

## **Chapter One**

### **Introduction**

#### **1.1 Background to the Study**

For many women, pregnancy and childbirth can be life-threatening, particularly in environments with limited resources. Reducing maternal and neonatal mortality requires effective birth preparation and complication readiness, but a woman's capacity to get ready for a safe delivery without any problem can be greatly impacted by a number of factors, such as education, socioeconomic status, cultural norms, and access to healthcare.

Maternal mortality remains a significant public health concern globally, with approximately 295,000 women dying from pregnancy-related complications every year<sup>1</sup>. In Sub-Saharan Africa 545 death per 100,000 live births. While maternal mortality in the region has dropped by 40% from 727 to 442 death per 100,000 live birth, Africa still account for 70% global maternal death. In Nigeria, maternal mortality ratio is alarmingly high, with 814 deaths per 100,000 live births <sup>2</sup>. One of the critical factors contributing to these deaths is the lack of birth preparedness and complication readiness (BPCR) among pregnant women<sup>5</sup>. BPCR is a vital component of antenatal care, which involves planning for a safe delivery, identifying potential complications, and knowing what actions to take in case of an emergency<sup>2</sup>.

Studies have shown that women who are well-prepared for birth and its complications from the first pregnancy are more likely to have better maternal outcomes than the multiparous women who have given birth before<sup>2</sup>. Regardless of the importance of BPCR, many pregnant women in Nigeria and other developing countries lack adequate knowledge and practice of BPCR <sup>3,4,5,6</sup>. Factors such as low educational level,

lack of access to antenatal care, and limited knowledge about BPCR have been identified as barriers to BPCR practices<sup>7,8,9,10</sup>. Primigravida's are particularly vulnerable to complications during pregnancy and childbirth due to their lack of experience and knowledge about pregnancy and childbirth<sup>26</sup>. Studies have shown that primigravida's are more likely to experience complications during pregnancy and childbirth, such as pre-eclampsia and obstructed labor<sup>11</sup>.

Nigeria, as one of the countries with the highest maternal mortality ratios, continues to grapple with persistent maternal health challenges despite decades of national and international interventions<sup>2</sup>. High levels of perinatal, neonatal and maternal mortality remain major public-health challenges in Nigeria and the world over<sup>2</sup>. About one third of neonatal deaths occur on the first day of life, and the majority of maternal deaths occur during labour, delivery, and within 24 hours postpartum<sup>3</sup>. The World Health Organization (WHO), asserts that many of these deaths are preventable through timely access to skilled care before, during, and after childbirth<sup>4</sup>. One key approach to improving maternal outcomes is promoting Birth Preparedness and Complication Readiness (BPCR), which encompasses a series of proactive steps taken by pregnant women, their families, communities, and health systems to plan for normal childbirth and anticipate the actions needed in case of obstetric emergencies<sup>5,6</sup>.

In many communities, pregnancy is often regarded as a routine and natural occurrence, leading most families to neglect proper planning for childbirth or potential emergencies<sup>7,8</sup>. However, birth preparedness constitutes a key component of focused antenatal care, emphasizing the need for expectant mothers and their families to be ready for both normal delivery and unforeseen complications<sup>8</sup>. When pregnancy-related emergencies occur, families who are ill-prepared often lose valuable time

trying to secure funds, arrange transportation, and locate an appropriate healthcare facility, which can result in critical delays and, in many cases, adverse outcomes<sup>9</sup>.

Therefore, all women and their families must receive adequate education and awareness regarding the warning signs of pregnancy complications and the necessary actions to take when such signs appear. Furthermore, the development and reinforcement of community-based support systems are vital to ensure timely referrals and the availability of dependable transportation networks that can facilitate rapid access to emergency obstetric care<sup>10</sup>.

Birth Preparedness and Complication Readiness is a component of the Safe Motherhood Initiative and includes identifying a skilled birth attendant and place of delivery, saving money, arranging transportation, identifying a blood donor, and recognizing danger signs of pregnancy and childbirth<sup>5</sup>. When effectively implemented, BPCR can reduce the delays in seeking, reaching, and receiving adequate care delays which have been well-established as key contributors to maternal and neonatal mortality through the Three Delays Model<sup>11</sup>. Globally, studies have investigated the factors affecting BPCR among primigravida women, uncovering a complex interaction of socio-demographic, cultural, and health system-related characteristics. Factors frequently recognised encompass maternal age, educational attainment, accessibility to antenatal care facilities, understanding of warning signals, socio-economic position, and support from partners or family members.

In Sub-Saharan Africa, inadequate understanding of BPCR, deficient health infrastructure, and entrenched traditional beliefs frequently obstruct effective preparedness<sup>11,12</sup>. In contrast, research from affluent environments underscores the beneficial effects of early antenatal education, individualised counselling, and strong healthcare systems in advancing BPCR practices<sup>13</sup>. Studies in Nigeria have reported

poor levels of BPCR practices among pregnant women<sup>12,13,14,15</sup>. Factors such as low educational attainment, poverty, cultural norms, limited knowledge of danger signs, poor male involvement, and inadequate antenatal counseling have all been identified as barriers to optimal BPCR<sup>11,13,14,16,17</sup>. Higher educational levels have consistently been linked to improved birth preparedness and complication readiness (BPCR). In northern Nigeria, for instance, women with higher levels of education were found to be significantly more likely to be prepared for birth<sup>13</sup>. Similarly, increased monthly income has been associated with better BPCR outcomes, as financial stability often enhances access to necessary maternal healthcare services<sup>12</sup>.

Age also plays a role; younger primigravidae, particularly those between the ages of 19 and 25, may have different needs and access to resources compared to their older counterparts<sup>12</sup>. Furthermore, the geographical location where a woman resides, whether in an urban or rural setting, can influence her access to healthcare facilities and vital information<sup>14</sup>. These sociodemographic variables can also interact with cultural beliefs and practices, indirectly shaping BPCR behaviours and decisions. In addition to demographic factors, knowledge-related components significantly influence BPCR. Awareness of danger signs during pregnancy, childbirth, and the postpartum period is essential for prompt decision-making and appropriate healthcare-seeking behavior<sup>12</sup>. Several studies in Nigeria have demonstrated a strong positive correlation between knowledge of these danger signs and birth preparedness<sup>11,13,14</sup>.

Beyond this, a clear understanding of what constitutes BPCR, such as identifying a skilled birth attendant, arranging for transportation, and saving money for delivery-related expenses is fundamental for effective implementation and planning<sup>14</sup>. Health system-related factors also critically impact BPCR. Antenatal care (ANC) utilisation serves as a key platform for educating and counseling women about BPCR<sup>15</sup>.

However, it is not just the attendance at Antenatal clinic that matters, but the quality of care and the delivery of BPCR information during these visits<sup>12</sup>. Access to healthcare facilities, especially in terms of proximity and the availability of transportation, is vital for ensuring timely care<sup>12</sup>. Equally important is the availability of skilled birth attendants, as their presence is a cornerstone of safe deliveries and a key factor in reducing maternal mortality<sup>13</sup>. The cost of healthcare, including expenses related to ANC and delivery services, often acts as a barrier to effective BPCR, especially among low-income families<sup>13</sup>.

The role of community support cannot be overstated. The involvement of family members, friends, and broader community structures significantly enhances BPCR practices. In particular, the involvement of husbands or partners in BPCR education has been shown to lead to more favourable maternal health outcomes<sup>9, 15</sup>. On the other hand, certain contextual challenges can impede BPCR efforts. In areas affected by community insecurity, women may be unable or unwilling to access healthcare facilities, thereby compromising their preparedness<sup>13</sup>. Similarly, women who experience premature delivery may encounter unique difficulties that disrupt their plans and limit their ability to fully implement BPCR strategies<sup>12</sup>. In Ibadan, Nigeria, studies have revealed varying levels of birth preparedness and complication readiness (BPCR) among pregnant women, often influenced by a combination of factors<sup>27,28</sup>.

Findings indicate that educational status, particularly secondary and tertiary education, significantly enhances BPCR practices, as educated women are more likely to recognize danger signs and make necessary arrangements for delivery<sup>28</sup>. Employment and higher income levels also positively influence BPCR by improving financial capacity for transportation, healthcare services, and other logistics<sup>28</sup>. Additionally, regular antenatal care attendance has been associated with increased BPCR, especially

when health workers provide comprehensive counseling<sup>27</sup>. However, gaps remain in the full implementation of BPCR components, with many women still lacking adequate knowledge of danger signs or failing to identify skilled birth attendants or emergency plans. Cultural beliefs, partner involvement, and distance to health facilities also emerged as critical factors affecting preparedness levels among pregnant women in Ibadan<sup>28</sup>.

A birth preparedness plan encompasses the pregnant woman's identification and arrangement of several key components essential for safe delivery and emergency response. These include the intended place of delivery, the preferred skilled birth attendant, and the nearest suitable healthcare facility where care can be promptly accessed when needed<sup>18</sup>. The plan also involves saving funds for delivery and potential emergency costs, selecting a decision-maker during the childbirth process, designating a birth companion, and arranging for household or childcare support while the woman is at the health facility. Additionally, it includes planning reliable transportation both for normal delivery and for emergencies, as well as identifying compatible blood donors who may be called upon in case of obstetric emergencies<sup>8</sup>.

World Health Organization asserts that every pregnant woman should develop a written birth and emergency plan that outlines what to do and where to go in the event of complications or unexpected occurrences during pregnancy, childbirth, or the immediate postpartum period. This plan should be discussed and periodically reviewed with a skilled healthcare provider during each antenatal visit, and particularly no later than one month before the expected date of delivery<sup>19</sup>.

Primigravida, those pregnant for the first time, are particularly vulnerable due to their lack of prior experience with pregnancy and childbirth<sup>20</sup>. They may be unaware of the

potential complications and the importance of planning ahead. In addition, sociocultural expectations, fear of stigmatization, or the assumption that childbirth is a natural event that does not require formal preparation may further hinder their readiness. While antenatal care (ANC) is designed to serve as a platform for educating pregnant women about BPCR, the effectiveness of such counseling varies widely across healthcare facilities, and the extent to which primigravida women internalise and act upon such information is not well understood. This group may also face unique emotional, psychological, and logistical challenges that distinguish them from multiparous women and warrant tailored attention<sup>20</sup>.

The level of education plays a crucial role in determining whether a woman decides to seek care at a health facility or not<sup>21</sup>. Limited knowledge about the recognition of danger signs and pregnancy-related complications often leads to a lower perception of risk severity, which in turn contributes to delays in making decisions to access professional healthcare<sup>21</sup>. Evidence indicates that in developing nations, over 60% of women have received some education on danger signs during antenatal care visits<sup>21</sup>. These danger signs are not direct obstetric complications but rather symptoms easily identifiable by non-medical individuals. They serve as important warning indicators that can signal serious conditions during pregnancy, childbirth, or the postpartum period<sup>22</sup>. It is therefore vital for both women and healthcare professionals to recognize these signs early, as this enables prompt action and timely initiation of treatment to prevent complications<sup>22</sup>.

Generally, the danger signs of pregnancy are grouped into three main stages: during pregnancy—severe vaginal bleeding, swelling of the hands or face, and blurred vision<sup>19</sup>; during labor and delivery—prolonged labor lasting more than 12 hours, heavy bleeding, convulsions, and retained placenta<sup>19</sup>; and during the postpartum

period—excessive vaginal bleeding, fever, and foul-smelling vaginal discharge<sup>19</sup>. The concept of birth preparedness aims to enhance the use of maternal health services by minimizing delays in decision-making, reaching healthcare facilities, and receiving appropriate care<sup>19</sup>. Recognizing its importance in reducing maternal and neonatal mortality, the World Health Organization (WHO) has endorsed birth preparedness and complication readiness (BPCR) as a core component of focused antenatal care programs<sup>19</sup>.

Globally, WHO's maternal and neonatal care standards recommend that every pregnant woman should develop a written plan outlining arrangements for delivery and management of potential complications during or immediately after birth<sup>19</sup>. This plan should be reviewed regularly with a skilled birth attendant during antenatal visits, and particularly no later than one month before the expected date of delivery<sup>19</sup>. Consequently, many African nations have adopted BPCR interventions with varying degrees of implementation<sup>23</sup>. The BPCR matrix highlights the responsibilities of expectant mothers, their partners, families, healthcare providers, and community members throughout pregnancy, childbirth, and the postpartum period<sup>19</sup>. Furthermore, the birth-preparedness package encourages active involvement and informed decision-making by pregnant women regarding their childbirth choices<sup>14</sup>. A well-developed birth plan assists women in making decisions that promote safe pregnancy outcomes<sup>23</sup>. When effectively implemented, birth preparedness and complication readiness strategies can significantly contribute to improved maternal and neonatal health outcomes<sup>23</sup>.

Although there is an increasing body of research on maternal health in Nigeria, there remains a scarcity of studies that focus specifically on primigravida women and their preparedness for childbirth and complications. Most available studies group all

pregnant women together, failing to account for the specific needs, behaviors, and barriers encountered by those experiencing pregnancy for the first time. Therefore, this study tends to seek knowledge about factors influencing practice of birth preparedness and complications readiness among primigravida women attending Adeoyo Maternity Hospital, Ibadan, Oyo State, Nigeria

## **1.2 Statement of the Problem**

Our healthcare facility is increasingly managing referrals from Adeoyo Maternity Teaching Hospital involving primigravid women presenting with pregnancy or childbirth complications. Alarming, many of these cases result in preventable maternal and neonatal morbidity or mortality. A critical underlying issue is the lack of adequate birth preparedness and complication readiness (BPCR) among these first-time mothers to be. Despite the well-established importance of BPCR in promoting timely care-seeking and informed decision-making, many primigravid women remain unaware of key danger signs, fail to make essential birth plans, and often lack the support needed to respond effectively to emergencies. These gaps contribute to delays in accessing skilled care, with serious consequences for both mother and baby thus increasing maternal mortality rate.

In Nigeria, the situation is further complicated by the country's weak healthcare system, lack of skilled birth attendants, and limited access to emergency obstetric care. These challenges underscore the need for studies that investigate BPCR practices among primigravidae and identify factors that influence these practices. Given the burden of maternal mortality and the preventable nature of many maternal deaths, it is imperative to investigate why BPCR remains low among primigravid women, even in settings where antenatal services are accessible. Without targeted interventions based

on a deeper understanding of the behavioral, cultural, and systemic factors influencing BPCR in this group, efforts to improve maternal outcomes may continue to fall short. This study therefore investigated these influencing factors among primigravida women attending Adeoyo Maternity Teaching Hospital which is densely populated and have high influx of pregnant women attending the antenatal Clinic.

### **1.3 Aim and Objectives of the Study**

This study aimed to assess factors influencing the practice of birth preparedness and Complications readiness among Primigravidae attending Adeoyo Maternity Teaching Hospital Ibadan, Oyo State. The objectives were to:

- i. assess the level of knowledge of birth preparedness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State.
- ii. ascertain the knowledge of danger signs in pregnancy among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State.
- iii. assess the practice of birth preparedness among primigravidae attending Adeoyo Maternity Hospital, Ibadan, Oyo State.
- iv. ascertain the complications readiness among primigravidae attending Adeoyo Maternity Hospital, Ibadan, Oyo State.
- v. Identify the factors influencing practice of birth preparedness and Complication Readiness among Primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State

### **1.4 Research Questions**

- i. What is the level of knowledge of Birth Preparedness and Complication Readiness among Primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State?
- ii. What is the knowledge of primigravidae attending Adeoyo Maternity

Teaching Hospital, Ibadan Oyo State about danger signs?

- iii. What is the level of birth preparedness practice among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State?
- iv. What is the level of complications readiness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State?

### **1.5 Hypotheses**

H<sub>01</sub>: There is no significant association between knowledge and practice of birth preparedness and complication readiness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State.

H<sub>02</sub>: There is no association between sociodemographic variables (age, educational level, and religion) and knowledge of birth Preparedness among Primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State.

H<sub>03</sub>: There is no significant association between availability of social support and the level of birth preparedness and complication readiness among primigravidae.

H<sub>04</sub>: There is no significant relationship between the factors influencing the practice of Birth preparedness and complications readiness among primigravid women attending Adeoyo Maternity Teaching Hospital, Oyo State

### **1.6 Significance of the Study**

The findings of this study may help identify existing gaps in antenatal education, cultural or socio-economic barriers, and institutional limitations that may hinder effective BPCR. This research may reduce delays in seeking, reaching and receiving Care thus decreasing maternal and neonatal morbidity and mortality .The study findings could help the primigravid women to become more aware of the importance of adequately preparing for birth and recognising danger signs during pregnancy,

delivery, and the postpartum period. By participating in the study, respondents may gain knowledge that empowers them to take proactive steps towards safe delivery and to seek timely medical care when complications arise. This, in turn, can contribute to improved maternal and neonatal outcomes. Findings from the study could provide valuable insights to healthcare providers, especially nurses and midwives, about the current level of knowledge, attitudes, and practices of primigravidae regarding birth preparedness and complication readiness.

The findings of the study also highlighted the barriers and facilitators influencing these practices, enabling healthcare professionals to design more effective antenatal counseling, health education, and interventions tailored to the needs of first-time mothers. It also contributes to efforts aimed at reducing maternal and neonatal morbidity and mortality by identifying gaps in birth preparedness and complication readiness practices. The findings inform policymakers and public health practitioners in designing community-based programs, policies, and strategies to promote safe motherhood practices. This will ultimately support the achievement of national and global maternal and child health goals.

### **1.7 Scope of the Study**

This study focused on assessing the factors influencing the practice of Birth Preparedness and Complication Readiness (BPCR) among primigravid women attending antenatal care at Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State. The study was limited to first-time pregnant women (primigravidae) who are registered for antenatal services within the facility during the study period.

### **1.8 Operational Definition of Terms**

**Birth Preparedness:** This is the process by which a primigravida plans for normal birth and anticipates actions to take in case of Complications in Adeoyo Maternity

Teaching Hospital, Ibadan, Oyo State

**Complications Readiness:** This is the Process whereby primigravidae in Adeoyo Maternity Hospital, Ibadan, Oyo State, Ibadan Nigeria anticipate the actions needed in case of an emergency during birth.

**Factors :** This involves maternal age, utilization of antenatal care, parity, knowledge of BPCR, distance to health facility , information Education and Communication, cultural belief, social support, This refers to elements that have measurable effect on a primigravida practice of BPCR in Adeoyo Maternity Teaching Hospital, Ibadan, Oyo state Nigeria.

**Practice of Birth preparedness and complication readiness:** This is the actual implementation of BPCR among Primigravida in Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State, Nigeria

**Primigravida:** This is a woman who is pregnant for the first time attending Adeoyo Maternity Hospital, Ibadan Oyo State, Nigeria

### Endnotes

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## **Chapter Two**

### **Literature Review**

This chapter examines pertinent literature on BCPR, identifies key factors influencing its practice, and highlights gaps that necessitate further investigation within the context of first-time mothers in tertiary healthcare settings. It explores existing scholarly works, research findings and theoretical perspectives related to the major variables of the study. Empirical studies on the knowledge of primigravidae on BCPR, the theoretical review underpinning the study is also discussed. The chapter concludes with a summary of gaps in findings that the study aims to address.

#### **2.1 Conceptual Review**

##### **2.1.1 Overview of Child Birth Preparedness and Complications Readiness**

The arrival of a new baby is universally recognized as a joyful and momentous occasion. Childbirth is frequently seen as a source of pride and continuity for families and communities, and women are valued for their essential role as mothers in many societies. But for many women around the world, pregnancy and childbirth continue to be risky and unpredictable experiences<sup>1</sup>. The World Health Organization (WHO, 2024) estimates that pregnancy and childbirth-related complications claim the lives of 260,000 women annually. It is concerning to note that 99% of maternal deaths take place in low- and middle-income nations, with sub-Saharan Africa alone responsible for about 70% of these deaths (182,000 per year) .<sup>2</sup> Women living in resource-limited regions bear a disproportionately high lifetime risk of dying from maternal causes. The lifetime risk of maternal death represents the probability that a 15-year-old girl will eventually die due to maternal complications<sup>2</sup>.

Every pregnant woman faces the possibility of unexpected and potentially life-threatening complications that could result in severe injury or death for either the

mother or the baby<sup>3</sup>. Since pregnancy-related complications cannot always be predicted<sup>4</sup>, proactive strategies are essential to mitigate risks and ensure timely access to lifesaving interventions when needed. One of the most critical barriers to safe delivery is the absence of planning for childbirth and emergency response. It is commonly known that inadequate planning for the use of trained birth attendants during routine deliveries—and especially for handling complications—contributes to delays in getting the right obstetric care. As a result, Birth Preparedness and Complication Readiness became a comprehensive approach to facilitating prompt access to high-quality healthcare services for mothers and newborns. Understanding obstetric danger signs, determining the planned delivery location, choosing a qualified birth attendant, making arrangements for emergency transportation, and setting aside funds for delivery-related costs are the main tenets of BPCR. To enable quick reactions in an emergency, it is also advised to identify a potential blood donor and a decision-maker.

Since every pregnancy carries inherent risks, BPCR serves as a key safe motherhood strategy designed to ensure the timely use of skilled care and to reduce delays at the household, community, and health system levels<sup>7</sup>. Within the framework of skilled maternity care, birth preparedness involves identifying a qualified provider and making adequate arrangements for skilled attendance at birth. On the other hand, complication readiness emphasizes preparing for emergencies by organizing transportation, funds, blood donors, and designated decision-makers. Globally, BPCR is regarded as an essential pillar of safe motherhood programs aimed at minimizing delays in accessing care<sup>4</sup>. In low-resource settings—where illiteracy, poor infrastructure, and unreliable transport systems are prevalent—the implementation of BPCR principles can significantly reduce high rates of maternal and neonatal

morbidity and mortality<sup>7-8</sup>. Unfortunately, in many communities, cultural norms and low awareness hinder planning for childbirth. Families often wait until labor begins before taking any action, resulting in avoidable delays.

A large proportion of pregnant women and their families remain unaware of danger signs indicating complications. When such emergencies occur, the unprepared family often loses valuable time trying to recognize the problem, gather funds, arrange transportation, and locate an appropriate healthcare facility<sup>9-10</sup>. For certain complications, such as severe hemorrhage, every minute counts, while for others, longer delays may still worsen outcomes as time progresses<sup>11</sup>. In Nigeria, for example, only about 51% of births are attended by skilled healthcare personnel. This low coverage is directly linked to the persistently high maternal mortality ratio of approximately 512 deaths per 100,000 live births. Studies have shown that hemorrhage, hypertensive disorders, and uterine rupture remain leading causes of maternal deaths<sup>12</sup>. Despite the demonstrated potential of BPCR in reducing maternal and newborn mortality, its level of implementation remains poorly understood in many parts of sub-Saharan Africa.<sup>2,12</sup> Effective preparation for childbirth involves identifying healthcare facilities for delivery, ensuring transportation for emergencies, and making necessary arrangements to reach care promptly. In urban and peri-urban areas, women sometimes return to their rural homes for childbirth, making birth planning and complication readiness equally important across different geographic contexts<sup>4</sup>.

Many maternal health programs now integrate BPCR principles as part of broader safe motherhood strategies<sup>4</sup>. For example, the WHO Integrated Management of Pregnancy and Childbirth (IMPAC) manual titled *Pregnancy, Childbirth, Postpartum and Newborn Care: A Guide for Essential Practice* highlights key areas of antenatal counseling—such as identifying emergency referral facilities, planning transport, and

estimating costs<sup>4</sup>. It also emphasizes advising women who live far from healthcare centers to consider moving closer to a facility before labor begins. However, there remains a need for clearer guidelines on which women should be prioritized for relocation near delivery facilities and how to identify the most appropriate facility for emergency care<sup>4</sup>. Improving knowledge of birth preparedness, recognition of obstetric danger signs, and readiness to respond to complications are proven strategies to enhance the use of skilled care during childbirth and increase access to emergency obstetric services<sup>13</sup>.

According to Thaddeus and Maine's Three Delays Model, the three main obstacles that lead to maternal deaths are delaying the decision to seek medical attention, arriving at a medical facility, and receiving quality care once there<sup>14</sup>. The Maternal and Neonatal Health (MNH) Program responded by creating the BPCR Matrix, a framework intended to address these delays at several levels during pregnancy, delivery, and the postpartum phase, including the expectant mother, her family, the community, healthcare providers, facilities, and policymakers. The BPCR concept encompasses several important components: recognizing danger signs, identifying a skilled birth attendant and place of delivery, arranging transportation, identifying a blood donor, and setting aside funds for emergencies<sup>15</sup>. In this context, birth preparedness refers to readiness for normal delivery, including selecting a skilled provider, gathering essential delivery materials (such as a clean birth kit), and understanding where and how to seek help when danger signs appear<sup>4</sup>. It also involves preparing financial and logistical arrangements for emergency transport and care, and identifying potential blood donors in advance.

To ensure prompt and efficient care for mothers and newborns, the BPCR Matrix further outlines the roles of different stakeholders, including communities, families,

healthcare managers, policymakers, providers, and women <sup>7</sup>. It describes specific responsibilities and collaborative actions each group can undertake to build an enabling environment that supports safe childbirth. This matrix serves as both a conceptual and operational tool for implementing and reinforcing BPCR at all levels. Advocacy organizations can use it to mobilize stakeholders, raise awareness of their shared responsibilities, and identify strategies for overcoming barriers to care<sup>9</sup>. Similarly, program planners can apply the framework to allocate human and financial resources efficiently, while healthcare providers can use it as a reference to strengthen facility preparedness and clarify their professional roles throughout pregnancy, delivery, and the postpartum period<sup>4</sup>.

The persistently high maternal mortality ratio in many countries, including Nigeria, results from complex and interrelated sociocultural factors that contribute to delays in care-seeking and treatment. The three-delay model emphasizes challenges at multiple levels—from recognizing complications to accessing and receiving quality care<sup>14</sup>. In Nigeria, community-level interventions have focused on empowering mothers and traditional birth attendants to recognize and address life-threatening maternal and neonatal problems<sup>16</sup>. Community mobilization initiatives have also aimed to reduce transport delays to emergency obstetric care facilities and to promote family planning. Studies show that knowledge retention regarding maternal bleeding and neonatal infections improves significantly when pictorial tools and visual aids are used to reinforce key messages<sup>17</sup>.

In India, community health workers implemented home-based prenatal visits to provide a preventive package of essential newborn care, including birth preparedness, clean delivery, thermal care (such as skin-to-skin contact and breastfeeding promotion), and danger sign awareness. These interventions significantly improved mothers'

knowledge, promoted safer practices, and enhanced care-seeking behaviors during obstetric emergencies<sup>18</sup>. Evidence indicates that discussions on birth preparedness should not be limited to pregnant women alone but should also involve families and entire communities.

The goal is to foster collective education, motivation, and mobilization. Community-based participatory approaches have proven especially effective in promoting maternal health. For example, a project conducted in Kampong Chang, Cambodia, demonstrated that engaging communities in birth preparedness planning was both feasible and cost-effective, resulting in a 281% increase in hospital referrals<sup>19</sup>.

Another noteworthy intervention is the Home-Based Life Saving Skills (HBLSS) program developed by the American College of Nurse-Midwives. This initiative aims to expand access to basic lifesaving measures within homes and communities by minimizing delays in reaching referral facilities where complications can be managed<sup>20</sup>. The HBLSS model acknowledges the social dynamics surrounding childbirth, emphasizing teamwork among the pregnant woman, her family caregivers, and home birth attendants. It has been implemented successfully in several countries, including India, Ethiopia, Haiti, and Liberia. In northern Kenya, evaluations of the program showed that interactive training techniques such as role-playing and demonstration significantly improved participants' ability to recognize and respond to maternal bleeding and newborn infections, although they did not directly increase emergency care-seeking<sup>20</sup>. Similarly, an assessment of HBLSS implementation in Ethiopia's Oromia region revealed that learning outcomes were retained over time, with 54% of women exposed to training after three years. However, the lack of emergency transport continued to hinder timely referrals to appropriate facilities<sup>21</sup>.

### **2.1.2 Origin of Birth Preparedness and Complication Readiness**

The concepts of birth preparedness and complication readiness (BPCR) arose from the recognition of the high rates of maternal and neonatal mortality worldwide, particularly in low-resource settings<sup>5</sup>. Experience and research have demonstrated that delays in receiving the proper care are a major contributing factor in many maternal deaths. The three-delays model, put forth by Thaddeus and Maine in 1994, is frequently used to classify these delays: delays in choosing to seek care because of a lack of autonomy, cultural customs, or a lack of awareness of warning signs; delays in getting to the medical facility because of poor roads, distance, or lack of transportation; and delays in receiving quality care at the facility because of a lack of qualified personnel, medications, or equipment. Complications and Preparation for Birth In order to combat these delays, readiness was created as a tactic that promotes preparation and readiness for both routine and complex deliveries.

BPCR has been promoted as a key strategy to lower maternal and perinatal mortality by programs like the Safe Motherhood Initiative, which was started in 1987, the World Health Organization's (WHO) Making Pregnancy Safer strategy, and JHPIEGO's Maternal and Neonatal Health Program.

### **2.1.3 Overview of Antenatal Care**

Antenatal Care or prenatal care is a form of preventive care. This care is offered in the form of prenatal check-ups, and it consists of medical advice on how to live a healthy lifestyle, as well as information on topics like the physiological and biological changes that occur in a pregnant woman, and prenatal nutrition, which includes the use of prenatal vitamins, to protect against diseases and improve the health of both the mother and the unborn child <sup>22</sup>. Maternal mortality, stillbirths, congenital malformations, low birthweight, neonatal infections, and other preventable conditions have all decreased because of routine prenatal

care, which includes screening and diagnosis.

Antenatal care is crucial as it was found that in 2015, a total of 303,000 women lost their lives as a result of conditions associated with pregnancy or delivery<sup>23</sup>. These deaths could have been easily prevented through ANC. This is because the majority of these deaths were as a result of severe haemorrhage, sepsis or infections, eclampsia, obstructed labour, and the after-effects of botched abortions. The majority of these factors are either avoidable or may be effectively addressed through various treatments during ANC<sup>23</sup>. Access to and the ability to take advantage of ANC are two major factors that have a role in reducing the risk of maternal death. Women who do not receive prenatal care have a mortality risk that is three to four times higher than the mortality risk of women who do receive prenatal care due to problems related to pregnancy or delivery<sup>23</sup>. The importance of ANC cannot be overemphasized, and the involvement of male partners can help alleviate the deficiencies.

#### Traditional Antenatal

care was established in the early 20th century, however, there is no proof that it is the most effective method<sup>24</sup>. The World Health Organization suggests that all pregnant women get at least eight prenatal visits, during which any problems can be identified and treated<sup>25</sup>. Many women do not have the recommended eight prenatal visits, which are important for the health of the mother and the baby. There is scant data to back both the frequency with which pregnant women receive prenatal care and the quality of that treatment<sup>26</sup>. Some professionals believe that women who are pregnant but are not at high risk should have fewer prenatal checks. According to the data, infants born to moms who did not visit the hospital often had a much higher risk of being admitted to neonatal critical care and significantly longer median lengths of stay (though this

could be down to chance results).

Declining Antenatal care programmes are associated with an increase in perinatal mortality in resource-

poor settings where visit rates are already low<sup>27</sup>. Thus, the reduced

visits paradigm appears dubious even in low-income countries, where pregnant women

already attend fewer examinations<sup>28</sup>. Not only is it

recommended that expectant mothers get prenatal care as early in their pregnancies as possible,

but there is also a more adaptable pathway allowing extra visits from the time a

pregnant woman plans for prenatal care, which may allow for more focus on those

who show up late<sup>28</sup>. Additionally, women who did not access the recommended

number of prenatal visits reported lower levels of satisfaction with their care

<sup>29</sup>. Antenatal care with the current technological improvement in healthcare birth

greatly reduce maternal complications and deaths.

The decrease in the number of fatalities and complications that occur among pregnant

women can be attributed, in large part, to improved aseptic procedures,

improved hydration management, increased access to blood transfusions, and enhanced

prenatal care. With Antenatal care, a mother before delivery is aware of the need to

have blood on standby and other required needs. Pregnant women are well-prepared

and educated through Antenatal care<sup>30</sup>. In part, to help increase ANC's impact, there

is the need for public health interventions, especially in rural communities. Without

that, improved technology to save the lives of women and children will be limited.

Poor attendance to ANC is an issue that should be addressed from a public health perspective,

which involves learning as much as possible about the scale of the problem,

pinpointing its root causes, and taking action to mitigate those causes which will go a

long way to increase Antenatal attendance and reduce birth complications, as well as

maternal and child deaths <sup>31</sup>

### **2.1.3.1 Access to Maternal Care and the Three Delays Model**

Generally, a woman's participation in ANC is associated with a host of challenges.

Underlined that women's access to care is affected by three critical factors that are highlighted by the three delay models<sup>32</sup>. The delays model emphasizes that maternal health care is hindered by delays in seeking care, delay in reaching care, and delay in receiving adequate and appropriate care<sup>32</sup>. The choices that pregnant women and/or other persons who make decisions contribute to the delays that occur when they try to get medical attention. A spouse and other family members can participate in decision-making. Lack of understanding about when it is appropriate to seek medical attention, difficulty to afford medical attention, and the requirement that women obtain permission from family members are all examples of factors that might contribute to delays in seeking medical attention<sup>32</sup>. This emphasizes the extent to which male involvement in ANC is much needed. It mitigates the delay in seeking medical attention.

Delays in reaching care include causes such as constraints in transportation to a medical facility, lack of proper medical facilities in the region, and loss of faith in medicine <sup>32</sup>.

Delays in getting adequate and appropriate treatment may occur due to insufficiently skilled caregivers, a lack of necessary supplies, a lack of knowledge of an emergency, or a lack of comprehension of the severity of the situation<sup>32</sup>. The three-delay model demonstrates that maternal mortality can be caused by a wide variety of interrelated causes, including those that are social and cultural<sup>32</sup>.

### **2.1.3.2 Women's Access to Antenatal Care**

Problems with "access" might arise for a variety of reasons, such as a lack of partner

support, a lack of financial resources, time to travel to a clinic, reliable means of transportation, and familiarity with medical terminology. Pregnant women need to be able to get to their prenatal (pre-delivery) care appointments to have a healthy baby. These prenatal checkups provide a chance to educate the expectant mothers on the health benefits of giving birth at regular intervals and on how to manage their current pregnancies<sup>33</sup>. Researchers have shown a correlation between giving birth in a hospital or other facilities supervised by a medical professional and improved maternal and infant outcomes.

Sub-Saharan Africa and South Asia, the two regions worst hit by maternal mortality, also had the lowest rates of skilled attendance at delivery, at 45% and 41%, respectively<sup>2</sup>. Services including emergency caesarean sections, blood transfusions, antibiotics for infections, and assisted vaginal birth with forceps or vacuum are all part of emergency obstetric care, which is essential in reducing maternal mortality. Medical treatment is not easily accessible due to a combination of physical and financial obstacles. Seven in ten women of childbearing age lack health insurance. As a result, women are less likely to be able to receive the prenatal care they need, which increases their risk of dying during childbirth<sup>34</sup>. A pregnant woman is more likely to get medical treatment when she needs it if the public has a better understanding of pregnancy and the potential risks and issues that might arise during pregnancy thanks to health education initiatives.

There is evidence that suggests that women with more education are more likely to utilize family planning and contraceptive services, as well as seek prenatal care. A pregnant woman must be aware of the warning signs of difficulties so that she may seek medical attention promptly. A pregnant woman will be more likely to seek treatment if she feels she has a good relationship with the healthcare

system. Increased adherence to prescribed therapies may also benefit from improved patient-provider communication and the providers' cultural competency<sup>33,34,35</sup>. The implementation of specialized education for mothers is also a crucial preventative step. Healthcare providers should simplify their explanations to help prevent misunderstandings between doctors and patients, particularly those from lower socioeconomic backgrounds. Improving healthcare provider training can also play a role in reducing the number of maternal deaths.

According to a study, medical students and residents often held inaccurate and even "fantastical" biological assumptions regarding racial differences in patients. As reported medical professionals have a hard time empathizing with patients whose experiences are different from their own<sup>36</sup>.

#### **2.1.3.3 The Three Delays Model: Understanding the Factors Contributing to Maternal and Neonatal Mortality**

Maternal and neonatal mortality persist as significant global public health issues, particularly in low and middle-income countries (LMICs). According to the World Health Organization (WHO), pregnancy and childbirth-related causes claimed the lives of approximately 287,000 women in 2020. Over 95% of these fatalities occurred in low-income nations<sup>99</sup>. Delays in receiving timely and appropriate obstetric care continue to be a major contributor to poor maternal and neonatal outcomes, despite efforts worldwide to improve maternal health. A useful framework for understanding these factors is offered by the Three Delays Model<sup>100</sup>. According to the model, there are three different kinds of delays that can cause mothers and babies to become ill or die: delays in seeking care, delays in getting care, and delays in receiving care. Every stage denotes a point.

#### **a.) Delay in Seeking Care**

The first delay happens when women or their families do not realise they need medical care or simply do not want to get it. This hesitation is often caused by not knowing enough about pregnancy complications, cultural norms, the perception of low-quality care, or money problems. Recent research continues to highlight these concerns. A 2021 cohort study in Egypt identified that the predominant delay in maternal deaths was the failure to obtain timely care, frequently attributed to inadequate awareness of warning signs and economic challenges<sup>101</sup>. A qualitative study conducted in Nigeria in 2025 revealed that numerous patients postponed seeking medical attention due to misconceptions regarding symptoms, dependence on traditional healers, and a lack of trust in healthcare facilities<sup>102</sup>.

#### **b.) Delay in Receiving Care**

Travelling to medical facilities presents difficulties, which accounts for the second delay. Geographical distance, a lack of transportation, bad road conditions, and obstacles to emergency referral are some of the factors that contribute to this phase. For example, a 2023 study evaluating maternal health services in Kenya's Kilifi and Kisii counties found that inadequate infrastructure and a lack of transportation options significantly hampered access to medical facilities, especially in times of emergency<sup>103</sup>. Distance is still a major obstacle; when transport is unavailable or prohibitively expensive, women in rural or isolated areas are at much higher risk of perinatal death<sup>104</sup>.

#### **c.) Delay in Reaching Care**

The third delay happens when a patient shows up at a medical facility but receives subpar or delayed care. Lack of medical supplies, inadequate triage systems, inadequate referral procedures, and a lack of qualified staff are common causes.

According to a 2023 facility assessment conducted in Kenya, many hospitals lacked the necessary equipment to manage obstetric emergencies, which led to preventable maternal and newborn deaths<sup>103</sup>. According to a related 2024 study conducted in Kakamega County, poor outcomes were largely caused by clinical decision-making delays and inadequate emergency preparedness, even after women arrived at facilities<sup>104</sup>.

Additionally, a study contended that as facility births increase in frequency, the emphasis should move from simply lowering the first two delays to ensuring continuity and quality of care throughout the maternal health continuum. Policymakers, medical professionals, and communities can create more successful plans to stop maternal and newborn deaths by having a better understanding of the Three Delays Model. The first delay can be addressed with interventions that focus on lowering financial barriers, enhancing community engagement, and raising awareness of obstetric danger signs. The second delay can be reduced by enhancing referral systems, ambulance services, and transportation infrastructure. Lastly, to overcome the third delay, investments in emergency obstetric care readiness, supply chains, and health workforce capacity are essential. In essence, new research highlights that efforts must go beyond simply reaching facilities to guarantee prompt, courteous, and high-quality care once women arrive, even though the Three Delays Model is still a useful tool for identifying obstacles to maternal and neonatal survival. Achieving the Sustainable Development Goal of bringing global maternal mortality down to less than 70 per 100,000 live births by 2030 requires a comprehensive approach that addresses all three stages of delay<sup>104</sup>.

#### **2.1.4. Concept of Birth Preparedness**

Birth preparedness refers to the proactive planning and actions taken by a pregnant woman, her family, and her community to ensure a safe delivery and to avoid delays

in accessing skilled care when needed<sup>1</sup>. It is based on the understanding that pregnancy and childbirth, though natural, carry risks of complications that can threaten the lives of both mother and baby if not properly managed<sup>2</sup>. Birth preparedness involves identifying a skilled health professional to assist during childbirth, choosing the place of delivery (preferably a health facility), and making arrangements to overcome any barriers to accessing care, such as transportation, financial constraints, and social obligations<sup>1</sup>. A pregnant woman and her family may save money in advance to cover hospital costs, arrange for a driver who can transport her to the hospital at any time, and prepare necessary items such as clothing, sanitary materials, and baby supplies before the due date. These actions minimize stress and delays when labor begins, ensuring the woman can access timely and quality care<sup>2</sup>. Birth preparedness recognizes that the responsibility for safe motherhood lies not only with the woman but also with her family, community, and health system, all of which must work together to create an enabling environment for safe delivery<sup>1,2</sup>.

#### **2.1.5 Concept of Complication Readiness**

Complication readiness complements birth preparedness by ensuring that the woman, her family, community, and health system are equipped to deal promptly and effectively with unexpected complications<sup>3</sup>. While birth preparedness focuses on planning for a normal delivery, complication readiness ensures that everyone involved can recognize danger signs and act quickly if complications arise during pregnancy, labor, delivery, or postpartum<sup>3</sup>. A woman may develop heavy bleeding (postpartum hemorrhage) or seizures (eclampsia) during or after childbirth both life-threatening emergencies<sup>3,4</sup>. Complication readiness involves knowing the warning signs of such conditions, having a plan to get to an appropriate facility immediately, and ensuring that resources like compatible blood donors and emergency funds are

already arranged.

It also includes ensuring that the health facility itself is ready with trained staff, essential medicines, and functional equipment to handle emergencies without delay<sup>3,4</sup>. Thus, complication readiness involves both individual and collective preparedness to reduce the risk of maternal and neonatal deaths from preventable causes<sup>3,5</sup>.

#### **2.1.6 Components of Birth Preparedness and Complication Readiness (BPCR)**

Birth Preparedness and Complication Readiness (BPCR) is a comprehensive approach promoted by WHO and other maternal health organizations to improve maternal and newborn outcomes<sup>99</sup>. It encourages timely access to skilled maternal and neonatal care, especially during emergencies. The components of BPCR includes identification of a Skilled Birth Attendant where pregnant women should plan to deliver with the help of a skilled birth attendant (doctor, midwife, or nurse) trained in managing normal deliveries and recognizing complications, selection of a Preferred Place of Birth in which women and their families should choose a health facility that provides skilled care and has emergency obstetric services available, arrangement for reliable transportation to reach the health facility, especially in case of labor or an emergency<sup>101</sup>. Households should also set aside money for delivery expenses, transportation, and potential complications' treatment. Finding a Blood Donor: Since hemorrhage is one of the main causes of maternal death, it's imperative to find a potential blood donor beforehand.

**Knowledge of Warning Signs** It is important to inform expectant mothers, families, and communities about the warning signs of pregnancy, labor, the postpartum period, and the newborn. These include fever and weakness, severe headaches with blurred vision, severe vaginal bleeding convulsions, and fast or difficult breathing in the

newborn.

Birth Companion and family Support, that is, designating a trusted person to accompany the woman during labor and assist with care and arrangement for Household Support which includes planning for who will take care of the household and other children during the mother's absence<sup>97</sup>.

In order to minimise delays in deciding to seek care, getting care, and receiving quality care, the BPCR framework is intended to assist expectant mothers, their families, communities, and health systems in making plans for childbirth and any complications<sup>102</sup>. Its essential elements are still being supported and improved by recent systematic reviews and studies.

#### **a.) Locating a Qualified Birth Attendant and/or Delivery Facility**

One of the fundamental elements is that the woman, her family, or the community decides which facility (ideally one with emergency obstetric care capacity) will be used for the delivery and/or who will perform the delivery (a trained birth attendant). Research indicates that anticipating and preparing for this enhances preparedness and lowers the chance of issues. For instance, finding a skilled attendant was one of the more frequently reported elements in an Indian meta-analysis<sup>104</sup>. Making the plan realistic involves more than just identification; it also involves considering factors like cost, trust, transportation, and facility access. According to some evidence (from Ghana, for example), without structured counselling and checklists, planning isn't always complete even when facility contact is present <sup>99</sup>.

#### **b.) Selecting/Organizing the Delivery Location (and Backup)**

Choosing the place of birth (home vs. facility) and making plans for potential transfers are part of this component, which is complementary to the previous one. This implies that families are aware of the delivery location and have backup plans in

case of an emergency. According to a recent systematic review conducted in Africa, many women relied on ad hoc decision-making and lacked comprehensive planning for the place of delivery<sup>104</sup>. As a result, good BPCR practice entails: if at all possible, visiting the facility in advance; figuring out how to get there; and making sure the location is suitable for any potential complications (i.e., has blood, can refer, etc.)<sup>105</sup>.

#### **c.) Planning Transportation Ahead of Time**

Arriving at a facility late is one of the main causes of delays in maternal care. The BPCR literature regularly mentions transport planning in advance. The most frequently reported component in the Indian meta-analysis was the identification of transportation in advance<sup>97</sup>. Knowing who will drive (or what vehicle), the route, the estimated time, a backup plan in case the primary means are unavailable (due to inclement weather or nighttime), and having funds or arrangements for an emergency transfer are all part of transport planning. The "delay in reaching care" element is frequently problematic in the absence of such a plan.

#### **d.) Saving Money / Arranging Funds for Delivery and Complications**

Because financial constraints often interrupt or delay seeking or receiving care, BPCR emphasises making funds available ahead of time for the costs of delivery (facility fees, supplies, transport, etc.) and possible complications. The Indian meta-analysis found "saving money" was the second-most commonly reported component. Saving money may also include setting aside funds for blood transfusion, emergency surgery, postpartum care, neonatal care, etc. For low-income settings, this planning may mean mobilising family/community resources in advance<sup>97</sup>.

#### **e.) Locating a Blood Donor or Making Blood Service Arrangements**

One of the main reasons why mothers die is still haemorrhage. Getting compatible

blood causes delays in many situations. Thus, a BPCR component is to find a potential blood donor or donors in advance or make sure blood services are available or referral pathways are established. For instance, donor identification in facility contexts was only about 50% in the Ghana<sup>99</sup>. As a result, the plan may cover things like who in the family or community might be a potential donor, how to get in touch with them, what arrangements the facility has, and what blood services are available.

**f.)Awareness of Risk Signs (Pregnancy, Labour, Delivery, Postpartum, and Newborn)** Pregnant women, their families, and the community should be aware of the main warning signs, such as bleeding, convulsions, prolonged labour, retained placenta, and newborn breathing difficulties. Knowledge alone is not enough, but it is a crucial component. The likelihood of identifying complications and initiating earlier care-seeking is decreased when such knowledge is lacking. In the "know-do gap" study<sup>102</sup> conducted in Nigeria in 2025, researchers discovered a weak link between pregnant women's knowledge and practice.

**g.) Identifying Decision-Maker(s) and Birth Companion**

In many situations, the pregnant woman may not make the decision alone; family members or the community may make the decision. BPCR promotes determining in advance who will make decisions and who will accompany/assist the woman during labour and delivery (the birth companion). This component is crucial to minimising delays in the "deciding to seek care" phase, and while it isn't as often highlighted in some more recent reviews, it is implicitly incorporated into planning for decision-maker and support. For instance, the Nigeria "know-do gap"<sup>102</sup> article included a plan for accompaniment/companion as part of planning.

**2.1.7. Reasons for Birth Preparedness and Complication Readiness**

The importance of Birth preparedness particularly among the primigravida lies in its

ability to prevent the common causes of maternal and neonatal deaths by reducing delays and ensuring preparedness. BPCR helps in reducing maternal and neonatal mortality and morbidity by enabling timely access to skilled care and emergency services, thereby reducing the risk of deaths from preventable causes such as hemorrhage, sepsis, obstructed labor, and eclampsia. It also minimizes the impact of emergencies. Emergencies mostly occur without warning and being prepared means families can respond quickly, avoiding harmful delays.

Furthermore, Birth preparedness and complication readiness encourages skilled birth attendants. It promotes delivery by skilled attendants in health facilities, which is safer than home deliveries without trained personnel. BCPR also helps to empower women and families. It gives women and their families the knowledge and resources to make informed decisions about care during pregnancy and childbirth. Additionally, BPCR encourages men and communities to take responsibility and actively participate in maternal and newborn health. Lastly, BCPR enhances efficiency of health systems. When families and communities are prepared, the burden on health facilities during emergencies is reduced, and care becomes more efficient and effective. Birth Preparedness and Complication Readiness is a cost-effective strategy that contributes significantly to achieving global health goals like the Sustainable Development Goal 3, which aims to reduce maternal mortality <sup>8,13,14</sup>

### **2.1.8 Birth Preparedness and Complication Readiness Globally**

Evidence from multiple regions indicates that BPCR practice is generally low, especially in low- and middle-income countries (LMICs) where the burden of maternal mortality is highest. A systematic review focusing on male partners in LMICs found that BPCR practice ranged widely from as low as 6.6% to as high as 86%, with a pooled average of just 42.4% (95% CI: 33.0–51.8%) <sup>14</sup>. This variability

reflects differences in healthcare infrastructure, cultural norms, gender roles, and health literacy levels across countries. In South Asia and parts of Sub-Saharan Africa, the situation is particularly concerning. Studies have reported that only 7.3% of women in Nepal, 7.6% in Tanzania, and 12% in Bangladesh were adequately prepared for birth and potential complications. Similar findings have emerged from rural Sindh in Pakistan, where BPCR levels stood at 21.2%<sup>15</sup>.

Meta-analyses indicate that approximately one-third (33%) of pregnant women in Ethiopia are adequately prepared, compared to just 11.4% in Kenya. Breakdowns of the BPCR components within Ethiopia show additional gaps: 54.85% had chosen a birth location, 38.74% had found a qualified birth attendant, 26.33% had identified important warning signs, 51.35% said they had saved money, and only 8.18% had found a possible blood donor<sup>16</sup>. According to a systematic review, 49% of BPCRs were used overall in India, with substantial variation in component-specific uptake: Just 10.1% of women had found a blood donor, 59.4% had chosen a birth location, 46% had planned transportation, 34.9% knew important obstetric danger signs, and 46% had saved money<sup>17</sup>. These figures highlight that while certain aspects of preparedness, such as saving money and choosing a birth facility, may be relatively better addressed, comprehensive BPCR which requires fulfilling most or all components is far less common.

Urban settings often show better BPCR outcomes compared to rural areas. For example, in one study conducted in an urban tertiary hospital, 78.4% of adolescent pregnant women exhibited good BPCR practices, a proportion markedly higher than in rural Tanzania (58.2%), Southern Ethiopia (17%), and India (35.9%)<sup>18</sup>. This disparity underscores the influence of access to healthcare facilities, health education, and socio-economic resources on BPCR uptake. Despite decades of advocacy, many

developing countries continue to record BPCR levels below 30%, reflecting systemic challenges such as inadequate antenatal counseling, cultural barriers, gender inequality, and poor male partner involvement. In Ethiopia, reported BPCR rates vary from 16.5% to 57.7%, with a pooled estimate of about 25%<sup>19</sup>.

Given that the World Health Organization (WHO) and international maternal health frameworks acknowledge BPCR as an affordable, community-based approach to address the three delays in maternal mortality: the delay in choosing to seek care, the delay in getting to a medical facility, and the delay in receiving quality upon arrival, the consistently low levels of BPCR in high-burden nations are especially worrisome.

### **2.1.9 Birth Preparedness and Complication Readiness Issues in Nigeria**

The Maternal Mortality Ratio (MMR) in Sub-Saharan Africa (SSA) was 546 fatalities per 100,000 live births, the highest in the world<sup>2</sup>. A report states that Southern and Eastern Africa have the highest MMR in the developing world<sup>59</sup>. Over the last several decades, there has been a marked disparity in the decrease of maternal and infant mortality among rising countries due to disparities in the distribution of human resources, infrastructure facilities, essential medications, and the quality of medical care. Poor treatment quality, a lack of care, and cultural attitudes or misunderstanding about the requirement of obstetric care have all been implicated in previous studies as primary drivers of these differences. Many women, especially those in more remote parts of underdeveloped nations, avoid giving birth in hospitals or other medical facilities due to the inadequate quality of care they get there. Therefore, they significantly raise their own perinatal mortality risk<sup>60</sup>. Between 1990 and 2015, the MMR in Nigeria decreased from 1356 to 814 per 100,000 live births, while the Infant mortality rate (IMR) decreased from 126 to

74 per 1,000 live births<sup>2</sup>.

A significant factor in Nigeria's decrease in MMR and IMR rates was the implementation of numerous policies, which increased the number of births that occurred in medical settings and the number of women who received postnatal care <sup>61</sup>. In Nigeria, maternal mortality remains alarmingly high, with a maternal mortality ratio of approximately 512 per 100,000 live births<sup>62</sup>. This troubling statistic is closely linked to inadequate birth preparedness and the failure to anticipate or respond effectively to obstetric emergencies. Despite national policies supporting maternal and child health, many Nigerian women, particularly those in rural and underserved communities, continue to face significant barriers to adequate BPCR. Studies indicate that only a small proportion of pregnant women in Nigeria make adequate preparations for childbirth and potential complications. Factors contributing to poor BPCR include low levels of awareness and knowledge of obstetric danger signs, inadequate financial planning, limited access to skilled birth attendants, and sociocultural norms that influence health-seeking behavior<sup>5,6,7</sup>.

The World Health Organization recommends at least eight antenatal visits to allow timely identification and management of complications, yet coverage of these visits is suboptimal in Nigeria<sup>62</sup>. According to the 2018 Nigeria Demographic and Health Survey, only 51% of births were attended by skilled health professionals, underscoring the inadequate linkage between antenatal care and delivery preparedness. Poor male involvement, decision-making power dynamics within households, and prevailing traditional beliefs further inhibit women's ability to seek timely and appropriate care<sup>63</sup>. The Three Delays Model delays in deciding to seek care, reaching healthcare facilities, and receiving adequate care continues to be a useful framework for understanding maternal health challenges in Nigeria<sup>14</sup>. Geographic

inaccessibility, high cost of services, and perceived poor quality of care in health facilities contribute to these delays<sup>14</sup>. Although community-based interventions and health education programs have shown some success in improving BPCR indicators, their coverage and sustainability remain limited.

Training of healthcare providers, integration of BPCR counseling into routine antenatal services, and community engagement through women's groups and male-focused educational initiatives have been identified as effective strategies. However, implementation is inconsistent across regions, and systemic health system weaknesses, including stock-outs of essential supplies and staff shortages, continue to undermine progress.

To address these issues, a coordinated, multisectoral approach is necessary, involving not only the health sector but also education, transport, and local governance. Without intentional efforts to scale up proven interventions, strengthen health systems, and empower women and families with knowledge and resources, Nigeria may continue to struggle with preventable maternal deaths linked to poor birth preparedness and complication readiness.

#### **2.1.10 Factors Which Influence Utilisation of the Birth Preparedness and Complication Readiness**

##### **2.1.10.1 Maternal Age**

Maternal age is a key factor in the practice of BPCR. In a study from Ethiopia, it was found that younger women ages 18 – 19 and 20 – 34 were less likely to engage in birth preparedness and complication readiness compared to older women 35 – 49 years due to low of knowledge (15.2%) of the components of BPCR. Home delivery among young mothers was 69.5%. In a study in Nigeria Markurdi, findings revealed that

teenagers booked late for antenatal care ( average 23 weeks ) 62.5% , antenatal care attendance 21.2% ,while elderly primigravidae booked earlier ( 19 weeks ) 97.1 % , also attended antenatal clinic regularly 72.1%. Also, a study conducted in Enugu revealed a significant positive relationship between advanced maternal age and BPCR knowledge. Older primigravidae demonstrated better understanding than the younger ones. Contrasting finding in Osogbo Metropolis indicated that younger women likely with higher educational attainment and awareness of danger signs were significantly more prepared for birth.

#### **2.1.10.2 Utilisation of Antenatal Care**

Antenatal care plays a vital role in ensuring adequate birth preparedness and complication readiness, as it provides a key opportunity for healthcare professionals to deliver essential information, education, and counseling on safe motherhood. Women who fail to attend antenatal care are often disadvantaged, as they may lack the knowledge needed to recognize danger signs or respond promptly to obstetric emergencies if complications occur.

A study on birth preparedness and emergency readiness among antenatal clinic attendees in Ile-Ife, Osun State, Nigeria<sup>37</sup> assessed the extent to which expectant mothers were adequately prepared for delivery and emergencies. Pregnant women at 36 weeks of gestation who were attending selected antenatal clinics were recruited after giving verbal informed consent<sup>37</sup>. Data were gathered using a structured, purposive questionnaire. Findings showed that 284 (71%) of the respondents had registered for antenatal care by 20 weeks of gestation, while 350 (87.5%) had decided on their preferred place of delivery, although 32 (9.1%) intended to deliver either at home or in mission houses. A significant proportion (87.8%) had begun purchasing necessary items for childbirth and newborn care; 289 (71%) had identified a

companion to accompany them to the delivery site, and 259 (64.8%) were saving funds for delivery expenses.

However, in terms of complication readiness, knowledge of danger signs of severe maternal illness was low, as only 113 (28.3%) could mention four or more danger signs without prompting. In addition, 249 (62.3%) had made transportation arrangements, and just 45 (11.3%) had identified potential blood donors. Overall, approximately 61% of the women were adequately prepared for childbirth, while only 11.3% demonstrated readiness for emergency complications. The study emphasized the need to place stronger focus on emergency preparedness<sup>37</sup>.

Similarly, another study investigating antenatal care utilization and birth preparedness found that awareness of danger signs during pregnancy and delivery was poor. Although 64% of respondents had attended antenatal care, 45% of deliveries still occurred at home. Among women who needed emergency services during pregnancy, labor, or postpartum, only 39% sought care at a health facility. Alarming, 83% of these cases reported lack of transportation arrangements<sup>38</sup>. Furthermore, another study revealed that women who took at least one birth preparedness step were 45% more likely to receive skilled care during childbirth, suggesting that the greater the number of BPCR steps taken, the higher the likelihood of utilizing skilled services at delivery<sup>39</sup>.

#### **2.1.10.3 Parity Determines Utilization of Health Facilities**

In addition to antenatal care, parity also influences women's utilization of healthcare services for childbirth. Evidence suggests that multiparous women—those who have experienced childbirth before—tend to be less prepared for birth and less ready to handle complications compared to first-time mothers, particularly when they had no previous adverse experiences<sup>40</sup>.

A study carried out in northern Rwanda found that being pregnant for the first time and having attended prenatal care were important indicators of being well-prepared for delivery. Just 8.1% of the women in the sample had identified a medical facility for delivery or in the event of an obstetric emergency, and only 20.5% had identified trained birth attendants. Although 34.5% of families had saved money for deliveries and emergencies, transportation preparation was particularly inadequate (7.7%). Merely 2.3% of those surveyed had been able to locate possible blood donors. According to the study, only 8% of respondents intended to give birth in a medical facility, whereas 87.9% of respondents planned to do so at home. Just 17% of the pregnant women polled overall were sufficiently ready for delivery<sup>41</sup>.

#### **2.1.10.4 Knowledge of Birth Preparedness and Complications Readiness**

In Uganda, a community-based study evaluated women attending prenatal clinics' awareness of birth readiness and warning signs. According to the survey, 50% of participants were unemployed and 43.75% had only completed primary school. However, 71.25% and 70% of respondents, respectively, named trained birth attendants and medical facilities as essential BPCR elements. Vaginal bleeding (76.25%) and excessive vomiting (62.5%) were the most commonly reported pregnancy danger signs, while 12.5% of respondents were unable to name any warning signs. In a similar vein, only 15% had identified blood donors, while 76.25% had identified skilled birth delivery locations and 66.25% had identified skilled attendants. The results showed that while prenatal women had a moderate understanding of BPCR components, their actual application was lacking, with higher awareness among those with greater education.

In Ethiopia, a similar study revealed that one-third of women who had made a decision about their delivery location planned to give birth at home. Only 14.8% of

respondents could name three or more obstetric danger signs, indicating low overall awareness<sup>43</sup>. According to a similar study conducted in Ethiopia, one-third of women who had decided where they would give birth intended to do so at home. Low general awareness was indicated by the fact that only 14.8% of respondents could name three or more obstetric danger signs. In Central Java, Indonesia, a related field trial examined whether a novel method of prenatal care could increase women's awareness of its advantages. 60 expectant mothers from ten cluster villages participated in the study; they were split into an intervention group and a control group. While the control group received standard ANC, women in the intervention group received a revised ANC model that focused on education on safe delivery, complications, healthy pregnancy, and newborn care. The results showed that the intervention group's knowledge had significantly improved, especially with regard to newborn care and pregnancy complications. Educational level and socioeconomic status significantly influenced this improvement. The researchers recommended adopting the new ANC approach as a strategic measure for reducing maternal mortality<sup>44</sup>.

In another study from North East Ethiopia, 50.3% of respondents demonstrated comprehensive knowledge, and 56.2% practiced adequate birth and complication preparedness. The study concluded that strengthening community education and empowering women through expanded educational opportunities would improve BPCR practices and reduce pregnancy-related complications. It also emphasized that antenatal clinics must prioritize birth preparedness and provide consistent information and education to all expectant women<sup>45</sup>.

#### **2.1.10.5 Distance from Health Facility**

Distance to a health facility plays a significant role in determining healthcare utilization. Women living in remote or hard-to-reach areas often face difficulties

accessing care, primarily due to high transportation costs and long travel times. Conversely, women residing close to health facilities are more likely to utilize available maternal health services and seek emergency care when complications occur<sup>46–47</sup>.

A study conducted in Bangladesh found that although women expressed positive attitudes toward institutional delivery, they often encountered substantial challenges in reaching health facilities. On average, women had to travel 22.8 km through rural terrain to reach a maternity center<sup>47</sup>. Similarly, another study reported that women who lived more than one hour's travel time from a facility offering delivery services were significantly less likely to be assisted by skilled birth attendants compared to those living nearby<sup>48</sup>. In addition, research has shown that distance remains a major factor in seeking skilled care, with up to half of women traveling two kilometers or more to reach the nearest hospital<sup>49</sup>. A Nepalese study further revealed that women living more than one hour away from a maternity hospital were significantly more likely to deliver at home rather than at a health facility<sup>50</sup>.

#### **2.1.10.6 Information, Education, and Communication (IEC) about BPCR**

A cross-sectional, multi-country study across 19 sub-Saharan African nations examined the provision of information about pregnancy complications during antenatal visits<sup>51</sup>. Using data from the most recent Demographic and Health Surveys (DHS), the study analyzed how clinical factors (such as age, parity, and previous pregnancy termination), social characteristics (education and residence), and ANC attendance frequency affected women's likelihood of receiving counseling and delivering in health institutions. Findings indicated that the percentage of women who recalled receiving information on potential pregnancy complications during ANC varied widely—from 6% in Rwanda to 72% in Malawi. In 15 of the 19 countries,

fewer than half of women reported receiving such information. Institutional delivery rates ranged from 29% in Ethiopia to 92% in Congo Brazzaville. Teenagers, uneducated women, and those residing in rural areas were less likely to be counseled compared to urban, educated women aged 20–34. Moreover, the likelihood of recalling educational information increased with the number of antenatal visits. Receiving advice during ANC significantly increased the likelihood of institutional delivery<sup>51</sup>.

The study concluded that there remains a high unmet need for education on pregnancy complications across sub-Saharan Africa, especially among women facing substantial barriers to accessing care. It recommended that healthcare providers should make full use of ANC as a platform for education to support safe motherhood initiatives. Similarly, an Ethiopian study reported that not all women received counseling on BPCR during antenatal visits. Knowledge of pregnancy danger signs remained low, and many women neither understood the importance of birth preparedness nor made emergency plans<sup>52</sup>.

#### **2.1.10.7 Cultural Beliefs**

Traditional and cultural beliefs continue to influence women's engagement in BPCR practices<sup>53–54</sup>. For example, in some communities, it is believed that preparing a baby's clothing or layette before delivery may cause the infant's death<sup>55</sup>. In many communities, traditional norms and customs shape women's understanding of pregnancy, childbirth, and complications<sup>99</sup>. Cultural interpretations of pregnancy as a natural or spiritual process may reduce the perceived need for formal medical care, leading women to rely on traditional birth attendants or family support instead of skilled professionals<sup>102</sup>.

Another belief discourages women from disclosing pregnancy until it becomes visibly noticeable, which often delays antenatal registration and early identification of risk factors<sup>56</sup>. These cultural notions, combined with long-standing customs favoring home births, contribute to poor health-seeking behavior and low utilization of skilled birth attendants<sup>57</sup>.

#### **2.1.10.8 Social Support**

Efforts to improve BPCR and overall maternal health outcomes increasingly emphasize the role of social support, particularly the involvement of male partners, who often serve as the primary decision-makers in reproductive health matters. A review conducted in Nepal revealed that women who attended antenatal sessions together with their partners were twice as likely to be adequately prepared for childbirth compared to those who attended alone<sup>58</sup>. This finding underscores the importance of including men in antenatal education to promote shared responsibility for safe delivery planning and emergency preparedness.

Positive social support can motivate women to attend antenatal clinics, prepare emergency funds, and plan for skilled delivery through shared advice or material assistance<sup>99</sup>. Conversely, lack of support or negative community attitudes toward institutional deliveries may discourage preparedness efforts.

#### **2.1.10.9 Complications and Maternal Deaths**

Depending on the organisation defining, "maternal death" and "maternal mortality" might have different meanings. Maternal mortality, as defined by the World Health Organisation (WHO), occurs when a pregnant woman dies from complications related to the pregnancy, from preexisting diseases that worsen during pregnancy, or from the treatment of these disorders<sup>62</sup>.

This may occur at any time throughout pregnancy or up to six weeks after delivery. According to CDC, pregnancy-related deaths should be recorded for a full calendar year following the end of the pregnancy. American College of Obstetricians and Gynecologists (ACOG) states that any mortality that happens within a year after a resolved pregnancy is considered to be pregnancy-associated<sup>62</sup>. Pregnancy-related deaths must be identified so that researchers can determine whether pregnancy was a direct or indirect cause of death<sup>64</sup>.

There are two primary indicators that are considered when talking about maternal mortality

rates in a community or nation. The "maternal mortality ratio" and the "maternal mortality rate"

are both abbreviated as "MMR," which stands for "maternal mortality." The number of women

dying from complications during pregnancy or delivery decreased by 44% worldwide by 2017, although it is still 808 per day. The United Nations Population Fund (UNPF) reports

that, one woman died every 88 minutes from complications related to pregnancy or delivery.

For every woman who loses her life during pregnancy or childbirth, an additional 20-30 experience some kind of damage or disease<sup>65</sup>. The United Nations Population Fund predicts that 303,000 women died in childbirth or pregnancy-related problems in 2015. Direct obstetric deaths and indirect obstetric deaths are two categories used by the WHO to categorize the causes of maternal mortality.

People who experience complications during pregnancy, delivery, or abortion are those who pass away directly as a result of the obstetric process. From severe bleeding to obstructed labor, a variety of these conditions can be treated with

incredibly effective therapies. When a preexisting condition, like a heart condition, cannot be treated during pregnancy or is exacerbated by it, an indirect obstetric death may result. The global maternal mortality ratio decreased from 385 deaths per 100,000 live births in 1990 to 216 deaths per 100,000 live births in 2015 as a result of advancements in family planning, skilled birth attendants, and emergency obstetric care. In 1990, there were 385 deaths for every 100,000 live births. Over the past ten years, maternal mortality rates have decreased by half in many nations.

The incidence of maternal mortality has decreased because of various initiatives, but there is still room for improvement, especially in low-income regions. In Africa and Asia, where resources are already few, maternal mortality rates are higher than everywhere else. Even in locations with more access to services, racial and ethnic gaps and inequities in maternal MMR persist and provide a significant opportunity for advancement<sup>2</sup>. The maternal mortality rate is often regarded as an important barometer of a nation's health and a reflection of its health care system. Reducing worldwide MMR has been a priority for many health organisations throughout the world. Maternal outcomes may be improved by increasing community and family support. Furthermore, social and economic deprivation also have negative effects on maternal health, which may lead to an increase in maternal mortality. There is an increase in maternal mortality due to a variety of factors, including a lack of access to skilled medical care during childbirth, a long distance to travel to receive proper care, multiple births, barriers to accessing prenatal medical care, and inadequate infrastructure<sup>62</sup>.

## **2.2 Theoretical Framework**

### **2.2.1 Andersen's Healthcare Utilization Model**

Andersen's Behavioural Model was originally proposed by Ronald Andersen in 1968 and later revised in 1973, 1995, 2000, and 2001. His training as a medical sociologist

and health services researcher inspired him to explore the concepts of access and accessibility to medical care. In his early work, Andersen examined how individuals and systems interact within healthcare settings and, through this process, provided a systematic definition and understanding of *access* in 1970. Together with Aday, he operationalized and conceptualized access to medical health care, providing a unified theoretical structure to study how people use medical services. Eventually, Andersen expanded and restructured this framework into what became known as the Behavioural Model of Health Services Use, which serves as the theoretical foundation for this study. The framework was developed to identify the conditions that either promote or hinder healthcare utilization, offering a behavioural perspective to explain and predict patterns in health service use.<sup>68</sup>

The Andersen model is a conceptual framework designed to demonstrate the various factors influencing the utilization of health services. According to the model, the use of health services is influenced by three key components: predisposing factors, enabling factors, and need-related factors. They are as follows:

### **1. Predisposing Factors**

Predisposing factors are the socio-demographic and psychosocial characteristics that shape an individual's tendency to use healthcare services. These include variables such as age, parity, education, occupation, cultural background, health beliefs, and attitudes toward healthcare. They also encompass the individual's values, knowledge, and perceptions that influence the recognition of health needs and subsequent care-seeking behaviour. For example, an antenatal woman who possesses good knowledge of Birth Preparedness and Complication Readiness is more likely to make adequate preparations for childbirth and choose a skilled birth attendant, as she is aware of the dangers associated with home delivery. Such a woman is also likely to trust that

healthcare providers can competently manage any obstetric complications. Conversely, a woman with multiple prior home deliveries without adverse outcomes may perceive no need to seek skilled attendance during childbirth. In contrast, a primigravida (a woman pregnant for the first time) may be more cautious and uncertain about the pregnancy outcome, thus more inclined to use healthcare services to ensure safety<sup>68</sup>.

## **2. Enabling Factors**

Enabling factors refer to the logistical and resource-related conditions that facilitate or hinder access to healthcare. These include financial resources, social support systems, availability of healthcare personnel, and accessibility of health facilities that consistently provide care.<sup>68</sup>

For instance, antenatal women, especially primigravidae, who have a stable source of income are in a better position to prepare for childbirth and potential complications. Financial stability enables them to afford transportation, purchase delivery essentials, and access health facilities where skilled attendants are available. Similarly, women residing near health facilities have greater opportunities to utilize healthcare services than those living in remote or inaccessible areas.

Community and personal resources must therefore be both available and accessible whenever needed. For example, healthcare personnel and facilities must be within reach, and individuals should have the means and knowledge to utilize them effectively. Important enabling measures in this regard include income level, health insurance coverage, consistent access to healthcare providers, and reasonable travel and waiting times<sup>68</sup>.

### **3. Need-Related Factors**

Need-related factors represent the perceived and evaluated requirements for healthcare services. These encompass both subjective perceptions (how individuals view their health and the severity of their conditions) and objective assessments (as determined by healthcare professionals) <sup>68</sup>. For pregnant women, this dimension relates to how they perceive their health during pregnancy, their experiences with symptoms or complications, and their judgment regarding whether these issues warrant professional medical attention. Women who have experienced obstetric complications in previous pregnancies are less likely to risk home delivery and are more inclined to seek skilled care. Likewise, those with underlying health problems or high-risk conditions typically recognize the necessity for continuous monitoring by qualified healthcare providers.

### **4. Outcome**

The Andersen model also emphasizes outcomes, asserting that healthcare services should contribute to the maintenance and improvement of population health—both as perceived by individuals and as evaluated by professionals. Outcomes further encompass consumer satisfaction, which reflects how individuals perceive the quality, accessibility, convenience, and affordability of care received<sup>68</sup>. In the context of maternal health, these outcomes directly influence the use of antenatal and delivery services. For instance, if pregnant women find the healthcare environment unfriendly or unwelcoming, they may avoid facility-based delivery regardless of awareness or proximity. Therefore, the attitude of healthcare providers, the comfort of the facility, and the perceived quality of services all affect the extent to which pregnant women seek skilled care<sup>68</sup>.

**Fig 2.1: Model of Health Services Utilization Adopted.**

**Source : <sup>68</sup>**

#### **2.2.1.1 Application of Anderson Model to this Study**

Andersen's Healthcare utilisation Model can be applied to understand and improve birth preparedness and complication readiness (BP/CR) by examining how various factors influence a woman's decision to seek and utilize maternal healthcare services during pregnancy and childbirth. The model categorizes these factors into predisposing, enabling, and need factors, which can be analyzed to identify barriers and facilitators to BP/CR.

These factors relate to a woman's background and beliefs that may influence her decision to utilize maternal healthcare. Examples include In Andersen's Healthcare Utilization Model, education is a significant predisposing factor. A woman's perception of risk, knowledge of maternal health, and willingness

to use health services are all strongly influenced by her level of education. Compared to women with little to no formal education, educated women are more likely to recognize obstetric danger signs, value prenatal visits, and make plans for skilled birth attendance<sup>102</sup>. Women's degree of birth preparedness and complication readiness (BP/CR) is directly impacted by their increased autonomy in making health-related decisions, which is another benefit of education.

In the context of this study, higher educational attainment among antenatal women is expected to correlate positively with better awareness and proactive planning for childbirth and emergencies. Conversely, limited education may restrict access to information, reduce confidence in engaging with healthcare providers, and perpetuate reliance on traditional or home-based delivery practices. Parity, or previous delivery experience, is another predisposing factor influencing BP/CR behavior. According to Andersen's model, past health experiences shape current health-seeking behavior<sup>68</sup>. Women who have previously delivered safely at home without complications may develop a false sense of security, reducing their motivation to prepare adequately for subsequent births or to seek skilled care. Conversely, primigravidae (first-time mothers) or women who have experienced complications in prior deliveries are more likely to value antenatal counseling, plan for emergency transport, and choose facility-based delivery<sup>99</sup>. Therefore, parity affects both perceived need and health behavior. This study applies Andersen's model to explore how prior delivery experiences influence the likelihood of engaging in comprehensive BP/CR practices among pregnant women. Economic status is a key enabling factor within Andersen's framework because it determines access to and utilization of available health resources<sup>101</sup>. Financial capability affects a woman's ability to afford transport, purchase delivery items, pay for skilled birth attendance, and manage emergencies. Low-income women are often

less able to save for delivery costs or arrange for emergency transportation, which increases the likelihood of delays in seeking or reaching care. In contrast, women from higher socio-economic backgrounds can better plan and act promptly in emergencies, leading to improved maternal outcomes<sup>101</sup>. In this study, economic status is viewed as a critical determinant of how well women can implement BP/CR plans. It highlights how household income, savings, and access to financial support directly facilitate or hinder the utilization of maternal health services.

Work schedule and occupation also serve as enabling factors affecting the practical ability of women to access and utilize antenatal and delivery care services. Women engaged in formal employment or business may have limited flexibility to attend antenatal appointments regularly, leading to missed opportunities for counseling on birth preparedness<sup>98</sup>. Conversely, women with more flexible or home-based occupations may find it easier to adhere to antenatal schedules and follow BP/CR guidance. However, employment can also provide financial stability, which indirectly promotes preparedness through better access to transportation and supplies. Applying Andersen's model, this study examines how the nature and timing of women's work schedules either enable or constrain their ability to fully participate in birth preparedness and complication readiness activities.

Cultural beliefs and practices related to pregnancy and childbirth can either promote or hinder BPCR. For instance, some cultures may discourage institutional deliveries or specific types of antenatal care. Cultural beliefs and practices are key predisposing factors in Andersen's Healthcare Utilization Model, as they influence individual attitudes, perceptions, and decisions regarding maternal healthcare. In many communities, traditional norms and customs shape women's understanding of pregnancy, childbirth, and complications<sup>99</sup>. Cultural interpretations of pregnancy as a

natural or spiritual process may reduce the perceived need for formal medical care, leading women to rely on traditional birth attendants or family support instead of skilled professionals<sup>102</sup>. In this study, cultural beliefs are considered central to understanding variations in birth preparedness and complication readiness (BP/CR). Women from cultural settings that promote home delivery, spiritual interventions, or restrictions on women's autonomy may be less likely to plan adequately for skilled birth attendance or emergency care. Conversely, cultural contexts that value education, male involvement, and health facility delivery tend to enhance BP/CR practices.

Religion, as a dimension of social and cultural life, functions both as a predisposing and enabling factor in Andersen's model.<sup>68</sup> Religious doctrines and community norms can either encourage or discourage the utilization of healthcare services. For instance, some faith traditions emphasize divine protection and may discourage reliance on modern medical care, while others support antenatal attendance and safe hospital deliveries. Religious leaders and congregations often serve as influential opinion formers in shaping maternal health behaviors. In the context of this study, religion is examined for its dual influence, both as a source of social support and as a potential barrier when certain beliefs limit acceptance of medical intervention during pregnancy and delivery.

Gender roles and women's autonomy are critical enabling and predisposing factors in Andersen's model<sup>68</sup>. In patriarchal societies, men often control household finances and decisions regarding healthcare utilization, which can delay or prevent women from accessing antenatal and emergency obstetric services<sup>102</sup>. Women with limited autonomy may require permission or financial support from their husbands or family before seeking care, increasing the likelihood of the "three delays" in maternal emergencies. On the other hand, households that promote joint decision-making and

empower women to make independent health choices are associated with higher levels of BP/CR. Within this study, gender norms and decision-making dynamics are examined to determine how they influence women's ability to plan, act, and respond to pregnancy-related complications.

Social support networks (comprising family, friends, and community groups) serve as enabling factors that facilitate or hinder access to healthcare in Andersen's model. Positive social support can motivate women to attend antenatal clinics, prepare emergency funds, and plan for skilled delivery through shared advice or material assistance<sup>99</sup>. Conversely, lack of support or negative community attitudes toward institutional deliveries may discourage preparedness efforts. In this study, social support is analyzed as a contextual factor that determines how community relationships, partner encouragement, and collective norms influence BP/CR practices. Supportive social environments enhance information flow and resource mobilization, whereas unsupportive networks perpetuate delays in seeking care.

#### **Enabling Factors:**

These factors relate to the resources and opportunities available to a woman that enable her to utilize healthcare services. This includes household resources, access to financial resources, transportation, and social support can significantly impact BPCR.

Healthcare system factors: Availability, accessibility, and quality of healthcare facilities, including skilled birth attendants, and the presence of emergency obstetric care services are crucial.

Community factors: The availability of information about BP/CR, community norms, and the presence of support networks can also play a role.

#### **Need Factors:**

These factors relate to a woman's perception of her health needs and the perceived

severity of potential complications. Examples include:

Awareness of danger signs: Knowledge about potential complications during pregnancy and childbirth is essential for timely utilization of services.

Perceived susceptibility to complications: Women who believe they are at high risk of complications may be more likely to seek care.

Severity of illness: The perceived severity of pregnancy-related health issues can influence a woman's decision to seek care.

### **Applying the Model to Improve Birth Preparedness and complication readiness**

By analyzing these factors using Andersen's model, healthcare providers and policymakers can identify specific areas where interventions can be targeted to improve BPCR. For example:

Addressing predisposing factors: Implement educational programs to raise awareness about danger signs of pregnancy complications and promote positive attitudes towards healthcare services.

### **Strengthening Enabling Factors**

Enabling factors refer to the logistical, financial, and systemic conditions that facilitate or hinder an individual's ability to access and utilize healthcare services. In the context of BP/CR, strengthening these factors involves creating a supportive environment where pregnant women can act on their knowledge and intentions to prepare effectively for childbirth and emergencies.

First, improving access to healthcare facilities is crucial. This can be achieved by increasing the number and geographical spread of well-equipped primary healthcare centers, especially in rural and underserved communities. Outreach programs and mobile clinics can further extend antenatal and delivery services to hard-to-reach areas.

Second, ensuring the availability of skilled birth attendants is essential for reducing maternal and neonatal mortality. Regular training, fair remuneration, and retention incentives for healthcare workers can help maintain a competent and motivated workforce, particularly in rural postings.

Third, providing financial and logistical support enhances women's ability to implement BP/CR plans. Community-based health insurance schemes, maternal vouchers, or emergency transport funds can reduce the economic barriers to skilled care. Partnerships between local governments, NGOs, and community leaders can also establish transportation systems (such as community ambulances or tricycle arrangements) to facilitate timely referrals during emergencies.

Lastly, strengthening health communication and community engagement empowers families and partners to actively support pregnant women in their preparedness plans. Engaging husbands, mothers-in-law, and community influencers ensures that the enabling environment extends beyond the healthcare facility to the household and community levels.

### **Addressing Need Factors**

Need factors in Andersen's model relate to an individual's perceived and evaluated requirement for medical care. Within the BP/CR framework, addressing need factors involves increasing both awareness of pregnancy-related complications and the motivation to seek prompt and appropriate healthcare services.

First, enhancing women's perception of risk is fundamental. Many pregnant women underestimate the potential severity of complications, especially when previous pregnancies were uneventful. Health education during antenatal visits should therefore emphasize that every pregnancy carries inherent risks, regardless of parity or previous experiences. Visual aids, storytelling, and community testimonies can make

this information more relatable and convincing.

Second, strengthening antenatal care participation provides a critical opportunity to identify and manage potential complications early. Encouraging early registration and consistent attendance helps in monitoring maternal health status and reinforcing messages on danger signs, nutrition, and emergency planning. ANC sessions should integrate BP/CR counseling as a standard component rather than an optional add-on.

Third, building trust and satisfaction with healthcare services helps convert perceived need into actual healthcare utilization. When women perceive health facilities as safe, respectful, and responsive, they are more likely to seek care when complications arise. Healthcare providers should therefore focus on respectful maternity care, confidentiality, and patient-centered communication.

Finally, community-level interventions such as group discussions, mass media campaigns, and peer education can help shape social norms that view facility-based delivery and emergency care as essential. When communities collectively acknowledge the need for professional obstetric care, individual women are more likely to internalize and act upon that need.

## **2.3 Review of Empirical Studies**

### **2.3.1 Level of Birth Preparedness**

Pregnancy is often viewed as a period filled with hope, anticipation, and pride for expectant mothers. In most cultures, childbirth is celebrated not only as a joyful event but also as a symbol of continuity and family legacy<sup>1</sup>. A well-prepared pregnant woman demonstrates a positive attitude toward pregnancy by understanding what constitutes normal and abnormal changes in her body. However, many women are unable to experience such confidence and joy due to inadequate preparation or lack of awareness about the warning signs of pregnancy-related complications<sup>72, 73</sup>. Globally,

it's estimated that over 40% of pregnant women experience serious complications during pregnancy or childbirth. According to the World Health Organization (WHO), around 300 million women in developing regions live with temporary or long-term health problems linked to pregnancy and childbirth. Tragically, most maternal deaths still occur in low- and middle-income countries.

In 2023 alone, out of the 342,900 maternal deaths recorded worldwide, nearly 90% happened in sub-Saharan Africa<sup>2</sup>. Adolescent pregnancy presents an even greater concern. Research indicates that births among teenagers aged 15–17 years carry higher risks of poor medical, social, and economic outcomes<sup>74</sup>. Teenage mothers often have not completed their secondary education, face restrictions related to employment and mobility, and are significantly less likely to obtain a high school diploma or its equivalent compared with older mothers<sup>74</sup>. In Ghana, the proportion of adolescent mothers (aged 15–19 years) was reported at 13.3%, with the Ghana Health Service estimating that around 750,000 teenagers within this age group became pregnant in 2007. The persistence of inadequate birth preparedness has been identified as a major contributor to the slow progress toward achieving maternal health targets in several developing nations.

Research has consistently demonstrated that women who are well-prepared for childbirth have a higher chance of receiving skilled birth attendant assistance<sup>75,76</sup>. Implementing birth-planning techniques dramatically increased the use of emergency obstetric services in one intervention aimed at enhancing birth readiness; 45% of families in the intervention area reported having access to community-based support networks<sup>77</sup>. This implies that teaching expectant mothers about birth readiness gives them and their families the ability to decide when and how to seek professional care.

Despite these benefits, multiple studies have continued to reveal low levels of birth preparedness among women of reproductive age<sup>77,78,79,80</sup>. For example, research conducted in Nepal emphasized that mothers' awareness and active participation in maternal and child health programs are essential for improving birth outcomes<sup>81</sup>. The national survey in Nepal was designed to produce representative data across various indicators—including urban and rural areas and the three ecological zones (mountain, hill, and terrain)<sup>41</sup>. The survey targeted 11,095 households and planned interviews with 13,200 women aged 15–49, as well as a sub-sample of men in every other selected household. Findings revealed that the rate of women with no birth preparation was 40% higher in rural areas than in urban locations.

The same study also reported that poor birth preparedness was more common among women under 20 years and those above 40 years of age. Regarding education, 77% of women without formal education had not made any birth preparations—nearly three times the rate observed among educated women (28%). Furthermore, a community-based cross-sectional study conducted among 812 pregnant women using pre-tested, structured questionnaires found an overall low level of birth preparedness<sup>42</sup>. Only 17% of the respondents were classified as well-prepared for delivery and possible complications. Women who were less prepared were more likely to be illiterate, reside in rural areas, and have not attended antenatal care services during their current pregnancy<sup>42</sup>.

### **2.3.2 Knowledge of danger signs of pregnancy**

Pregnancy-related danger indicators can be roughly divided into three groups. Blurred vision, hand or facial swelling, and severe vaginal bleeding are the most typical or important warning signs during pregnancy. Severe vaginal bleeding, prolonged labor

lasting more than twelve hours, convulsions, and retained placenta are the main warning signs of labor and delivery. These symptoms, which indicate the need for immediate medical attention, are indicators or manifestations that nonclinical people can readily recognize rather than actual obstetric complications. Critical danger indicators during the postpartum phase include high fever, foul-smelling vaginal discharge, and severe vaginal bleeding. UNICEF claims that raising women's knowledge of obstetric danger signs improves early problem detection and reduces the amount of time it takes for them to decide to seek professional obstetric care<sup>82</sup>.

Based on the widely accepted assumption that “every pregnancy carries a risk,” women should therefore be adequately informed about possible danger signs or complications that may occur during pregnancy, childbirth, and the postpartum period<sup>83</sup>. Such knowledge equips women and their families to make timely and appropriate decisions to seek professional assistance from skilled birth attendants when warning signs arise. Women's awareness of obstetric danger signs during pregnancy, delivery, and the postpartum period is low, according to several studies<sup>84, 8586</sup>. On the other hand, a cross-sectional study found that mothers who identified at least one pregnancy (79.2%), delivery (78.5%), and newborn complications (82.1%) danger sign were relatively aware. Furthermore, a prospective follow-up study<sup>88</sup> showed that women who were able to recognize three or more key danger signs during labor were significantly more likely to use skilled maternity care than those who were not aware of any key danger signs<sup>88</sup>.

Another cross-sectional study found that the most common danger signs were severe vaginal bleeding (19.1%) after delivery, stillbirth (5.2%) in the baby, and prolonged labor (22.4%) in the previous pregnancy<sup>89</sup>. Despite these results, numerous studies continue to demonstrate that women's awareness of obstetric danger signs remains

consistently low throughout the various stages of pregnancy, childbirth, and the postpartum period<sup>84, 85</sup>.

### **2.3.3 The Practice of Birth Preparedness and Complications readiness among Primigravida**

A substantial body of evidence demonstrates a direct association between the health-seeking behavior of expectant mothers and their use of available maternal health services<sup>90, 91</sup>. Women who have attained at least a primary level of education or higher are nearly twice as likely to be adequately prepared for childbirth and potential complications when compared to those without any formal education<sup>91</sup>. Similarly, another investigation revealed a significant positive correlation between higher educational attainment and greater awareness of obstetric danger signs<sup>93</sup>. Furthermore, maternal age has been suggested to act as a proxy indicator for accumulated experience and knowledge of healthcare systems, which may positively influence the frequency and quality of service utilization<sup>83</sup>. In addition, family size has also been identified as an influential factor affecting the extent to which expectant women access and use maternal healthcare services.

Supporting evidence from a community-based survey involving 759 recently delivered women across 120 villages in rural Mbarara District indicated that those residing more than one hour's travel distance from a health facility providing delivery services were markedly less likely to opt for skilled birth attendance. Interestingly, women who made joint decisions with their husbands regarding the place of delivery were significantly more likely to choose skilled birth attendants (SBAs) compared to those who made such decisions independently. Likewise, the travel time to reach a healthcare facility was shown to exert a strong influence on the likelihood of utilizing SBAs<sup>87</sup>.

In a separate study, a large proportion of women (75%) expressed preference for

delivering in public health facilities, regardless of whether they had saved money for childbirth expenses or not. Notably, 84% of women who made transportation arrangements were more inclined toward institutional deliveries. When comparing facility types, results showed that irrespective of financial preparedness, three-quarters (75%) delivered in public health institutions compared to one-quarter (25%) in private facilities. Moreover, among women who had arranged transport, 84% delivered institutionally, whereas only 37% of those without transportation plans gave birth in healthcare facilities<sup>92</sup>. A related cross-sectional study involving 812 women found that only 20.5% identified a skilled provider for childbirth, and just 8.1% recognized government health facilities as their planned place of delivery. Transportation preparedness was extremely low (7.7%), and a vast majority, 653 women (87.9%), intended to deliver at home, while a mere 60 women (8%) planned to deliver in health institutions<sup>84</sup>.

Another prospective follow-up study involving 3,472 respondents reported that 75.9% had attended at least one antenatal care (ANC) visit, and 52.7% received care from either hospitals or health centers staffed with skilled professionals. However, only 35.4% completed the recommended four or more ANC visits. Among respondents, 30.6% utilized skilled delivery services, with a higher proportion (74.1%) originating from urban settings<sup>42</sup>. Beyond educational and demographic factors, traditional beliefs and cultural norms have also been shown to substantially shape maternal health behaviors. Traditional or indigenous knowledge refers to the localized understanding and customs that guide a community's way of life, encompassing religion, social practices, and perceived truths considered divinely inspired<sup>33</sup>. Such traditions, although valued culturally, often influence health-seeking behavior in ways that discourage the utilization of formal healthcare systems. For

instance, religious convictions have been identified as primary reasons for delays in seeking medical assistance and a preference for home births<sup>94</sup>. In one study, many pregnant women were observed to prefer consultation with religious leaders, traditional healers, or traditional birth attendants instead of trained healthcare professionals. It was also noted that when labor coincided with prayer sessions, particularly among Muslim communities, women were often encouraged to wait until prayers concluded before seeking medical help<sup>95</sup>.

#### **2.3.4 The Role of Knowledge on Pregnancy and Childbirth in Birth Preparedness**

Home delivery is still the most popular and frequently the only practical choice for a significant portion of women in many developing nations. Still, a sizable percentage of these births take place without the help of qualified medical personnel<sup>95</sup>. One of the most important interventions for encouraging safe motherhood has been found to be the presence of trained birth attendants with midwifery experience at every delivery. Nonetheless, the World Health Organization (WHO) reports that 47% of births in developing countries are performed by family members, traditional birth attendants (TBAs), or without any kind of professional help<sup>2</sup>.

Prenatal screening for diseases like syphilis, anemia, pre-eclampsia, and other common pregnancy complications should ideally be performed on all expectant mothers, as these evaluations are essential for the early identification and avoidance of negative consequences. Regrettably, many African women are still not well-informed about the dangers of pregnancy and the significance of regular attendance at prenatal care<sup>72</sup>.

Additionally, the structural organization of healthcare systems in many African settings often compels women to rely on facility-based delivery services, sometimes without fully understanding their significance or necessity. This situation,

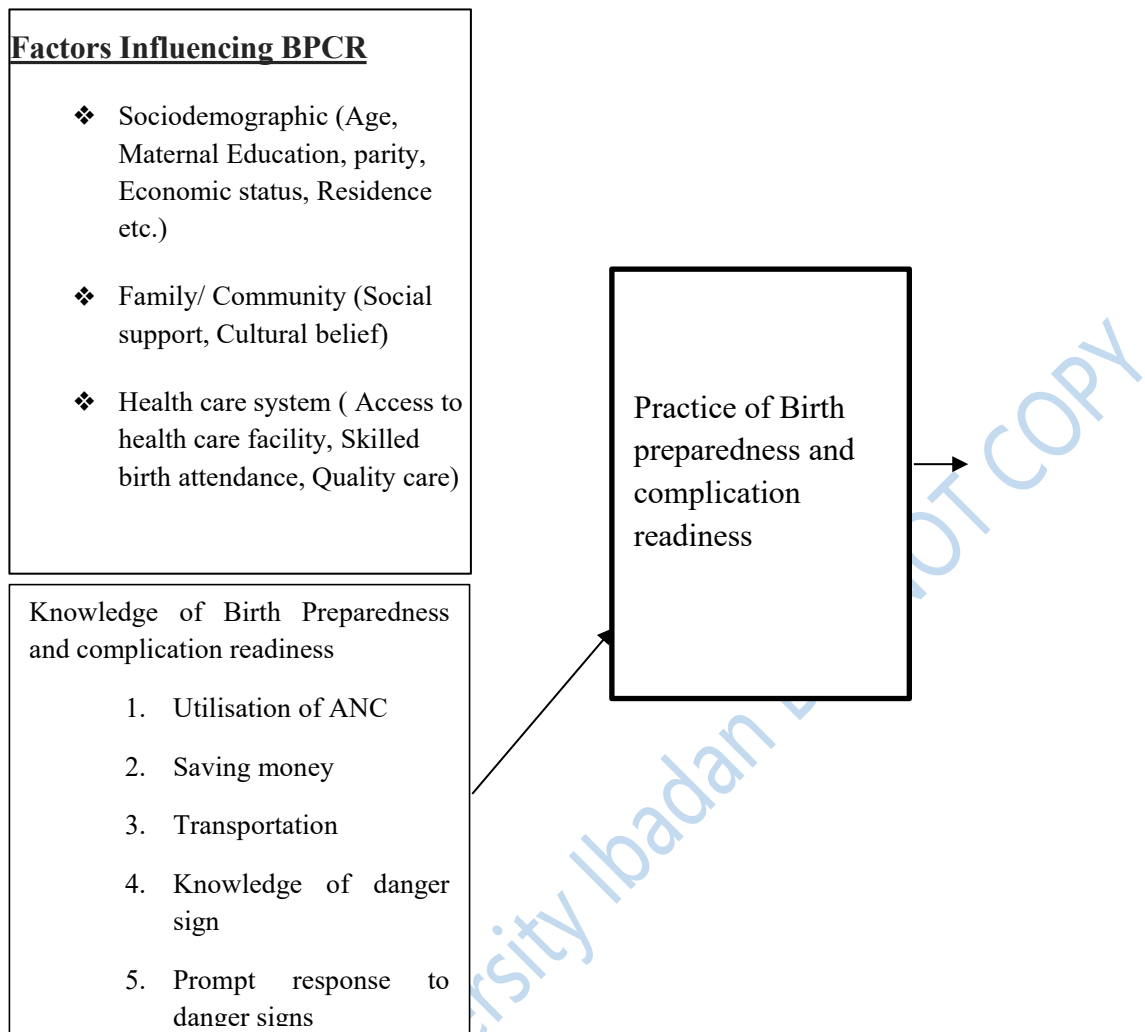
compounded by poor communication between expectant mothers and healthcare providers, significantly shapes women's perceptions and attitudes toward antenatal care. Consequently, antenatal services are sometimes viewed as burdensome or inconvenient, while labor and childbirth are regarded merely as occasions requiring medical facility intervention, rather than opportunities for preventive care and health promotion. Although these institutionalized approaches to antenatal care provision and utilization may indeed enhance safety during childbirth by promoting facility-based deliveries, they inadvertently restrict women's broader understanding of pregnancy health and associated risks. Women's limited comprehension of health during pregnancy often results in delayed initiation of antenatal visits and irregular attendance, both of which can contribute to avoidable maternal and perinatal deaths. Evidence from earlier research emphasizes that timely healthcare utilization during both normal and high-risk pregnancies is significantly influenced by awareness of obstetric danger signs and adequate birth preparation. Women are better equipped to identify issues early and seek expert medical assistance as soon as possible thanks to this awareness. Furthermore, significant decreases in maternal mortality from pregnancy-related complications have been repeatedly linked to the availability of emergency obstetric care and the presence of trained attendants at delivery<sup>88</sup>.

## 2.4 Conceptual Model

### Independent Variables

### Dependent Variables

|         |
|---------|
| Outcome |
|---------|



**Figure2.2:Conceptual framework showing factors influencing practice of birth preparedness and complication readiness among primigravida**  
**Source: Researcher, 2025.**

## 2.5 Summary of the Reviewed Literature

While several studies have investigated maternal health behaviors in Nigeria and across sub-Saharan Africa, there remains a significant gap in the literature concerning birth preparedness and complication readiness (BPCR), especially among primigravida women, a group uniquely at risk due to their lack of prior pregnancy and childbirth experience. Most existing research tends to focus on the general population of pregnant women, often combining multiparous and primiparous respondents without disaggregating the findings. As a result, the specific challenges, fears, misconceptions, and preparedness levels of primigravida women are insufficiently explored or understood. Furthermore, there is a noticeable emphasis in previous studies on the prevalence of antenatal care (ANC) attendance as a measure of preparedness, with limited exploration into the broader and more nuanced dimensions of BPCR such as identifying skilled birth attendants, arranging emergency transportation, saving money, and understanding danger signs.

These components, which are critical to reducing maternal morbidity and mortality, are often assessed in isolation rather than within a comprehensive framework that considers both individual-level determinants (such as education, autonomy, and knowledge) and systemic barriers (such as availability of healthcare services and sociocultural norms). Additionally, much of the existing literature tends to be descriptive and lacks in-depth analytical exploration of the underlying behavioral, structural, and contextual factors that influence BPCR practices. There is limited integration of robust theoretical models to explain why some women engage in BPCR while others do not. While models like the Health Belief Model, Theory of Planned Behavior, Andersen's Behavioral Model, and the Three Delays Model have been applied sporadically in maternal health research, few studies have meaningfully applied these frameworks to investigate BPCR among first-time mothers in urban

Nigerian settings. This leaves a conceptual gap in understanding the complex interplay of perceived risk, cultural beliefs, social support, intention, access, and healthcare system responsiveness as they relate to preparedness and readiness.

Moreover, studies often overlook the role of the health system itself such as the quality of antenatal counseling, provider communication, and institutional encouragement of birth preparedness focusing more on the women's characteristics than on the environments in which they seek care. There is also a lack of data that captures how the timing, quality, and content of antenatal visits influence BPCR planning, particularly for women attending tertiary healthcare facilities like Adeoyo Maternity Hospital, which caters for both low- and high-risk pregnancies.

In addition, there is a methodological gap in the literature. Many existing studies are cross-sectional and predominantly quantitative, providing limited insight into the lived experiences and decision-making processes of primigravida women. Few have utilized mixed-methods approaches or qualitative inquiries that would allow for a deeper exploration of the psychological, familial, and societal dynamics that shape a woman's preparedness for birth and response to complications.

Given these observed gaps, this study is timely and necessary. It seeks to examine, in a more focused and theory-informed manner, the factors influencing practice of BPCR among primigravida women, taking into account not only their knowledge and behaviors but also the broader systemic, cultural, and service-level influences. By concentrating on primigravida women attending Adeoyo Maternity Hospital, this study contributes to the literature by addressing an under-researched population group in a specific healthcare setting, thereby offering contextually relevant data to inform maternal health programs, policies, and targeted interventions aimed at improving maternal outcomes among first-time mothers in Nigeria.

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## Endnotes

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### **Chapter Three**

#### **Methodology**

This chapter describes the research design, study population, sample size, sampling techniques, instruments for data collection, data collection procedure, validity and reliability of research instrument, data analysis and ethical consideration.

### **3.1 Research Design**

This study adopted descriptive survey research design to identify the factors influencing the practice of birth preparedness and complication readiness among primigravida women attending antenatal clinics at Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State. The design was appropriate for assessing the current status of knowledge and practices related to BPCR and identifying associated factors within a defined population at a specific point in time

### **3.2 Population of the Study**

The study population comprised of primigravidae attending antenatal care at Adeoyo Maternity Teaching Hospital Ibadan, during the study period. A primigravida is a woman who is pregnant for the first time, irrespective of gestational age.

The hospital was established in 1927 as a maternity hospital by the Church Missionary Society (CMS) in collaboration with the colonial government. It was initially known as the Adeoyo Maternity Home, named after the Adeoyo. It was formerly used as a college hospital by the University of Ibadan between 1948 and 1954 after being upgraded to accommodate an additional fifty beds, a laboratory, X-ray annex, medical lecture rooms, and a mortuary.

The hospital provides maternal and child healthcare services to people in Ibadan and the surrounding area. It is made up of an antenatal clinic, labor ward, antenatal ward, gynecological ward, lying in ward, children's ward, immunization clinic, post-caesarian section ward, gynecological clinic and family planning clinic. After Nigeria gained independence in 1960, the hospital continued to grow and expand its services. In the 1970s, it was upgraded to a teaching hospital, with a focus on training midwives and other healthcare professionals. The hospital also established a range of specialized services, including pediatric care, antenatal care, and post-natal care.

In the 1990s, the hospital underwent significant reforms aimed at improving its infrastructure and services. The hospital was equipped with modern facilities, including operating theaters, labor delivery rooms, and intensive care units. The hospital also established partnerships with international organizations, such as the United Nations Population Fund (UNFPA), to enhance its reproductive health services. The hospital has also been recognized for its efforts in reducing maternal mortality rates in Nigeria, which are among the highest in the world.

### 3.3 Sample and Sampling Technique

The minimum sample size was determined using the Fishers' formula for the determination of sample size for descriptive studies. The sample size for this study was determined considering the following factors:

- ❖ A standard normal deviate of 1.96,
- ❖ 95% confidence interval
- ❖ Acceptable margin of error 5%.

Based on the Fisher's formula, that is

$$n = \frac{Z^2 p (1-p)}{d^2}$$

Where: n - minimum sample size required

d - Is margin of error 5%

z - Confidence level 95%

p - p = estimated prevalence of BPCR practice among primigravida 87.8%<sup>1</sup>

$$n = \frac{(1.96)^2 * 0.878(1- 0.878)}{(0.05)^2}$$

$$n = \frac{3.8416 * 0.878 * 0.122}{0.0025}$$

$$0.0025$$

$$n = \frac{0.4114}{0.0025}$$

$$0.0025$$

$$n = 165$$

Correcting for a possible non- response rate of 10%, the final calculation is  $165/0.9 = 183$

Therefore, a total of 183 primigravid women attending antenatal clinic at Adeoyo Maternity Hospital was included for the study.

A systematic random sampling technique was employed to select participants for this study. The antenatal (ANC) attendance registers at Adeoyo Maternity Teaching Hospital served as the sampling frame, with each primigravida woman attending the clinic assigned a unique identification number. The sampling interval (k) was calculated by dividing the total number of primigravida women attending ANC during the study period by the required sample size of 183. For instance, in the case where 732 primigravida women were registered during the study period, dividing 732 by 183 yielded a sampling interval of approximately 4, meaning that every fourth woman was selected to participate in the study.

To ensure randomness, the first respondent was chosen by randomly selecting a number between 1 and k. For example, if the random start is 2, then women numbered 2, 6, 10, 14, and so on were recruited until the desired sample size was reached. Only primigravida women who met the inclusion criteria and provided informed consent were included in the study. However, in cases where a selected woman did not meet the inclusion criteria or declined participation, the next eligible woman on the list was chosen. This systematic random sampling approach ensure that the sample is evenly

distributed across the study population, reducing the likelihood of selection bias, and enhance the representativeness of the findings.

### **3.4 Description of the Research Instrument**

A structured self-developed questionnaire was used to collect data. The questionnaire was developed based on relevant literature and research questions; it covered the following sections:

**Section A:** Socio-demographic characteristics: This included questions on age, marital status, educational level, Ethnicity, occupation, income, religion. parity (10 items)

**Section B:** Knowledge of birth preparedness and complication readiness (14 items structured in a “YES” or “No” format)

**Section C:** Knowledge of danger signs (This section contains three main questions divided into 16 sub-questions, structured in a “YES” or “No” format)

**Section D:** Practice of birth preparedness and complication readiness (Contained 17 items structured in a “YES” or “NO” format). The section is divided into two sections, the first 11 questions centred on birth preparedness, while the last six question were focused on complication readiness.

**Section E:** Factors influencing Birth preparedness and complication readiness (This contained 11 items structured in a in a “YES” or “NO” format)

### **3.5 Validity of the Research Instrument**

Validity of research instrument was ensured by adapting the items from the relevant literature literatures similar to the study. The Promoter with experts in research also assessed the research instrument (Questionnaires) for relevance, clarity adequacy of content and ability too elicit accurate information of the study. Translation of the instrument to Yoruba was done by a Yoruba translator.

### 3.6 Reliability of the Research Instrument

Reliability of the instrument was assessed through pretest of instrument involving 10% of the total sample size (18 respondents). The pretest was carried out among pregnant women attending antenatal clinic in Jericho Specialist Hospital, Ibadan. The women attending ANC at Jericho hospital had similar characteristics. This population (attending ANC at Jericho) was not included for the data collection of the main study. The purpose of the pretest was simply to test the clarity, consistency and reliability of the questionnaire items.

The instrument's internal consistency was assessed across each section B to E using Cronbach's alpha. A Cronbach's alpha coefficient of 0.70 was considered to be good in determining how well the items measuring the same construct produce similar scores. The results of the internal consistency are shown on the table 3.1 below.

**Table 3.1 Results of Cronbach's Alpha values**

| Section   | Cronbach's Alpha<br>coefficient | Remark                                       |
|-----------|---------------------------------|----------------------------------------------|
| Section B | 0.845                           | Good internal consistency for study purpose. |
| Section C | 0.839                           | Good internal consistency for study purpose. |
| Section D | 0.829                           | Good internal consistency for study purpose. |
| Section E | 0.826                           | Good internal consistency for study purpose. |

**Source :** Survey Fieldwork 2025

The results of the internal consistency show that each of the sections will successfully measure same construct and produce similar scores.

### **3.7 Method of Data Collection**

Signed and stamped Letter of introduction was obtained from the head of Department of Nursing, Lead City University, Ibadan. The letter was taken to the Oyo State Ministry of health. Ethical approval was obtained from the Oyo State Ethics Review Committee prior to the commencement of the study. The ethical approval was taken to the management of Adeoyo Maternity Teaching Hospital Ibadan, Oyo State .The researcher and two trained research assistants fluent in English and Yoruba visited the ANC to meet the nurses introduced the researcher to the pregnant women . Informed consent was obtained from each participant after providing adequate information about the study, including its purpose, voluntary participation, confidentiality, and the right to withdraw at any point. All data were collected and securely stored to maintain participants' privacy. Data collection was done in 15-20minutes within 4 weeks. Written and verbal informed consent was sought and obtained from participants before administering the questionnaire. There was no manipulation or force involved; participation was entirely voluntary. The aims of the study were thoroughly explained to the participants so that the respondents may feel confident and assured that their responses would only be used for research purposes. The respondents were given the assurance that they may choose not to answer any question they were unsure about and that they could stop participating in the study at any time without facing any repercussions.

Participants were told that all information obtained from them would be treated with the utmost confidentiality. They did not write their names on the questionnaire. Data collected from this study were treated with strict confidentiality. It was not linked to

the correspondents in any way. Participants were respected and all information and data obtained were appropriately stored in compliance with applicable legal requirements and institutional policy.

The participants were informed that no harmful processes would be involved during the study. The study did not expose them to any danger. The study was valuable and offered benefits that outweigh any risks or harms, including any potential psychological, physical, legal, social, or economic harm. The respondents were not subjected to any harm in the course of the study.

Participation was entirely voluntary. The aims of the study were thoroughly explained to the respondents so that they may feel confident and assured that their responses would only be used for research purposes. The respondents were given the assurance that they may choose not to answer any question they were unsure about and that they could stop participating in the study at any time without facing any repercussions.

### **3.8 Method of Data Analysis**

Collected data was entered, cleaned, and analyzed using Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics offrequencies, percentages, means, and standard deviations were used to analyse the research questions data on demographics of respondents. Inferential analysis was conducted to identify predictors of good BPCR practice. Statistical significance was determined at a 95% confidence level with a p-value of 0.05.

A Chi-square cross tabulation test was utilized as an inferential statistics tool to ascertain the relationship between knowledge and practice of birth preparedness and complication readiness. The null hypothesis will be failed to be rejected if the derived p-value is higher than the significant alpha-value of 0.05. Hence the null hypothesis will stand.

A Chi-square cross tabulation test was utilized as an inferential statistics tool to ascertain the relationship between sociodemographic variables (age, educational level, and religion) and knowledge of birth Preparedness. The null hypothesis will be failed to be rejected if the derived p-value is higher than the significant alpha-value of 0.05. Hence the null hypothesis will stand.

Pearson Product Moment Correlation Coefficient (PPMC) Analysis was used to test for significant relationship between availability of social support and the level of birth preparedness and complication readiness at a significant alpha-value of 0.05.

Regression analysis was used to test for significant relationship between the factors influencing the practice of Birth preparedness and complications readiness at a significant alpha-value of 0.05.

### 3. 9 Ethical Approval

Ethical approval was obtained from the Oyo state Ethics Review Committee and Lead City Ethics Review Committee prior to the commencement of the study. Permission was also sought from the management of Adeoyo Maternity Teaching Hospital. Informed consent was obtained from each participant after providing adequate information about the study, including its purpose, voluntary participation, confidentiality, and the right to withdraw at any point. All data collected was securely stored to maintain participants privacy.

### Endnotes

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## **Chapter Four**

### **Result and Discussion of Findings**

This chapter presents the results of the study on assess factors influencing the practice of birth preparedness and Complications readiness among Primigravida attending Adeoyo Maternity Teaching Hospital Ibadan, Oyo State. A total of one hundred and eight-three (183) questionnaires were distributed to primigravida women attending antenatal clinic at Adeoyo Maternity Hospital. All questionnaires distributed were correctly filled, retrieved, and analyzed, yielding a 100% response rate. The presentation of results aligns with the research questions raised and the hypothesis tested in the study which are structured into five main sections: sociodemographic characteristics, knowledge of birth preparedness, knowledge of danger signs in pregnancy, practice of birth preparedness and complications readiness, and factors influencing practice of birth preparedness and complications readiness.

#### 4.1 Demographic Data Analysis

**Table 4.1a: Socio - demographic Characteristics of Respondents (n = 183)**

| Variable                    | Frequency | Percentage (%) |
|-----------------------------|-----------|----------------|
| Age                         |           |                |
| ≤ 20                        | 8         | 4.4            |
| 21-30                       | 104       | 56.8           |
| 31-40                       | 70        | 38.3           |
| > 40                        | 1         | .5             |
| Mean age = 28.85+4.93 years |           |                |
| Religion                    |           |                |
| Christianity                | 100       | 54.6           |
| Islam                       | 82        | 44.8           |
| Other                       | 1         | .5             |
| Ethnicity                   |           |                |
| Yoruba                      | 172       | 94.0           |
| Igbo                        | 8         | 4.4            |
| Hausa                       | 3         | 1.6            |
| Other                       | 0         | 0              |
| Level of Education          |           |                |
| Primary                     | 9         | 4.9            |
| Secondary                   | 84        | 45.9           |
| Tertiary                    | 88        | 48.1           |
| No Formal Education         | 2         | 1.1            |
| Marital status              |           |                |
| Married                     | 179       | 97.8           |
| Divorce                     | 2         | 1.1            |
| Widowed                     | 1         | .5             |
| Separated                   | 1         | .5             |
| Single                      | 0         | 0              |

**Source:** Survey Fieldwork, 2025

**Table 4.1b: Socio - demographic Characteristics of Respondents (N = 183)**

| Variable                          | Frequency | Percentage (%) |
|-----------------------------------|-----------|----------------|
| Monthly income (Naira)            |           |                |
| <50,000                           | 124       | 67.8           |
| 50,000-100,000                    | 28        | 15.3           |
| 100,000-200,000                   | 26        | 14.2           |
| 200,000-500,000                   | 4         | 2.2            |
| >500,000                          | 1         | .5             |
| Mean income = #75,173 +<br>#8,250 |           |                |
| Occupation                        |           |                |
| Civil servant                     | 43        | 23.5           |
| Trader                            | 102       | 55.7           |
| Students                          | 6         | 3.3            |
| House wife                        | 2         | 1.1            |
| Others                            | 30        | 16.4           |
| Gestational age                   |           |                |
| First Trimester                   | 10        | 5.5            |
| Second                            | 68        | 37.2           |
| Third                             | 105       | 57.4           |
| Number of previous ANC<br>visit   |           |                |
| 1                                 | 52        | 28.4           |
| 2                                 | 31        | 16.9           |
| 3                                 | 42        | 23.0           |
| 4                                 | 16        | 8.7            |
| 5                                 | 21        | 11.5           |
| 6                                 | 13        | 7.1            |
| 7                                 | 2         | 1.1            |
| >8                                | 6         | 3.2            |

**Source:** Survey Fieldwork, 2025

Table 4.1a and 4.1b above show that respondents were predominantly young adults: 56.8% were aged 21–30 years and 38.3% were 31–40 years, with a mean age of 28.85  $\pm$  4.93 years. Only 4.4% were  $\leq$ 20 years, and 0.5% were older than 40, indicating a largely youthful cohort. Over half identified as Christians (54.6%), with Islam

accounting for 44.8% and other faiths 0.5%. The sample was overwhelmingly Yoruba (94.0%), with small proportions of Igbo (4.4%) and Hausa (1.6%). Educational attainment was high: nearly half (48.1%) had tertiary education and 45.9% had secondary education; only 4.9% had primary education and 1.1% reported no formal schooling. Almost all respondents were married (97.8%), while divorced, widowed, and separated categories were each under 1%; none reported being single.

Economically, most earned <₦50,000 monthly (67.8%); 15.3% earned ₦50,000–₦100,000 and 14.2% earned ₦100,000–₦200,000, with very few above ₦200,000; the mean income was ₦75,173  $\pm$  ₦8,250. Occupations were led by traders (55.7%), followed by civil servants (23.5%); 16.4% fell into “others,” with students and housewives comprising small shares. In terms of obstetric profile, the majority were in the third trimester (57.4%), 37.2% in the second, and 5.5% in the first. Antenatal clinic (ANC) attendance clustered at one visit (28.4%) and three visits (23.0%), with smaller proportions at two (16.9%) and four (8.7%) visits; only 3.2% had more than eight visits, suggesting many were still mid-course in ANC schedules.

## 4.2 Presentation of Data

### 4.2.1 Analysis of Research Questions

**Research Question One:** What is the level of knowledge of Birth Preparedness and Complication Readiness among Primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State?

**Table 4.2a. Knowledge of birth preparedness among primigravida attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State**

| Items                                                                               | Yes<br>Frequency<br>(%) | No<br>Frequency (%) |
|-------------------------------------------------------------------------------------|-------------------------|---------------------|
| Have you heard about “birth preparedness”                                           | 145 (79.2)              | 38 (20.8)           |
| Have you heard about “complication readiness”. Source                               | 123 (67.2)              | 60 (32.8)           |
| Health personnel                                                                    | 122 (66.7)              | 61 (33.3)           |
| Relatives                                                                           | 60 (32.8)               | 123 (67.2)          |
| Friends                                                                             | 47 (25.7)               | 136 (74.3)          |
| Media                                                                               | 50 (27.3)               | 133 (72.7)          |
| Do you know the importance of identifying a skilled birth attendant before delivery | 131 (71.6)              | 52 (28.4)           |
| Have you identified a skilled provider                                              | 130 (71.0)              | 53 (29.0)           |
| Have you made plan for your transportation means                                    | 144 (78.7)              | 39 (21.3)           |
| Have you saved money to be used in case of Emergency                                | 150 (82.0)              | 33 (18.0)           |

**Source:** Survey Fieldwork, 2025

**Table 4.2b. Knowledge of birth preparedness among primigravida attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State**

| Items | Yes<br>Frequency | No<br>Frequency (%) |
|-------|------------------|---------------------|
|-------|------------------|---------------------|

|                                                                                                | (%)        |            |
|------------------------------------------------------------------------------------------------|------------|------------|
| Have you prepared essential items for clean and safe delivery                                  | 170 (92.9) | 13 (7.1)   |
| Have you identified people that will support                                                   | 112 (61.2) | 71 (38.8)  |
| Myself                                                                                         | 60 (32.8)  | 123 (67.2) |
| Husband                                                                                        | 136 (74.3) | 47 (25.7)  |
| Family                                                                                         | 77 (42.1)  | 106 (57.9) |
| Do you know the importance of identifying a blood donor in case of Emergency                   | 122 (66.7) | 61 (33.3)  |
| Have you received any written materials(leaflet/booklet) about BP/CR during pregnancy          | 77 (42.1)  | 106 (57.9) |
| Do you know that adequately preparing for delivery reduces the risk of complications           | 145 (79.2) | 38 (20.8)  |
| Where is the safest place for a woman to deliver her baby                                      |            |            |
| At home with family                                                                            | 11 (6.0)   | 172 (94.0) |
| With a traditional birth attendant                                                             | 24 (13.1)  | 159 (86.9) |
| At health facility with skilled health workers                                                 | 163 (89.1) | 20 (10.9)  |
| Planning for delivery and complications during childbirth is important for the mother and baby | 163 (89.1) | 20 (10.9)  |
| Attending antenatal care regularly will help my birth preparedness and complication readiness. | 167 (91.3) | 16 (8.7)   |

**Source:** Survey Fieldwork, 2025

As shown in Table 4.2a and 4.2b above, overall awareness of BP/CR was strong: 79.2% had heard of “birth preparedness” and 67.2% knew “complication readiness.” Health personnel were the dominant information source (66.7%), far exceeding relatives (32.8%), friends (25.7%), or media (27.3%), underscoring the central role of healthcare providers in health education. Practical knowledge translated into action-oriented awareness for many: 71.6% recognized the importance of identifying a skilled birth attendant and 71.0% had already identified one. Logistics were being

planned by most respondents, with 78.7% arranging transport and 82.0% saving for emergencies. Preparedness for clean and safe delivery was particularly high, with 92.9% reporting that essential items had been assembled. Support systems were variably identified: 61.2% had identified people who would support them, most commonly husbands (74.3%), followed by family (42.1%) and self-support (32.8%). Two-thirds (66.7%) knew the importance of identifying a blood donor, although fewer (42.1%) had received written Birth Preparedness and Complication Readiness materials during pregnancy, pointing to an opportunity to expand take-home education. Safety attitudes were favorable: 89.1% identified a health facility with skilled workers as the safest delivery place, and nearly nine in ten agreed that planning for delivery and complications is important (89.1%) and that regular ANC strengthens Birth Preparedness and Complication Readiness (91.3%).

**Table 4.3: Categorical table for the level of knowledge of birth preparedness among primigravida attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State**

| Level of knowledge of birth preparedness          | Mean Knowledge       | Frequency  | Percentage (%) |
|---------------------------------------------------|----------------------|------------|----------------|
| Poor Knowledge                                    | Less than 19.2186    | 86         | 46.9           |
| Good Knowledge                                    | Greater than 19.2186 | 97         | 53.1           |
| <b>Total</b>                                      |                      | <b>183</b> | <b>100</b>     |
| <b>Mean knowledge score range = 0 – 23, n=183</b> |                      |            |                |

**Source:** Survey Fieldwork 2025

### **Categorization of knowledge of birth preparedness among primigravida attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State**

Table 4.3 above illustrates the distribution of knowledge of birth preparedness among primigravida attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State. The assessment consisted of 23 knowledge-based questions, structured in a “Yes” and “No” format. Correct response can either be Yes or No. Correct response attracted 1 point while incorrect response 0 point. The obtainable range is 0 – 23. The results showed a minimum score of 12 and a maximum score of 23, with a mean score of  $19.2186 \pm 1.6479$ . Values above the mean were categorised as good knowledge, while values below the mean were categorised as poor knowledge of birth preparedness among the primigravidas. The table above shows that majority (53.1%) have good knowledge of birth preparedness from Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State.

**Research Question Two:** What is the knowledge of primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State about danger signs?

**Table 4.4: Knowledge of danger signs in pregnancy among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State**

| Items                                                    | Yes        | No        |
|----------------------------------------------------------|------------|-----------|
| Do you know danger signs in pregnancy                    | 147 (80.3) | 36 (19.7) |
| Do you know the following are danger signs of pregnancy? |            |           |
| Severe vaginal bleeding                                  | 155 (84.7) | 28 (15.3) |
| Convulsions                                              | 141 (77.0) | 42 (23.0) |
| High fever                                               | 146 (79.8) | 37 (20.2) |
| Severe abdominal pain                                    | 144 (78.7) | 39 (21.3) |
| Swollen face, ankle and feet                             | 152 (83.1) | 31 (16.9) |

|                                                             |            |            |
|-------------------------------------------------------------|------------|------------|
| Headache with blurred vision                                | 148 (80.9) | 35 (19.1)  |
| Reduced or no fetal movement                                | 146 (79.8) | 37 (20.2)  |
| Draining of liquor                                          | 134 (73.2) | 49 (26.8)  |
| Foul smelling vaginal discharge                             | 140 (76.5) | 43 (23.5)  |
| Excessive vomiting                                          | 141 (77.0) | 42 (23.0)  |
| Difficulty in breathing                                     | 139 (76.0) | 44 (24.0)  |
| What should you do if you notice any of these danger signs? |            |            |
| Wait and see if it improves                                 | 28(15.3)   | 155(84.7)  |
| Go immediately to health facility                           | 163 (89.1) | 20 (10.9)  |
| Call a traditional healer                                   | 23 (12.6)  | 160 (87.4) |
| Take herbal medicine                                        | 23 (12.6)  | 160 (87.4) |

**Source:** Survey Fieldwork, 2025

Table 4.4 above indicates that 80.3% reported knowing danger signs in pregnancy, with high recognition of key life-threatening symptoms: severe vaginal bleeding (84.7%), swollen face/ankle/feet suggestive of preeclampsia (83.1%), headache with blurred vision (80.9%), high fever (79.8%), severe abdominal pain (78.7%), reduced/no fetal movement (79.8%), convulsions (77.0%), excessive vomiting (77.0%), and difficulty breathing (76.0%). Recognition was comparatively lower—but still substantial—for draining of liquor (73.2%) and foul-smelling discharge (76.5%). Crucially, intended help-seeking behaviors were appropriate: 89.1% said they would go immediately to a health facility upon noticing danger signs, while far fewer would wait to see if symptoms improve (15.3%) or use traditional remedies (12.6%). Interestingly, majority (84.7%) would wait to see if symptoms improve, and exactly 160 (87.4%) respondents opted to call a traditional or take herbal medicine.

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**Table 4.5: Categorical table for the level of Knowledge of danger signs in pregnancy among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State**

| Level of Knowledge of danger signs                | Mean Knowledge       | Frequency  | Percentage (%) |
|---------------------------------------------------|----------------------|------------|----------------|
| Poor Knowledge                                    | Less than 14.4945    | 58         | 31.7           |
| Good Knowledge                                    | Greater than 14.4945 | 125        | 68.3           |
| <b>Total</b>                                      |                      | <b>183</b> | <b>100</b>     |
| <b>Mean knowledge score range = 0 – 16, n=183</b> |                      |            |                |

**Source:** Survey Fieldwork 2025

**Categorization of Knowledge of danger signs in pregnancy among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State**

Table 4.5 above illustrates the distribution of Knowledge of danger signs in pregnancy among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State. The assessment consisted of 16 knowledge-based questions on table 4.2.2, structured in a “Yes” and “No” format. Correct response attracted 1 point while incorrect response 0 point. The obtainable range is 0 – 16. The results showed a minimum score of 9 and a maximum score of 16, with a mean score of  $14.4945 \pm 1.9158$ . Values above the mean were categorized as good knowledge, while values below the mean were categorized as poor knowledge of danger signs in pregnancy. The table above shows that majority (68.3%) of the women shows good knowledge of danger signs in pregnancy.

**Research Question Three:** What is the level of practice of birth preparedness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State?

**Table 4.6 Practice of birth preparedness among Primigravida attending Adeoyo Maternity Hospital.**

| Item                                                                                       | Yes<br>N(%) | No<br>N(%) |
|--------------------------------------------------------------------------------------------|-------------|------------|
| I am aware of my expected date of delivery                                                 | 152 (83.1%) | 31 (16.9%) |
| I have bought all the items required for delivery                                          | 171 (93.4%) | 12 (6.6%)  |
| I am aware that labor may begin before the expected due date                               | 166 (90.7%) | 17 (9.3%)  |
| I have identified the facility/hospital where I will deliver                               | 168 (91.8%) | 15 (8.2%)  |
| I have made provisions for transport to the hospital on the day of labor                   | 153 (83.6%) | 30 (16.4%) |
| I have made funds available to cover hospital bills and other related expenses             | 165 (90.2%) | 18 (9.8%)  |
| Identifying a birth companion to support me during labor and delivery is very necessary    | 171 (93.4%) | 12 (6.6%)  |
| I plan to attend at least 5 antenatal clinic visits                                        | 148 (80.8%) | 35 (19.2%) |
| I have the plan to identify the mode of transportation to the place of childbirth/hospital | 165 (90.2%) | 18 (9.8%)  |
| I have the plan to deliver in the hospital                                                 | 174 (95.1%) | 9 (4.9%)   |
| I plan to yield to midwives' advice during delivery if complication develops               | 165 (90.1%) | 18 (9.9%)  |

**Source:** Survey Fieldwork 2025

Practice indicators in Table 4.6 above align well with knowledge. Most respondents reported concrete preparatory steps: awareness of expected date of delivery (83.1% agree/strongly agree), purchase of required delivery items (93.5%), and identification of delivery facility (91.8%). Transport arrangements were widely reported (83.6%), and financial planning was common (90.2%). Social support planning was also strong:

93.4% agreed it is necessary to identify a birth companion. Care-seeking intentions were robust: 95.1% planned hospital delivery.

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**Research Question Four:** What is the level of complications readiness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State?

**Table 4.7: The level of complications readiness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State.**

| Items                                                                                | YES<br>N(%) | NO<br>N(%) |
|--------------------------------------------------------------------------------------|-------------|------------|
| I have made emergency plans in case labor starts unexpectedly.                       | 144 (78.7%) | 39 (21.3%) |
| I have made additional transport plans in case of emergency.                         | 126 (68.9%) | 57 (31.1%) |
| I plan to save money for child birth and complications in pregnancy                  | 164 (89.7%) | 19 (10.3%) |
| If normal delivery fails, I will consent to instrumental delivery/ caesarean section | 135 (73.8%) | 48 (26.2%) |
| Cultural/family belief make it difficult to prepare for birth complications          | 97 (53.0%)  | 86 (47.0%) |
| I will arrange for blood donor in case of emergency                                  | 129 (70.5%) | 54 (29.5%) |

**Source:** Survey Fieldwork 2025

Table 4.7 above shows that most anticipated that labor can start before the due date (90.7%), and a substantial percentage of the respondents (78.7%) agreed they had made emergency plans, while 68.9% had additional transport plans for emergencies. Majority (90.1%) intended to heed midwives' advice during complications, and 73.8% would consent to instrumental delivery or caesarean section if needed, though a notable minority remained undecided or disagreeing on operative interventions.

Cultural or family beliefs were mixed in their impact (about half neutral or disagree that these beliefs impede preparedness), and 70.5% intended to arrange a blood donor, suggesting room for further encouragement on this lifesaving step.

**Table 4.8:**  
**Summary table of practice of birth preparedness and complications readiness among Primigravida attending Adeoyo Maternity Hospital.**

| Practice of birth and complications readiness    | Mean Practice        | Frequency  | Percentage (%) |
|--------------------------------------------------|----------------------|------------|----------------|
| Poor Practices                                   | Less than 71.0383    | 80         | 43.8           |
| Good Practices                                   | Greater than 71.0383 | 103        | 56.2           |
| <b>Total</b>                                     |                      | <b>183</b> | <b>100</b>     |
| <b>Mean Practice score range = 1 – 85, n=183</b> |                      |            |                |

**Source:** Survey Fieldwork 2025

Distribution of practice of birth preparedness and complications readiness among Primigravida attending Adeoyo Maternity Hospital,

Table 4.8 above illustrates the distribution of practice of birth preparedness and complications readiness among Primigravida attending Adeoyo Maternity Hospital.

The assessment consisted of 17 practice-based questions on table 4.6, measured by

Yes or No responses. Yes is scored as 1, while No is scored as 0. The obtainable score ranges from 0-17. The result of analysis shows that the minimum and maximum score is 2 and 17 respectively, with a mean score of  $13.0253 \pm 2.6065$ . Values above the mean were categorized as good practices, while values below the mean were categorized as poor birth preparedness and complication readiness. The table above shows that slightly above majority (56.2%) of the women shows good practice of birth preparedness and complications readiness among Primigravida attending Adeoyo Maternity Hospital.

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#### 4.2.2 Hypotheses

**Null Hypothesis One (Ho<sub>1</sub>):** There is no significant association between knowledge and practice of birth preparedness and complication readiness.

**Table 4.9: Chi-square table showing significant association between knowledge and practice of birth preparedness and complication readiness.**

| Knowledge of birth danger signs | Practices of birth preparedness and complication readiness |                | Chi-square | df | p-value | Remark      | Decision       |
|---------------------------------|------------------------------------------------------------|----------------|------------|----|---------|-------------|----------------|
|                                 | Poor Practices                                             | Good Practices |            |    |         |             |                |
| Good knowledge                  | 44                                                         | 81             | 11.624     | 1  | 0.001   | Significant | Ho is rejected |
| Poor Knowledge                  | 36                                                         | 22             |            |    |         |             |                |
| <b>Total</b>                    | <b>80</b>                                                  | <b>103</b>     |            |    |         |             |                |

**Source:** Survey Fieldwork 2025

Consequently, the chi-square test shows a significant association between knowledge and practice of birth preparedness and complication readiness ( $\chi^2=11.624$ ,  $df=1$ ,  $p=0.001$ ). Thus, the null hypothesis is rejected. Women with good knowledge were

more likely to report good practices (81/125) than those with poor knowledge (22/58), indicating that better knowledge aligns with better preparedness behaviors.

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**Null Hypothesis Two (Ho<sub>2</sub>):** There is no significant association between sociodemographic variables (age, educational level, and religion) and knowledge of birth Preparedness among Primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State.

**Table 4.10: Chi-square table significant relationship between sociodemographic variables (age, educational level, and religion) and knowledge of birth Preparedness**

| Socio-demographic characteristic | Knowledge of birth preparedness and complication readiness |                | Chi-square | df | p-value | Remark          | Decision                 |
|----------------------------------|------------------------------------------------------------|----------------|------------|----|---------|-----------------|--------------------------|
|                                  | Poor knowledge                                             | Good knowledge |            |    |         |                 |                          |
| Age                              |                                                            |                |            |    |         |                 |                          |
| ≤ 20                             | 6                                                          | 2              |            |    |         |                 |                          |
| 21-30                            | 50                                                         | 54             |            |    |         |                 |                          |
| 31-40                            | 30                                                         | 40             | 4.150      | 3  | 0.246   | Not Significant | Ho failed to be rejected |
| > 40                             | 1                                                          | 0              |            |    |         |                 |                          |
| Total                            | 87                                                         | 96             |            |    |         |                 |                          |
| Level of Education               |                                                            |                |            |    |         |                 |                          |
| Primary                          | 3                                                          | 6              |            |    |         |                 |                          |
| Secondary                        | 40                                                         | 44             | 0.795      | 3  | 0.851   | Not Significant | Ho failed to be rejected |
| Tertiary                         | 43                                                         | 45             |            |    |         |                 |                          |
| No Formal Edu                    | 1                                                          | 1              |            |    |         |                 |                          |
| Total                            | 87                                                         | 96             |            |    |         |                 |                          |
| Religion                         |                                                            |                |            |    |         |                 |                          |
| Christianity                     | 43                                                         | 57             |            |    |         |                 |                          |
| Islam                            | 44                                                         | 38             | 2.964      | 2  | 0.227   | Not Significant | Ho failed to be rejected |
| Other                            | 0                                                          | 1              |            |    |         |                 |                          |
| Total                            | 87                                                         | 96             |            |    |         |                 |                          |

**Source:** Survey Fieldwork, 2025

Invariably, none of the socio-demographic variables across board showed a significant association with knowledge of birth preparedness: age ( $\chi^2=4.150$ ,  $df=3$ ,  $p=0.246$ ), level of education ( $\chi^2=0.795$ ,  $df=3$ ,  $p=0.851$ ), or religion ( $\chi^2=2.964$ ,  $df=2$ ,  $p=0.227$ ). The null hypothesis therefore stands: within this sample of primigravidae,

knowledge levels did not differ meaningfully by age group, educational attainment, or religious affiliation.

**Null Hypothesis Three (H<sub>03</sub>):** There is no significant association between availability of social support and the level of birth preparedness and complication readiness among primigravida.

**Table 4.11: Pearson Product Moment Correlation Coefficient (PPMC) Analysis showing significant relationship between availability of social support and the level of birth preparedness and complication readiness.**

|                                                              |                     | Practices | Remark                        |
|--------------------------------------------------------------|---------------------|-----------|-------------------------------|
| Social Support                                               | Pearson Correlation | .678**    | Moderate positive correlation |
|                                                              | Sig. (2-tailed)     | .000      | Significant association       |
|                                                              | N                   | 183       |                               |
| **. Correlation is significant at the 0.01 level (2-tailed). |                     |           |                               |

Therefore, the Pearson Product Moment Correlation Coefficient result shows a correlation value of  $r = 0.678$  with a p-value of 0.000, indicating a moderate positive and statistically significant relationship between social support and birth preparedness/complication readiness. This implies that higher availability of social support is associated with better birth preparedness practices. Since the p-value is less than 0.01, the null hypothesis is rejected, confirming a significant association between social support and the level of birth preparedness and complication readiness among primigravida.

**Null Hypothesis Four H<sub>04</sub>:** There is no significant association between the factors influencing the practice of Birth preparedness and complications readiness among primigravid women attending Adeoyo Maternity Teaching Hospital, Oyo State

**Table 4.12: Regression analysis showing factors Influencing the practice of Birth preparedness and complication (BP/CR) among primigravidae**

| Variables                                       | Yes<br>N(%) | No<br>N(%)  | CI          |             | Adjust<br>ed Odd<br>ratio | P-<br>value |
|-------------------------------------------------|-------------|-------------|-------------|-------------|---------------------------|-------------|
|                                                 |             |             | Lower<br>CI | Upper<br>CI |                           |             |
| Level of education                              | 153 (83.6%) | 30 (16.4%)  | -.277       | 2.073       | .998                      | .133        |
| Marital status                                  | 104 (56.8%) | 79 (43.2%)  | .179        | 2.061       | 1.331                     | .020        |
| Husband's or partner's<br>support               | 169 (92.4%) | 14 (7.6%)   | -.799       | 2.685       | 1.158                     | .287        |
| Financial constraints                           | 102 (55.8%) | 81 (44.2%)  | -.982       | .979        | .846                      | .998        |
| Cultural beliefs                                | 83 (45.4%)  | 100 (54.6%) | -1.208      | 1.016       | .820                      | .864        |
| Reliable transportation to<br>a health facility | 153 (83.6%) | 30 (16.4%)  | 1.023       | 3.268       | 1.455                     | .000        |
| Distance to the nearest<br>health facility      | 108 (59.0%) | 75 (41.0%)  | .034        | 2.048       | 1.438                     | .043        |
| Knowledge of danger<br>signs of pregnancy       | 161 (88.0%) | 22 (12.0%)  | .433        | 2.954       | 1.646                     | .009        |
| Nature of Job                                   | 64 (35.0%)  | 119 (65.0%) | -.978       | 1.118       | .997                      | .895        |
| Preparing for delivery                          | 165 (90.2%) | 18 (9.8%)   | .529        | 3.210       | 1.596                     | .007        |
| Nurses' and doctors'<br>attitude                | 91 (49.7%)  | 92 (50.3%)  | -1.456      | .429        | .874                      | .284        |

**Source:** Survey Fieldwork, 2025

The regression analysis examined the factors influencing the practice of birth preparedness and complication readiness (BP/CR) among primigravid women. The finding shows that several variables demonstrated statistically significant relationships with BP/CR. Marital status (AOR = 1.331,  $p = 0.020$ ) was significantly associated with BP/CR, indicating that married women were more likely to practice birth preparedness compared to their unmarried counterparts. Reliable transportation to a health facility also showed a strong significant association (AOR = 1.455,  $p = 0.000$ ),

suggesting that women with access to dependable transport engaged more in BP/CR practices. Distance to the nearest health facility (AOR = 1.438,  $p = 0.043$ ) was another significant predictor, implying that women living closer to health facilities had better BP/CR uptake. Knowledge of danger signs of pregnancy was equally significant (AOR = 1.646,  $p = 0.009$ ), highlighting the importance of awareness in promoting preparedness. Additionally, preparing for delivery itself was significantly associated with BP/CR (AOR = 1.596,  $p = 0.007$ ), showing that women who actively make delivery plans tend to practice BP/CR more.

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### 4.3 Discussion of Findings

This study's characteristic fits the study well: mostly young, married, educated primigravidae in later pregnancy who are actively attending antenatal care—an ideal context for counseling to influence real birth-preparedness. These characteristics align with past studies linking education and partner support to better knowledge of danger signs and stronger planning, which helps explain the favorable preparedness and care-seeking patterns observed

Findings on research question one regarding the level of knowledge of birth preparedness and complication readiness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State revealed that primigravid women generally demonstrated good knowledge of birth preparedness and complication readiness: awareness of the concepts was widespread, and knowledge translated into practical, action-oriented understanding. Many respondents knew the term “birth preparedness,” were familiar with “complication readiness,” and — crucially — identified the key steps that make preparedness meaningful in real life, such as choosing a health facility with skilled workers, identifying a skilled attendant, arranging transport, saving funds, assembling essential delivery items, and lining up social support. Health workers were the primary source of information, far outstripping friends, relatives, or the media—an important signal that facility-based education is reaching first-time mothers.

Placed against the literature, these patterns of knowledge align with the insistence that well-prepared pregnant women “know what is normal or abnormal” and are therefore positioned to experience the hopes and joys of pregnancy more safely, rather than being among those whose outcomes are marred by preventable complications due to lack of knowledge or preparedness<sup>1,2,3</sup>. The centrality of providers in the current

cohort echoes global calls to strengthen the presence and voice of skilled attendants during routine care, precisely because maternal risk remains concentrated in low- and middle-income settings where most maternal deaths occur<sup>4,5</sup>. That many women in this study had already taken practical steps (for example, identifying a delivery facility, preparing supplies, and planning transport and savings) resonates with reports that birth-prepared women are more likely to use skilled care and emergency services when needed; community-oriented preparedness interventions have likewise been shown to raise the use of emergency obstetric care and stimulate local support systems <sup>6,7,8</sup>. The implication is straightforward: provider-led counseling during antenatal visits can be converted into concrete household plans that shorten decision and transport delays if complications arise.

At the same time, the study's strong knowledge base coexists with recognizable gaps. Fewer women reported receiving written take-home materials on birth preparedness and complication readiness, and identification of a prospective blood donor lagged behind other elements. These soft spots mirror broader literature documenting that preparedness remains inconsistent in many settings—sometimes strikingly low—and that younger age, low education, rural residence, and poor antenatal service use are associated with poorer preparation <sup>9,10,11,12,13</sup>. The implication here is twofold: first, printed or digital reminders can reinforce messages delivered in the clinic; second, systematic promotion of blood-donor identification should be incorporated into routine counseling, especially for adolescents and women with fewer years of schooling, who are repeatedly shown to be less prepared <sup>14,15</sup>. In short, the current findings agree with past evidence that knowledge cultivated through skilled providers is the backbone of preparedness, but they also underscore the continuing need to

institutionalize the “last-mile” elements—blood readiness, written plans, and family engagement—that close the gap between knowing and acting <sup>6,7,8</sup>.

Findings on research question two regarding the level of knowledge of primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan Oyo State about danger signs, revealed that a clear majority knew the principal danger signs of pregnancy, with strong recognition of life-threatening symptoms such as heavy vaginal bleeding, swollen face or feet suggestive of preeclampsia, headache with blurred vision, high fever, severe abdominal pain, reduced or absent fetal movement, convulsions, excessive vomiting, difficulty breathing, and warning signs around fluid or foul discharge. Importantly, most women indicated they would seek immediate care at a health facility if any danger sign appeared, rather than delay or rely on traditional remedies. This pattern reflects not only awareness but also appropriate intended action. These results are consonant with standard classifications of key obstetric danger signs during pregnancy, labor, and the postpartum period, and with global recommendations—such as those emphasized by the United Nations Children’s Fund—that raising women’s awareness improves early detection and shortens delays in deciding to seek care <sup>4,15</sup>. The present study’s strong recognition of multiple danger signs supports evidence that knowledge of several key signs is associated with greater likelihood of using skilled care and with stronger birth preparedness and complication readiness overall <sup>16,17</sup>. Although some studies report low levels of awareness across pregnancy, childbirth, and postpartum, others have documented high knowledge of at least one danger sign; the current findings fit closer to this latter pattern, particularly in the breadth of symptoms recognized and the readiness to seek facility-based help <sup>17,18,19,20,21</sup>. The implication is encouraging: first-time mothers, when effectively counseled, can internalize a comprehensive symptom set and pair that knowledge with

appropriate care-seeking intentions—conditions that have been linked to higher uptake of skilled attendance and emergency care when complications occur <sup>18</sup>. Continued reinforcement through antenatal counseling and culturally sensitive community messaging should sustain these gains and guard against the minority tendency to wait or self-manage severe symptoms, which the literature associates with preventable morbidity and mortality <sup>16,17,18,19,20</sup>.

Findings on research question three regarding the level of practice of birth preparedness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State, revealed that practice in this study generally kept pace with knowledge. Most women had identified where they would deliver and who would attend, anticipated that labor might begin before the expected date, bought required delivery items, arranged transport, and set aside funds. The overall pattern dovetails with a broad literature linking health-seeking behavior to utilization of skilled services and showing that education, age-related experience, and family dynamics shape preparedness behaviors<sup>21,22,23</sup>. By contrast, research from some settings has described markedly some weaker practice—few women identifying skilled providers or government facilities, minimal transport planning, and a prevailing preference for home delivery—denotes that the favorable patterns seen in Adeoyo are not entirely guaranteed elsewhere and should be actively protected and scaled<sup>13,17</sup>. The implication is simply practical. Education during antenatal visits appears to be translating into tangible household preparations, of which past studies associate with higher use of skilled birth attendants and timelier emergency care<sup>23,24,25</sup>.

Findings on research question four regarding the level of complications readiness among primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State, revealed that many had thought through the social side of complication

readiness by identifying a birth companion and discussing the possibility of instrumental or operative delivery if clinically indicated. Where practice lagged, it tended to concern contingency planning—especially secondary transport arrangements and fully articulated emergency plans—suggesting that “Plan A” is widespread while “Plan B” is still maturing. The wide embrace of facility delivery, transport planning, and financial readiness in view of complications in this current study is in line with past studies<sup>25,27,28</sup> where arranging transport and saving money were strongly correlated with institutional birth and complication prevention, particularly in public facilities<sup>25</sup>.

These findings imply that respectful counseling that demystifies assisted delivery can reduce fear without dismissing community values<sup>27,28,29</sup>. Moreover, strengthening explicit contingency steps—such as named alternate drivers, after-hours plans, or rapid blood-donor mobilization—would convert already good practice into comprehensive readiness, a shift repeatedly tied to safer outcomes<sup>23,34,25</sup>.

With regards to significant relationship between knowledge and practice of birth preparedness and complication readiness; finding revealed that the first hypothesis was not supported: knowledge and practice of birth preparedness and complication readiness were significantly associated in this cohort, with women who demonstrated stronger knowledge also exhibiting stronger practice. This pattern is consistent with prior evidence that women who understand core concepts of preparedness and recognize danger signs are more likely to plan proactively, use skilled birth attendants, and access emergency obstetric care when needed<sup>6,7,18</sup>. Community-oriented preparedness efforts have likewise increased use of emergency services and mobilized support systems, underscoring how knowledge can translate into action when messages are reinforced by providers and local networks<sup>8</sup>. Given the study setting,

where health workers were primary information sources, the finding strengthens the case for provider-led antenatal counseling as the cornerstone for converting awareness into the concrete steps—facility selection, transport planning, savings, and blood readiness—that reduce delays across the care pathway <sup>7,8</sup>.

Again findings on significant relationship between sociodemographic variables (age, educational level, and religion) and knowledge of birth Preparedness among Primigravidae attending Adeoyo Maternity Teaching Hospital, Ibadan, Oyo State revealed that by contrast, the second hypothesis was retained: age, educational level, and religion were not significantly related to knowledge of birth preparedness in this sample. This diverges from studies that typically find higher education and, at times, maternal age to be positive correlates of knowledge and preparedness, with low schooling repeatedly linked to poor preparation, especially in rural or underserved contexts <sup>12'13'16'24'26</sup>. The most plausible explanation is contextual: the cohort was relatively homogeneous—predominantly young adults, overwhelmingly married, and with high levels of secondary and tertiary education—conditions that may level differences ordinarily seen across wider socioeconomic or age gradients. In addition, consistent exposure to antenatal care and provider messaging can compress variance in knowledge across demographic groups, blunting the effect of factors (such as religion) that sometimes shape perceptions and care-seeking in more heterogeneous or less engaged populations <sup>29'27'28</sup>. The implication is not that sociodemographic influences are irrelevant, but that strong, routine, clinic-based education can mitigate their impact on knowledge within a relatively advantaged antenatal population <sup>18'24</sup>.

Further, significant relationship between availability of social support and the level of birth preparedness and complication readiness among primigravidae revealed that the null hypothesis was rejected following the PPMC analysis conducted in this current

study. Availability of social support showed a positive and statistically significant relationship with practice of birth preparedness and complication readiness. This accords with evidence that partner involvement and joint decision-making are associated with greater use of skilled attendants and that shorter decision and transport delays occur when spouses and families are mobilized in advance <sup>21,23,24,25</sup>. It also aligns with reports that community-support structures facilitate timely uptake of emergency obstetric services, effectively bridging the gap between knowing and doing when complications arise <sup>8</sup>. In settings where tradition and religious practices can delay facility care, social support (especially from husbands and close family) can counterbalance such pressures when coupled with respectful, provider-led counseling <sup>29,27,28</sup>. Programmatically, these findings argue for embedding male-involvement strategies and explicit social-support mapping into routine antenatal care, thereby reinforcing the knowledge–practice pathway shown in this study and repeatedly documented in the literature to improve utilization of skilled care <sup>21,23,24,25</sup>.

Lastly findings on significant relationship between the factors influencing the practice of Birth preparedness and complications readiness among primigravid women attending Adeoyo Maternity Teaching Hospital, Oyo State.

The current findings point to a multilevel ecology of preparedness: individual capability (education and knowledge of danger signs), relational support (especially partners), and structural enablers and barriers (money, transport access, distance, and the perceived attitude of health workers). Women widely affirmed that education helped them grasp what to do, that partner support mattered, and that preparation itself is protective. Financial constraints and travel distance remained palpable barriers for a meaningful minority, and mixed experiences with provider attitudes highlighted the continuing need for respectful maternity care.

These drivers and obstacles mirror what the literature describes. Where home birth persists without professional attendants, the World Health Organization's emphasis on skilled providers at every birth reflects the reality that structural barriers—costs, transport, distance—and weak patient-provider communication suppress service use <sup>28</sup>. Studies have shown that when women and partners share decisions, and when travel time is reasonable, the likelihood of skilled attendance rises; conversely, distance and costs depress utilization <sup>21</sup>. Knowledge of danger signs and explicit birth planning have consistently been associated with greater uptake of skilled care in both uncomplicated and emergency situations—precisely the pathway implied by the present cohort's conviction that preparation protects <sup>18</sup>. The mixed influence of cultural beliefs in this study echoes prior evidence that tradition and religion can delay facility care or favor home delivery unless proactively engaged through culturally responsive counseling and male-involvement strategies <sup>29,27,28</sup>.

The implication for practice is to double down on what works locally while closing the remaining gaps. Health-worker-led education should continue to anchor care, but it must be paired with partner-inclusive counseling, respectful communication, and streamlined, low-cost transport plans that blunt the effect of distance and finances. Because perceptions of staff attitude can tip decisions at the margin, routine emphasis on respectful maternity care is not cosmetic—it is instrumental to sustaining the gains in knowledge and practice documented here and to ensuring that first-time mothers can translate intention into safe delivery with skilled attendance <sup>1,18,28</sup>.

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## **Chapter Five**

### **Conclusion**

#### **5.1 Summary of Findings**

This study, conducted among mostly young, married, and educated primigravidae attending antenatal care at Adeoyo Maternity Teaching Hospital in Ibadan, examined birth preparedness and complication readiness (BP/CR) and related determinants. Overall, participants demonstrated strong knowledge of BP/CR concepts and translated that knowledge into practical steps: most had selected a delivery facility and skilled attendant, arranged transport, saved funds, assembled delivery items, and engaged social support. Health workers were the principal source of information, indicating that facility-based counseling effectively reaches first-time mothers. Knowledge of obstetric danger signs was similarly high—spanning heavy bleeding, hypertensive symptoms, fever, severe pain, reduced fetal movement, convulsions, excessive vomiting, dyspnea, and abnormal discharge—and most women reported intending to seek immediate facility-based care should these arise.

Despite these strengths, notable gaps persisted at the “last mile.” Fewer women received written take-home plans, identification of a prospective blood donor lagged, and contingency planning (backup transport and fully articulated emergency plans) was less consistent—suggesting that while “Plan A” was common, “Plan B” required reinforcement. The analysis of influencing factors showed a multilevel landscape: individual capability (education and danger-sign knowledge), relational support (especially partners), and structural conditions (finances, transport access, distance, and perceived provider attitude). Respectful maternity care emerged as pivotal, with women’s experiences of provider demeanor likely to shape service utilization.

Statistically, knowledge and practice of BP/CR were positively associated, supporting the premise that informed women are more likely to prepare proactively, use skilled attendants, and access emergency obstetric care when needed. In contrast, the usual sociodemographic predictors (age, education level, religion) did not significantly relate to BP/CR knowledge in this sample, plausibly because the cohort was relatively homogeneous and consistently exposed to antenatal counseling that may have leveled differences typically seen in more diverse or underserved populations. Social support showed a positive, significant relationship with BP/CR practice, underscoring the role of partners and families in reducing decision and transport delays and in translating awareness into action.

## **5.2 Conclusion**

In conclusion, among mostly young, married, and educated primigravidae at Adeoyo Maternity Teaching Hospital, provider-led antenatal care has produced high awareness of birth preparedness and danger signs that largely translates into appropriate, practical actions. Knowledge and practice are positively linked, and strong social support further strengthens readiness, while traditional sociodemographic predictors did not significantly influence knowledge within this relatively homogeneous, well-counseled cohort. Remaining gaps—limited take-home plans, inconsistent identification of prospective blood donors, and incomplete contingency arrangements—show where “last-mile” efforts must focus. Sustained respectful maternity care, deliberate partner engagement, and the routine institutionalization of written or digital BP/CR plans, transport and blood-readiness steps, and clear escalation pathways will consolidate current gains and reduce preventable delays. Scaling these measures across similar settings, alongside pragmatic evaluations of low-cost reinforcements (e.g., SMS reminders and male-

involvement strategies), offers a practical route to safer deliveries and improved maternal–newborn outcomes.

### **5.3 Recommendations**

Based on the findings of this study on, the following recommendations were made on:

1. Strengthen Health Worker-Led antenatal education by making birth preparedness discussion a mandatory component in each antenatal visit, emphasizing the importance of advance identification of a blood donor.
2. Health care system should develop simple, illustrated take home leaflet, send SMS reminders reinforcing BCPR components in a language they will understand, especially the low literacy ones among the primigravidae.
3. Health care workers should create an enabling environment for the pregnant women, reduce delays by improving on waiting time in the hospital.
4. Community engagement should be ensured by mobilising traditional and religious leaders to promote facility – based delivery and supportive male involvement during ANC.
5. Government should make provision for mobile clinics in strategic places in the community in case of emergency care.
6. Policy makers should integrate partner inclusive - counselling into antenatal care, this will encourage joint ANC attendance thus improving partner support which will help in decision making in seeking care early.
7. Mass media should create more awareness on practice of birth preparedness and complication readiness on the radio, television, social media .This will be another source of information not just from health workers alone

### **5.4 Contribution to Knowledge**

Drawing on the study's findings, the contribution for nursing practice are to formalize antenatal counseling so that it reliably converts knowledge into concrete household action. Every primigravida should leave each ANC visit with a living BP/CR plan that specifies the chosen facility and skilled attendant, primary and backup transport, earmarked funds, assembled delivery items, and a named prospective blood donor, with these elements documented in the record and revisited at subsequent visits. Attention must shift from a single "Plan A" to explicit contingency steps—after-hours arrangements, alternate drivers, secondary facilities if diversion occurs, and rapid blood-mobilization pathways—because such last-mile details are where otherwise good preparation tends to fail. Respectful maternity care should be treated as a core clinical intervention rather than a courtesy; provider demeanor, privacy, consent, and non-discrimination measurably influence whether women act on their plans and return for care. Given the demonstrated value of partner involvement, services should invite and structure family participation through couple-friendly appointment slots and brief "partner minutes" during routine visits to clarify who decides, who pays, who drives, and who can donate blood. Even though sociodemographic variables did not predict knowledge in this relatively homogeneous cohort, selective intensification remains prudent for adolescents, women with less formal education, and those living at a distance, for whom additional counseling touch points, transport linkages, or cost-mitigation mechanisms may be decisive. Finally, danger-sign recognition should be reinforced through teach-back at each visit, and facilities should track a small set of practice indicators—completion of BP/CR elements, presence of backup transport and a named donor, receipt of written or SMS plans, danger-sign recall, and partner engagement—to drive continuous quality improvement.

For nursing education, the curriculum should embed a BP/CR competency that is assessed not only on knowledge but also on the ability to elicit, negotiate, and document actionable plans with women and their partners. Simulation and OSCEs ought to include counseling that culminates in a completed checklist, use of teach-back for danger signs, and skilled, culturally sensitive conversations that address fears around assisted or operative delivery. Students should learn to craft and deploy low-literacy handouts and concise digital messages, producing locally adapted materials as part of coursework. Because the study underscores how provider behavior shapes utilization, respectful maternity care and cultural humility should thread through maternal-newborn modules, with debriefs that focus on communication, consent, and bias reduction. Education should also train students in basic data use for improvement—collecting the practice indicators above, plotting trends, and running small PDSA cycles—so that new graduates are prepared to close observed gaps between knowing and doing. Finally, drills that rehearse emergency referral activation, advance notice to receiving facilities, and donor mobilization will help students translate classroom knowledge into timely, coordinated action.

Contributions to nursing research center on testing bundles that close the observed “last-mile” gaps. Implementation studies in this setting could compare standard counseling with enhancements such as written take-home plans, SMS reminders, structured partner sessions, and routine donor identification to determine which combination most effectively accelerates timely care-seeking and facility delivery. Given the influence of social support, trials of male-involvement strategies—weekend couple classes, invitation messages, or partner-focused micro-sessions within ANC—should measure effects on BP/CR completion and delay reduction. Blood readiness warrants dedicated inquiry, including feasibility and outcomes of prospective donor

registries, blood typing at ANC, or “buddy donor” schemes linked to the hospital. Because perceptions of provider attitude affect utilization, studies should evaluate whether respectful-care training paired with feedback changes patient experience and the use of skilled services. Digital reinforcement via low-cost SMS or WhatsApp nudges is ripe for pragmatic evaluation, with attention to adherence, acceptability, and cost-effectiveness. To strengthen external validity, replication in more heterogeneous or rural populations can test whether robust, routine ANC messaging consistently attenuates sociodemographic disparities in knowledge and practice. Across all inquiries, core outcomes should include the proportion of completed BP/CR components, time from danger-sign onset to facility arrival, facility-delivery rates, emergency obstetric care uptake, maternal and neonatal outcomes, and patient-reported experience, measured longitudinally from ANC enrollment through postpartum.

### **5.5 Suggestion for Further Studies**

Further studies can be conducted in a multi-site, longitudinal mixed-methods study that follows women from ANC through postpartum across diverse settings (urban and rural), objectively verifies birth preparedness and complication readiness components (including documented blood-donor identification and backup transport).

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## Appendix

### Questionnaire

#### Informed Consent Form

I am Olanike Fehintola ADEBIMPE, a postgraduate student of Department of Nursing Science, Lead City University. Ibadan.

You are invited to participate in a research study aimed at assessing the factors that influence the practice of birth preparedness and complication readiness (BPCR) among first-time pregnant women (primigravida) attending antenatal clinics at Adeoyo Maternity Hospital, Yemetu, Ibadan. BPCR is a critical component of

maternal health care that involves planning for normal birth and anticipating actions in case of complications.

The information collected will help provide insight into the level of awareness, practices among primigravida in preparing for childbirth, and will also inform strategies to strengthen maternal health services and reduce maternal and newborn complications.

The questionnaire contains structured questions and is expected to take about 15–20 minutes to complete. Participation is completely voluntary, and there are no penalties or consequences for choosing not to participate. All responses will be treated with strict confidentiality and used solely for academic and policy improvement purposes. There are no right or wrong answers—we are only interested in your honest views and experiences.

Your contribution is very important and greatly appreciated.

Thank you.

Olanike F. Adebimpe.

Telephone No: 08032611741

Participant's Signature: ..... Date:.....

#### **SECTION A: Socio – demographic characteristics.**

**Kindly tick ( ) or fill in the space provided in the statements below;**

1. Age at last birthday: \_\_\_\_\_
2. Religion: Christianity ( ) Islam ( ) Other (Specify) \_\_\_\_\_
3. Ethnicity: Yoruba ( ) Igbo ( ) Hausa ( ) Other (Specify) \_\_\_\_\_
4. Educational level: Primary level ( ) Secondary level ( ) Tertiary level ( )  
No formal ( )
5. Marital status: Married ( ) Divorce ( ) Widowed ( ) Separated ( ) Single ( )
6. Monthly income? \_\_\_\_\_

7. Occupation: Civil servant ( ) Trader ( ) Students ( ) House wife( ) Others.....
8. Gestational age: .....
9. Parity.....
10. Number of previous antenatal visit:

### Section B: Knowledge of Birth Preparedness and Complication Readiness

| No. | Questions                                                                                      | Yes | No |
|-----|------------------------------------------------------------------------------------------------|-----|----|
| 1.  | Have you heard about “birth preparedness”                                                      |     |    |
| 2.  | Have you heard about “complication readiness”. Source                                          |     |    |
|     | Health personnel                                                                               |     |    |
|     | Relatives                                                                                      |     |    |
|     | Friends                                                                                        |     |    |
|     | Media                                                                                          |     |    |
| 3.  | Do you know the importance of identifying a skilled birth attendant before delivery            |     |    |
| 4.  | Have you identified a skilled provider                                                         |     |    |
| 5.  | Have you made plan for your transportation means                                               |     |    |
| 6.  | Have you saved money to be used incase of Emergency                                            |     |    |
| 7.  | Have you prepared essential items for clean and safe delivery                                  |     |    |
| 8.  | Have you identified people that will support                                                   |     |    |
|     | Myself                                                                                         |     |    |
|     | Husband                                                                                        |     |    |
|     | Family                                                                                         |     |    |
| 9.  | Do you know the importance of identifying a blood donor in case of Emergency                   |     |    |
| 10. | Have you received any written materials(leaflet/booklet) about BP/CR during pregnancy          |     |    |
| 11. | Do you know that adequately preparing for delivery reduces the risk of complications           |     |    |
| 12. | Where is the safest place for a woman to deliver her baby                                      |     |    |
|     | At home with family                                                                            |     |    |
|     | With a traditional birth attendant                                                             |     |    |
|     | At health facility with skilled health workers                                                 |     |    |
| 13. | Planning for delivery and complications during childbirth is important for the mother and baby |     |    |
| 14. | Attending antenatal care regularly will help my birth preparedness and complication readiness. |     |    |

### Section C: Knowledge of danger signs in pregnancy

| S/N | Questions                                                | Yes | No |
|-----|----------------------------------------------------------|-----|----|
| 1.  | Do you know danger signs in pregnancy                    |     |    |
| 2.  | Do you know the following are danger signs of pregnancy? |     |    |

|    |                                                             |  |  |
|----|-------------------------------------------------------------|--|--|
|    | Severe vaginal bleeding                                     |  |  |
|    | Convulsions                                                 |  |  |
|    | High fever                                                  |  |  |
|    | Severe abdominal pain                                       |  |  |
|    | Swollen face, ankle and feet                                |  |  |
|    | Headache with blurred vision                                |  |  |
|    | Reduced or no fetal movement                                |  |  |
|    | Draining of liquor                                          |  |  |
|    | Foul smelling vaginal discharge                             |  |  |
|    | Excessive vomiting                                          |  |  |
|    | Difficulty in breathing                                     |  |  |
| 3. | What should you do if you notice any of these danger signs? |  |  |
|    | Wait and see if it improves                                 |  |  |
|    | Go immediately to health facility                           |  |  |
|    | Call a traditional healer                                   |  |  |
|    | Take herbal medicine                                        |  |  |

#### Section D: Practice of birth Preparedness and Complication Readiness

| No. | Questions                                                                                                   | Yes | No |
|-----|-------------------------------------------------------------------------------------------------------------|-----|----|
| 1.  | I am aware of my expected date of delivery                                                                  |     |    |
| 2.  | I have bought all the items required for delivery.                                                          |     |    |
| 3.  | I am aware that labor may begin before the expected due date                                                |     |    |
| 5.  | I have identified the facility/hospital where I will deliver.                                               |     |    |
| 6.  | I have made provisions for transport to the hospital on the day of labor (e.g., car, motorcycle, Tricycle). |     |    |
| 7.  | I have made funds available to cover hospital bills and other related expenses.                             |     |    |
| 8.  | Identifying a birth companion to support me during labor and delivery is very necessary                     |     |    |
| 10. | I Plan to attend at least 5 antenatal clinic visits                                                         |     |    |
| 12. | I have the plan to identify the mode of transportation to the place of child birth/hospital                 |     |    |
| 13. | I have the plan to deliver in the hospital                                                                  |     |    |
| 14. | I plan to yield to midwives advice during delivery if complication develops                                 |     |    |

|   | <b>Complication Readiness</b>                                                        |  |  |
|---|--------------------------------------------------------------------------------------|--|--|
| 1 | I have made emergency plans in case labor starts unexpectedly.                       |  |  |
| 2 | I have made additional transport plans in case of emergency.                         |  |  |
| 3 | I plan to save money for child birth and complications in pregnancy                  |  |  |
| 4 | If normal delivery fails, I will consent to instrumental delivery/ caesarean section |  |  |
| 5 | Cultural/family belief make it difficult to prepare for birth complications          |  |  |
| 6 | I will arrange for blood donor in case of emergency                                  |  |  |

**Section E: Factors Influencing the practice of Birth preparedness and complication (BP/CR) among primigravidae**

| <b>No.</b> | <b>Questions</b>                                                                   | <b>Yes</b> | <b>No</b> |
|------------|------------------------------------------------------------------------------------|------------|-----------|
| 1.         | My level of Education has helped me understand the importance of BC/PR             |            |           |
| 2.         | My marital status can affect my compliance to BP/CR                                |            |           |
| 3.         | My husband's or partner's support has encouraged me to prepare for childbirth.     |            |           |
| 4          | Financial constraints limit my ability to practice BP/CR.                          |            |           |
| 5.         | Cultural beliefs in my community influence how I prepare for child birth           |            |           |
| 6.         | I have access to reliable transportation to a health facility.                     |            |           |
| 7.         | The distance to the nearest health facility can affect my BP/CR plans.             |            |           |
| 8.         | My Knowledge of danger signs of pregnancy, labour and after delivery is important. |            |           |
| 9.         | The work that I do may not allow me to practice BP/CR                              |            |           |
| 10.        | I believe preparing for delivery reduces the risk of complications                 |            |           |

|     |                                                                  |  |  |
|-----|------------------------------------------------------------------|--|--|
| 11. | Nurses and doctors attitude can prevent me from practicing BP/CR |  |  |
|-----|------------------------------------------------------------------|--|--|

## BIO-DATA

### PERSONAL DATA:

Full Name Olanike Fehintola  
ADEBIMPE

Date and of Birth: 29th July, 1967

Nationality: Nigerian

Permanent Home Address Plot 6 Block 1 Oluyole Estate Extension  
Apata, Ibadan.

Phone Number: 08032611741

Email:  
olanike.adebimpe2012@gmail.com

Next of Kin: Adebimpe Samuel Adeyinka

Address of Next of Kin: Plot 6 Block 1 Oluyole Estate Extension  
Apata, Ibadan

### B) Educational Background with Dates:

(i) St Georges Primary school Zaria 1973 -  
1976

(ii) CAC Primary School Sango Ibadan  
1976 - 1979

(iii) Oba Akinyele Memorial High Sch. Ibadan 1979 -1984

(iv) School of Midwifery Ouyoro, Ibadan 1986 -

1988

|                                           |      |   |
|-------------------------------------------|------|---|
| (v) School of Nursing Wesley Guild, Ilesa | 1989 | - |
| 1990                                      |      |   |

|                                      |      |   |
|--------------------------------------|------|---|
| (vi) National Open University Ibadan | 2006 | - |
| 2014                                 |      |   |

**C) Work Experience with Dates:**

|                                       |      |   |
|---------------------------------------|------|---|
| (i) Catholic Hospital Oluyoro, Ibadan | 1991 | - |
| 1993                                  |      |   |

|                                       |  |  |
|---------------------------------------|--|--|
| (ii) Ring Road State Hospital, Ibadan |  |  |
| 1993 - 2007                           |  |  |

|                                           |           |  |
|-------------------------------------------|-----------|--|
| (iii) University College Hospital, Ibadan | 2007-Till |  |
| date                                      |           |  |

**D) Awards and Fellowship (1) Award for Best Paediatric Nurse**

**E) Membership of Academic/Professional Bodies**

(i) Nursing and Midwifery Council of Nigeria)

**(F) Publications**

Nil

|                                                  |     |
|--------------------------------------------------|-----|
| <b>(G) Major Conferences attended with dates</b> | Nil |
|--------------------------------------------------|-----|

**H) Names and Addresses of Referees:**

(1) **Adebimpe Samuel**  
[adebimpes061@gmail.com](mailto:adebimpes061@gmail.com)  
07049674866

---

**Date**

---

**Signature**

### **The University Compliance Certification**

This is to certify that this thesis by Olanike Fehintola ADEBIMPE with matriculation number LCU/PG/006513 in the Department of Nursing Science Lead City University, Ibadan is in full compliance with the approved University format and style.

\_\_\_\_\_  
\_\_\_\_\_  
**Name**

**Date**

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