal wards of a selected tertiary care hospital.

4. Study Population
The study population will consist of all eligible pregnant women admitted for childbirth at the selected tertiary care hospital during the study period.

5. Study Duration
The proposed study will be conducted over a period of six months following institutional approval and ethical clearance. The duration may be modified according to the calculated sample size and expected monthly delivery rate.

6. Sample Size
The sample size will be calculated using the standard formula for estimating prevalence:

$$n = Z^2 \times P \times (1 - P) / d^2$$

Where:

n = Required sample size

Z = Standard normal value at 95% confidence level (1.96)

P = Expected prevalence of postpartum haemorrhage based on published literature or pilot data

d = Absolute precision or margin of error

If the expected prevalence is unknown, an assumed prevalence of 50% and an absolute precision of 5% will give an initial sample size of approximately 384 women. An additional allowance for incomplete observations or missing data may be considered. The final sample size will be determined before recruitment.

7. Sampling Technique
Consecutive sampling will be adopted. All eligible women admitted for delivery during the study period will be considered for recruitment until the required sample size is achieved.

8. Inclusion Criteria
Women admitted for vaginal or caesarean delivery at the selected tertiary care hospital.

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Women delivering during the approved study period.

Women providing informed consent, where required by the ethics committee.

9. Exclusion Criteria

Women referred after delivery from another healthcare facility when reliable blood-loss information from childbirth is unavailable.

Women whose delivery and postpartum clinical records are insufficient to determine the study outcome.

Women who decline participation, where individual consent is required.

10.Variables Of The Study

Independent variables:

11. Maternal Age

Parity and gravidity

Previous history of postpartum haemorrhage

12. Antenatal Anaemia

Hypertensive disorders of pregnancy

Multiple pregnancy

Gestational age

13. Placental Abnormalities

Induction or augmentation of labour

Duration of labour

Mode of delivery

14. Instrumental Delivery

Dependent variables:

Occurrence of postpartum haemorrhage

Severity of postpartum haemorrhage

Maternal complications and clinical outcomes

15. Data Collection Tool

A structured data collection proforma will be developed based on the study objectives, relevant literature and current clinical guidelines.

The tool will consist of the following sections:

Section A: Sociodemographic characteristics

Age

Residence

Educational status

5.16 Occupation

Section B: Maternal and obstetric history

Gravida and parity

- Gestational age
- Previous history of PPH
- Previous caesarean section
- Antenatal care details
- Haemoglobin level during pregnancy

Section C: Clinical and obstetric risk factors

- Maternal anaemia
- Hypertensive disorders
- Multiple pregnancy
- Placental abnormalities
- Prolonged or obstructed labour
- Induction or augmentation of labour
- Mode of delivery
- Uterine atony
- Retained placental tissue
- Genital tract trauma
- Coagulation abnormalities

Section D: Assessment of postpartum haemorrhage

- Objectively measured blood loss
- Time of onset
- Type of PPH
- Severity of blood loss
- Vital signs and haemodynamic status
- Uterine tone

Section E: Maternal outcomes

- Haemoglobin changes
- Blood transfusion
- Medical management
- Surgical interventions
- Hypovolaemic shock
- Intensive care admission
- Duration of hospital stay
- Maternal mortality, if any
- Operational Definition and Diagnosis of PPH
- Postpartum haemorrhage will be identified according to the diagnostic criteria specified in the 2025 WHO consolidated guidelines.

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For this study, the primary PPH outcome will include objectively measured cumulative blood loss of at least 500 mL within 24 hours after birth, or at least 300 mL accompanied by an abnormal haemodynamic sign, whichever occurs first. Severe PPH will be separately classified according to the protocol.

Blood loss will be measured using calibrated collection devices and other institutionally approved objective methods, including assessment of blood loss during caesarean delivery. Clinical findings and haemodynamic parameters will also be documented.

Data Collection Procedure

- After obtaining institutional permission and ethical committee approval, eligible women will be identified in the labour room and obstetric department.
- The purpose and procedure of the study will be explained to eligible participants, and informed consent will be obtained where required.
- Relevant sociodemographic, maternal and obstetric information will be collected through interviews and review of clinical records. Blood loss during childbirth and the postpartum period will be assessed using the hospital's approved objective measurement procedures.
- Women diagnosed with postpartum haemorrhage will be followed clinically until discharge to document maternal outcomes. All clinical treatment and emergency management will remain under the responsibility of the treating obstetric team. Participation in the research will not delay or alter standard clinical care.

Validity and Reliability of the Tool

- The data collection proforma will be submitted to experts in Obstetrics and Gynaecology, Obstetric and Gynaecological Nursing, Community Health Nursing and Biostatistics for content validation.
- Necessary modifications will be made based on expert suggestions. A pilot assessment may be conducted after obtaining the necessary approvals. The reliability and consistency of the data collection procedures will be evaluated before the main study.

Ethical Considerations

- Approval will be obtained from the Institutional Ethics Committee before commencement of the study.
- Written informed consent will be obtained where required.
- Permission will be obtained from the concerned hospital authorities and department.
- Confidentiality and anonymity of participants will be maintained.
- Patient information will be used exclusively for the approved research purposes.
- Participation will be voluntary, and refusal to participate will not affect the care received.
- Standard clinical management will not be modified or delayed for research purposes.

Plan for Data Analysis

- Data will be coded, entered and analysed using appropriate statistical software.
- Descriptive statistics:
- Frequency and percentage will be used for categorical variables.
- Mean and standard deviation will be used for normally distributed continuous variables.
- Median and interquartile range will be used for skewed continuous variables.
- Prevalence of PPH will be calculated with a 95% confidence interval.
- Inferential statistics:
- Chi-square test or Fisher's exact test will be used to assess associations between categorical variables.
- Independent t-test or Mann–Whitney U test will be used for appropriate continuous-variable comparisons.
- Logistic regression analysis may be performed to identify independent factors associated with PPH, depending on the number of outcome events and available data.
- Adjusted odds ratios with 95% confidence intervals will be reported.
- A p-value of less than 0.05 will be considered statistically significant.

Presentation of Findings

- The findings will be presented using appropriate tables, charts and graphs to describe the prevalence of postpartum haemorrhage, distribution of associated risk factors and maternal outcomes.
- Chi-square test or Fisher's exact test will be used to assess associations between categorical variables.
- Independent t-test or Mann–Whitney U test will be used for appropriate continuous-variable comparisons.
- Logistic regression analysis may be performed to identify independent factors associated with PPH, depending on the number of outcome events and available data.
- Adjusted odds ratios with 95% confidence intervals will be reported.

A p-value of less than 0.05 will be considered statistically significant.

17. Presentation Of Findings

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The findings will be presented using appropriate tables, charts and graphs to describe the prevalence of postpartum haemorrhage, distribution of associated risk factors and maternal outcomes.

- 5. To identify the relationship between the severity of postpartum haemorrhage and selected maternal outcomes.
- 6. To develop evidence-based recommendations for targeted prevention and early identification of postpartum haemorrhage among high-risk obstetric groups.

18. Research Hypotheses

1. H1: There is a significant association between selected maternal and obstetric risk factors and the occurrence of postpartum haemorrhage.

2. H2: There is a significant association between the severity of postpartum haemorrhage and maternal outcomes.

19. Operational Definitions

Term	Operational definition
Postpartum haemorrhage	Blood loss meeting the diagnostic criteria specified in the study protocol within 24 hours after birth.
Prevalence	Proportion of eligible delivery cases developing PPH during the study period.
Risk factors	Selected maternal, obstetric and clinical characteristics associated with PPH.
Maternal outcomes	Clinical consequences such as blood transfusion, severe anaemia, shock, ICU admission, surgical intervention and length of hospital stay.
High-risk obstetric groups	Women with identified maternal or obstetric characteristics associated with increased risk of PPH.

VI. MATERIALS AND METHODS

1. Research Approach
A quantitative research approach will be adopted to assess the prevalence, associated risk factors and maternal outcomes of postpartum haemorrhage among women delivering at a selected tertiary care hospital.

2. Research Design
A prospective observational hospital-based study design will be used. The study will involve systematic observation and collection of clinical information from eligible women during delivery and the immediate postpartum period without introducing any experimental intervention.

3. Setting Of The Study
The study will be conducted in the Labour Room, Obstetrics and Gynaecology Department, and postnatal wards of a selected tertiary care hospital.

4. Study Population
The study population will consist of all eligible pregnant women admitted for childbirth at the selected tertiary care hospital during the study period.

5. Study Duration
The proposed study will be conducted over a period of six months following institutional approval and ethical clearance. The duration may be modified according to the calculated sample size and expected monthly delivery rate.

6. Sample Size
The sample size will be calculated using the standard formula for estimating prevalence:

$n = Z^2 \times P \times (1 - P) / d^2$

Where:

1. n = Required sample size

• Z = Standard normal value at 95% confidence level (1.96)

1. P = Expected prevalence of postpartum haemorrhage based on published literature or pilot data

2. d = Absolute precision or margin of error

If the expected prevalence is unknown, an assumed prevalence of 50% and an absolute precision of 5% will give an initial sample size of approximately 384 women. An additional allowance for incomplete observations or missing data may be considered. The final sample size will be determined before recruitment.

7. Sampling Technique
Consecutive sampling will be adopted. All eligible women admitted for delivery during the study period will be considered for recruitment until the required sample size is achieved.

8. Inclusion Criteria

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- Women admitted for vaginal or caesarean delivery at the selected tertiary care hospital.
- Women delivering during the approved study period.
- Women providing informed consent, where required by the ethics committee.

9. Exclusion Criteria

- Women referred after delivery from another healthcare facility when reliable blood-loss information from childbirth is unavailable.
- Women whose delivery and postpartum clinical records are insufficient to determine the study outcome.
- Women who decline participation, where individual consent is required.

10. Variables Of The Study

Independent variables:

- Maternal age
- Parity and gravidity
- Previous history of postpartum haemorrhage
- Antenatal anaemia
- Hypertensive disorders of pregnancy
- Multiple pregnancy
- Gestational age
- Placental abnormalities
- Induction or augmentation of labour
- Duration of labour
- Mode of delivery
- Instrumental delivery

Dependent variables:

- Occurrence of postpartum haemorrhage
- Severity of postpartum haemorrhage
- Maternal complications and clinical outcomes

11. Data Collection Tool

A structured data collection proforma will be developed based on the study objectives, relevant literature and current clinical guidelines.

The tool will consist of the following sections:

Section A: Sociodemographic Characteristics

- Age
- Residence
- Educational status
- Occupation

Section B: Maternal and obstetric history

- Gravida and parity
- Gestational age
- Previous history of PPH
- Previous caesarean section
- Antenatal care details
- Haemoglobin level during pregnancy

Section C: Clinical and obstetric risk factors

- Maternal anaemia
- Hypertensive disorders
- Multiple pregnancy
- Placental abnormalities
- Prolonged or obstructed labour
- Induction or augmentation of labour
- Mode of delivery
- Uterine atony
- Retained placental tissue
- Genital tract trauma
- Coagulation abnormalities

Section D: Assessment of postpartum haemorrhage

- Objectively measured blood loss
- Time of onset
- Type of PPH
- Severity of blood loss
- Vital signs and haemodynamic status
- Uterine tone

13. Section E: Maternal Outcomes

- Haemoglobin changes
- Blood transfusion
- Medical management
- Surgical interventions
- Hypovolaemic shock
- Intensive care admission
- Duration of hospital stay
- Maternal mortality, if any

14. Operational Definition And Diagnosis Of Pph

Postpartum haemorrhage will be identified according to the diagnostic criteria specified in the 2025 WHO consolidated guidelines.

For this study, the primary PPH outcome will include objectively measured cumulative blood loss of at least 500 mL within 24 hours after birth, or at least 300 mL accompanied by an abnormal haemodynamic sign, whichever occurs first. Severe PPH will be separately classified according to the protocol.

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Blood loss will be measured using calibrated collection devices and other institutionally approved objective methods, including assessment of blood loss during caesarean delivery. Clinical findings and haemodynamic parameters will also be documented.

15. Data Collection Procedure

After obtaining institutional permission and ethical committee approval, eligible women will be identified in the labour room and obstetric department.

The purpose and procedure of the study will be explained to eligible participants, and informed consent will be obtained where required.Relevant sociodemographic, maternal and obstetric information will be collected through interviews and review of clinical records. Blood loss during childbirth and the postpartum period will be assessed using the hospital's approved objective measurement procedures.

Women diagnosed with postpartum haemorrhage will be followed clinically until discharge to document maternal outcomes. All clinical treatment and emergency management will remain under the responsibility of the treating obstetric team. Participation in the research will not delay or alter standard clinical care.

16. Validity And Reliability Of The Tool

The data collection proforma will be submitted to experts in Obstetrics and Gynaecology, Obstetric and Gynaecological Nursing, Community Health Nursing and Biostatistics for content validation.

Necessary modifications will be made based on expert suggestions. A pilot assessment may be conducted after obtaining the necessary approvals. The reliability and consistency of the data collection procedures will be evaluated before the main study.

17. Ethical Considerations

- Approval will be obtained from the Institutional Ethics Committee before commencement of the study.
- Written informed consent will be obtained where required.
- Permission will be obtained from the concerned hospital authorities and department.
- Confidentiality and anonymity of participants will be maintained.
- Patient information will be used exclusively for the approved research purposes.
- Participation will be voluntary, and refusal to participate will not affect the care received.
- Standard clinical management will not be modified or delayed for research purposes.

18. Plan For Data Analysis

Data will be coded, entered and analysed using appropriate statistical software.

Descriptive statistics:

- Frequency and percentage will be used for categorical variables.
- Mean and standard deviation will be used for normally distributed continuous variables.
- Median and interquartile range will be used for skewed continuous variables.
- Prevalence of PPH will be calculated with a 95% confidence interval.

Inferential statistics:

- Chi-square test or Fisher's exact test will be used to assess associations between categorical variables.
- Independent t-test or Mann–Whitney U test will be used for appropriate continuous-variable comparisons.
- Logistic regression analysis may be performed to identify independent factors associated with PPH, depending on the number of outcome events and available data.
- Adjusted odds ratios with 95% confidence intervals will be reported.

A p-value of less than 0.05 will be considered statistically significant.

19. Presentation Of Findings

The findings will be presented using appropriate tables, charts and graphs to describe the prevalence of postpartum haemorrhage, distribution of associated risk factors and maternal outcomes.

1. **1. Discussion**

Interpret the major findings of the study:

- Prevalence of postpartum haemorrhage among delivery cases.
- Major obstetric and maternal risk factors associated with PPH.
- Maternal complications and outcomes observed.
- Significant associations between risk factors and PPH.
- Comparison of findings with previous studies.

VII. KEY FINDINGS

Highlight the most important results:

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- Overall prevalence of PPH.
- Most commonly identified risk factors.
- Most frequent maternal complications.
- High-risk obstetric groups requiring special attention.
- **3. Proposed Targeted Preventive Interventions**

1. Primary Prevention

- Antenatal identification of high-risk pregnancies.
- Early detection and treatment of maternal anaemia.
- Identification of placental abnormalities and previous PPH.

2. Secondary Prevention

- Close monitoring during labour and delivery.
- Active management of the third stage of labour.
- Early recognition of excessive blood loss.
- Timely administration of appropriate treatment.

3. Tertiary Prevention

- Prompt management of established PPH.
- Availability of blood and blood products.

Unable to connect

1. **Development of a Targeted Preventive Intervention Programme for PPH**

Proposed title: Targeted Prevention and Early Management Programme for Postpartum Haemorrhage Among High-Risk Obstetric Women.

4. General Objective

To reduce the incidence and severity of postpartum haemorrhage through early identification of high-risk obstetric women, implementation of preventive measures, prompt recognition and timely management.

5. Specific Objectives

- To identify pregnant women with major risk factors for PPH.
- To improve antenatal screening and correction of maternal anaemia.
- To promote evidence-based preventive practices during labour and delivery.
- To strengthen early identification of excessive postpartum blood loss.
- To improve the knowledge and skills of nurses and midwives regarding PPH prevention.
- To establish an effective emergency response system for PPH.
- To reduce PPH-related maternal complications and mortality.

VIII. PROPOSED RISK ASSESSMENT AND CLASSIFICATION FRAMEWORK

The following framework can be developed based on the risk factors identified in your study.

Risk category	Identified risk factors	Suggested preventive approach
Previous obstetric history	Previous PPH, previous uterine surgery	Review obstetric history and prepare an individualized birth plan
Maternal factors	Anaemia, coagulation disorders	Antenatal screening and appropriate correction
Pregnancy-related factors	Multiple pregnancy, polyhydramnios, macrosomia	Identify and plan appropriate delivery care
Placental factors	Placenta previa, placental abnormalities	Antenatal diagnosis and specialist delivery planning
Labour-related factors	Prolonged labour, induced labour	Close monitoring and timely management
Delivery-related factors	Operative vaginal delivery, caesarean section	Delivery preparedness and postpartum monitoring

Note: Risk classification should follow the hospital's approved obstetric protocol. PPH can also occur in women without identifiable risk factors.

IX. PROPOSED NURSING INTERVENTION PROTOCOL

Nursing care pathway for prevention of PPH
1.Antenatal period

- Assess obstetric and medical history.
- Screen for anaemia and other relevant conditions.
- Identify previous PPH and placental abnormalities.
- Educate mothers about warning signs.

2. Admission and labour period

- Assess maternal risk factors.

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- Monitor vital signs and progress of labour.
- Review haemoglobin and blood group information.
- Communicate high-risk status to the obstetric team.

3. Delivery period

- Ensure availability of uterotonics and emergency equipment.
- Implement active management of the third stage of labour according to protocol.
- Assess uterine tone and quantify blood loss.

4. Immediate postpartum period

- Monitor uterine contraction and vaginal bleeding.
- Assess pulse, blood pressure and general condition.
- Identify early signs of hypovolemia.
- Initiate the hospital PPH response protocol when indicated.

5.Follow-up period

- **Development of a Targeted Preventive Intervention Programme for PPH**

Proposed title: Targeted Prevention and Early Management Programme for Postpartum Haemorrhage Among High-Risk Obstetric Women.

1. General Objective

To reduce the incidence and severity of postpartum haemorrhage through early identification of high-risk obstetric women, implementation of preventive measures, prompt recognition and timely management.

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- To identify pregnant women with major risk factors for PPH.
- To improve antenatal screening and correction of maternal anaemia.
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- To establish an effective emergency response system for PPH.
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Nursing care pathway for prevention of PPH

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- Identify previous PPH and placental abnormalities.
- Educate mothers about warning signs.

2. Admission and labour period

- Assess maternal risk factors.
- Monitor vital signs and progress of labour.
- Review haemoglobin and blood group information.
- Communicate high-risk status to the obstetric team.

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3. Delivery period

- Ensure availability of uterotonics and emergency equipment.
- Implement active management of the third stage of labour according to protocol.
- Assess uterine tone and quantify blood loss.

4. Immediate postpartum period

- Monitor uterine contraction and vaginal bleeding.
- Assess pulse, blood pressure and general condition.
- Identify early signs of hypovolemia.
- Initiate the hospital PPH response protocol when indicated.

5. Follow-up period

- continue further
- Continuing your research study, the next sections should focus on translating the research findings into practical interventions, evaluating their effectiveness, and establishing a framework for reducing postpartum haemorrhage (PPH) in high-risk obstetric women.

1. Development Of A Targeted Preventive Intervention Package For Pph

Based on the findings of the study, a structured **Targeted Postpartum Haemorrhage Prevention and Early Detection Package** can be developed for implementation in the selected tertiary care hospital.

2. Components Of The Intervention Package

Component	Proposed intervention
Risk identification	Antenatal and admission-based PPH risk assessment
Anaemia management	Early screening, treatment and follow-up
Labour monitoring	Regular assessment of labour progress
Delivery preparedness	Identification of high-risk cases and emergency readiness
PPH prevention	Prophylactic uterotonic administration as per guidelines
Early detection	Objective measurement of blood loss and clinical monitoring
Emergency management	Prompt implementation of the hospital PPH protocol
Postpartum care	Monitoring of vital signs, uterine tone and maternal recovery

3. Proposed Nursing Intervention Protocol

The following protocol can be used as a proposed nursing intervention framework.

PPH prevention and early detection pathway

1. **Antenatal period**

- Assess maternal and obstetric history.
- Identify anaemia and previous PPH.
- Screen for placental abnormalities and multiple pregnancy.
- Ensure appropriate antenatal management.

2. **On admission for delivery**

- Assess PPH risk category.
- Check haemoglobin and relevant investigations.
- Review blood group and cross-match requirements according to risk.
- Inform the obstetric team about identified risks.

3.. **During labour and delivery**

- Monitor labour progress.
- Identify uterine overdistension and prolonged labour.
- Ensure availability of emergency equipment.
- Follow evidence-based third-stage labour management.

4.. **Immediately after delivery**

- Quantify blood loss.
- Assess uterine tone and vital signs.
- Identify abnormal bleeding promptly.
- Activate the PPH response protocol when indicated.

5. **Postpartum observation**

- Monitor maternal haemodynamic status.
- Assess uterine contraction and vaginal bleeding.
- Evaluate haemoglobin when clinically indicated.
- Provide appropriate treatment and follow-up.

4. Development Of A Pph Risk Assessment Checklist

A standardized checklist can be prepared for identifying women at increased risk of PPH.

Risk factor	Assessment
Previous history of PPH	Yes/No
Maternal anaemia	Yes/No
Multiple pregnancy	Yes/No
Placenta previa	Yes/No
Placental abruption	Yes/No
Prolonged labour	Yes/No
Induction or augmentation of labour	Yes/No
Uterine overdistension	Yes/No
Previous caesarean section	Yes/No
Coagulation disorder	Yes/No

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Note: This is a proposed research checklist, not a validated prediction tool. Risk assessment should follow the hospital's approved obstetric protocol.

5. Implementation Plan For The Proposed Intervention

The intervention can be implemented in the selected tertiary care hospital in the following phases.

Phase	Activities
Phase I: Preparation	Review research findings and develop intervention materials
Phase II: Validation	Obtain expert opinions from obstetricians, nursing specialists and researchers
Phase III: Training	Conduct training for nurses and midwives
Phase IV: Implementation	Introduce the intervention package in the maternity unit
Phase V: Monitoring	Monitor compliance with preventive practices
Phase VI: Evaluation	Assess intervention outcomes and identify areas for improvement

XII. EVALUATION OF THE INTERVENTION

The effectiveness of the proposed intervention can be evaluated using measurable indicators.

1. Process Indicators

- Percentage of women receiving PPH risk assessment.
- Percentage of high-risk women identified before delivery.
- Percentage receiving recommended prophylactic uterotonics.
- Percentage of deliveries with documented blood-loss measurement.
- Percentage of nursing staff trained in PPH management.

2. Outcome Indicators

- Prevalence of PPH before and after intervention.
- Incidence of severe PPH.
- Requirement for blood transfusion.
- Incidence of hypovolemic shock.
- ICU admission due to PPH.
- Maternal morbidity and mortality.

3. Evaluation Methods

- Review of maternity records.
- Nursing observation checklists.
- Clinical audit reports.
- Pre-test and post-test knowledge assessments.
- Comparison of maternal outcomes before and after implementation.

4. Expected Outcomes Of The Proposed Intervention

The proposed intervention is expected to:

- Improve early identification of women at increased risk of PPH.
- Improve nurses' knowledge and preparedness regarding PPH.
- Strengthen adherence to evidence-based preventive practices.
- Promote early recognition of excessive blood loss.
- Reduce delays in initiating emergency management.
- Improve maternal safety and quality of obstetric care.

These are expected outcomes, not established effects; effectiveness must be evaluated after implementation.

12.5 Dissemination Of Research Findings

The findings of the study can be disseminated through:

1. Presentation at nursing and obstetric conferences.
2. Publication in peer-reviewed nursing and medical journals.
3. Presentation at hospital research committee meetings.
4. Sharing findings with maternity and labour room nursing personnel.
5. Organizing continuing nursing education programmes.
6. Developing educational materials for maternal healthcare providers.

6. Future Scope Of The Study

Further research can be conducted in the following areas:

- A multicentre study to determine PPH prevalence across different healthcare institutions.
- A prospective cohort study to identify predictors of PPH.
- An interventional study to evaluate the effectiveness of a structured PPH prevention package.

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- A comparative study of maternal outcomes among high-risk and low-risk obstetric groups.
- A study to assess nurses' knowledge and clinical practices regarding PPH prevention.
- A follow-up study to assess maternal recovery after PPH.

7. Overall Research Framework

The overall relationship between your research variables and proposed intervention can be represented as follows:

Maternal and obstetric characteristics

Age, parity, antenatal history, anaemia and obstetric complications

Critical risk factors for PPH

Occurrence and prevalence of PPH

Assessment of maternal outcomes

Blood transfusion, shock, ICU admission and other complications

Development of targeted preventive interventions

Improved maternal safety and quality of obstetric care

8. Final Conclusion

Postpartum haemorrhage remains an important obstetric complication that requires timely identification, effective prevention and prompt clinical management. Determining its prevalence, identifying critical risk factors and assessing maternal outcomes provide valuable information for improving maternal healthcare services.

The proposed targeted preventive intervention package emphasizes risk assessment, antenatal optimization, appropriate intrapartum care, active management of the third stage of labour, early detection of excessive blood loss and timely emergency response.

Implementation and evaluation of this package may help strengthen the quality of obstetric nursing care and contribute to reducing preventable maternal morbidity and mortality.

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