Assessment of Postpartum Depression and Maternal Wellbeing Among Nursing Mothers in Ibadan North Local Government Area, Ibadan, Oyo State

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Certification

This is to certify that Amuda Mariam Abiodun with matriculation number LCU/PG/001944 carried out this research work titled "Assessment of Postpartum Depression and Maternal Wellbeing Among Nursing Mothers in Ibadan North Local Government Area" in the Department of Public Health, Faculty of Public Health, Lead City University, Ibadan, Oyo state, for the award of Master Degree in Public Health (Health Education and Promotion).

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Dedication

This project is dedicated to God Almighty, the most beneficent, the most merciful.

Acknowledgment

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Amuda, Mariam Abiodun

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Abstract

The major purpose of this research is to determine the factors that contribute to postpartum depression among nursing mothers in Ibadan North Local Government Area, Ibadan Oyo State, Nigeria, as well as the association between postpartum depression and maternal wellbeing among nursing mothers.

The study was a facility based cross-sectional design study, aimed at nursing mothers visiting primary health centers in Ibadan North Local Government Area. Using a simple random sampling method 300 consenting nursing mothers were sampled from 5 PHCs. Data were collected using Edinburgh Postnatal Depression Scale (EPDS). The data was analyzed using the chi square approach to determine the association or relationship between postpartum depression and maternal wellbeing, and logistic regression was utilized to identify the significant components.

The respondents' median age was 27.73±4.78 and their ages ranged from 20 to 44.

According to this study, there is no significant correlation between mother wellbeing and postpartum (p value is 0.622), however there is one between ethnic groupings and educational attainment (p value is 0.016),(p value 0.001). Joint delivery arrangements have a strong correlation with postpartum depression prevalence at UOR, with a P value of 0.02 (0.266, 0.893%). There is also a significant association between anxious to be able to cope with the baby at p value 0 (0.128, 0.465%) and the prevalence of postpartum depression.

This study found that the risk factors for postpartum depression were experienced by more than half of the respondents 83%.

Since postpartum depression is frequently ignored and underdiagnosed, postnatal care should place equal emphasis on both physical and emotional health. Investments in successful prevention, diagnosis, and treatment initiatives are needed to identify nursing mothers who require assistance in order to protect the health of both mother and child.

Keywords; postpartum depression, maternal wellbeing, prevalence, nursing mothers
Word count 286

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List of Acronyms

Abbreviation	Meaning
WHO	World Health Organisation
PPD	Postpartum Depression
EPDS	Edinburgh Postpartum Depression Scale
MDG	Millennium Development Goals
BDI	Beck Depression Inventory
GHQ	General Health Questionnaire
SDS	Self–Rating Depression Scale
CESD	Centre for Epidemiological Studies Depression Scale
BPDS	Bromley Postnatal Depression Scale
PDSS	Postpartum Depression Screening Scale
MDD	Major Depressive Disorder
APA	American Psychiatric Association
FMOH	Federal Ministry of Health
PHC	Primary Health Care
NPHCDA	National Primary Health Care Development Agency
PMHC	Primary Mental Health Care
UOR	Unadjusted Odd Ratio

Chapter One

Introduction

1.1 Background of the Study

The term "depression" refers to a mood disorder. It might be characterized as sadness, grief, or rage that interferes with daily tasks. Depression is the most prevalent ailment impacting people among all common mental health illnesses (Healthline.com, major depressive disorder 2021). According to estimates from the World Health Organization in 2004, 10% of the more than 150 million people who suffer from depressive disorders reside in Africa (World Health Organization, The World Health Report 2004). Depressive disorders are the most prevalent among women of reproductive age[1]. Maternal health has emerged as a crucial public health issue and a global challenge since females are more likely than males to experience depression. Postpartum depression, an overwhelming condition that affects a mother's behavior, is the most typical mental health difficulty following childbirth (womensmentalhealth.org 2015 "The Postpartum Period").

A mother who experiences postpartum depression (PPD) after giving birth often does so due to a combination of hormonal changes, psychological adjusting to motherhood, and exhaustion[2]. Other symptoms include social disengagement, trouble bonding with the infant, and feelings of guilt or worthlessness[3].

From one continent to another, a survey of the literature found prevalence rates ranging from 0% to approximately 60% (Halbreich & Karkun) (2006). PPD prevalence has been estimated to be around 20% in lower-middle-income nations based on literature evaluations (Z Wang Mapping global prevalence of depression among postpartum women, 2021). Abiodun (2006) estimated an 18.6% prevalence in a developing society in a similar population to studies done in Nigeria, where 10–30% of women seeking primary care have PPD. Positive associations have been shown between a number of factors, including psychological, biological, and social ones, and PPD. Postpartum depression has also been linked to psychosocial risk factors such a history of depression, a strained marriage, a lack of social support, stressful times or events prior to childbirth, a low social standing, childcare stress, and problems during childbirth[5-6].

Postpartum or "baby" blues, postpartum depression or postpartum no psychotic depression, and postpartum psychosis are the three conditions that fall under the umbrella term "postpartum depression" (Miller, Kroska, & Grekin, 2016). To avoid or reduce its negative effects, postpartum depression must be treated as soon as possible. Postpartum depression expenses can be detrimental to the mother, the child, the family, and society when left untreated[7-8]. According to Beck (2006), a high risk of infanticide or suicide exists among moms who experience postpartum depression or psychosis because they frequently have thoughts of harming themselves or their child. Thus, it is crucial for the health of the mother, child, and family that early screening, identification, and intervention take place. Recognizing the physical and mental health issues that may affect labor, delivery, and the postpartum is one of the development goals specified by the U.S. Department of Health and Human Services (2010) in the Healthy People 2010 objectives. The health and wellness of women and their families have been affected by postpartum depression in the past[9].

The subject of postpartum depression has received a lot of research in recent years. Researchers have previously questioned whether postpartum depression is a condition that is specific to women from Westernized countries. The Edinburgh Postnatal Depression Scale, a widely used tool for identifying postpartum depressive symptoms, has been translated into a wide range of languages and is utilized in a large number of nations outside of the United States. Since then, attention has been drawn to longitudinal research examining depressive symptoms during pregnancy, postpartum depression, and depression in adoptive mothers[10].

Mothers who experience depressive symptoms are known to behave in ways that put their children at higher risk for health problems, which has a detrimental impact on how they parent. It has been well-documented that the adverse effects, which include the impact that a mother's depressed symptoms can have on her infant's early and later development. Evaluations of the effectiveness of numerous professional therapies, such as Cognitive Behavioral Therapy, group therapy techniques, and prescription medications have all been conducted for the treatment of postpartum depression[11]. Research on postpartum depression is extensive. Even though postpartum depression has been better understood and treated recently, research on the disorder's theoretical foundations is still needed. There is no universally accepted theoretical foundation for postpartum depression, according to researchers. It is challenging to make generalizations about the nature and progression of postpartum depression because different frameworks have been put forth in an effort to understand how symptoms emerge after birth (Howell, Mora, Horowitz, & Leventhal, 2005; Ngai & Chan, 2011). This is because these models frequently have different conceptualizations of the etiology of postpartum depression.

In addition, postpartum depression (PPD) is seen as a critical factor in achieving five of the eight MDGs and falls under the maternal mental health diagnosis category according to the WHO (WHO, 2000)[12].

Maternal health is a significant issue for public health. For instance, the WHO published the first worldwide estimate of maternal mortality as early as 1987. Before this time, the dangers of pregnancy and childbirth in undeveloped nations were not widely known (WHO, 1987). The survey also indicated that 500,000 women worldwide pass away each year due to difficulties during pregnancy and childbirth, with 99% of these women living in developing nations (WHO, 1987). The UN Millennium Declaration, which made world leaders vow to caring for their citizens' welfare, was signed in September 2000. There were officially eight international Millennium Development Goals (MDG), each with a distinct target. Three of the eight objectives have a specific focus on maternal mental health (WHO, 2000). This declaration was endorsed by all 191 UN members, including Nigeria (WHO, 2000)[13].

Therefore, the WHO urges governments and international organizations to act right now to address maternal mental health as part of health services (WHO, 2007). Data on the availability of maternal mental health care throughout pregnancy and after delivery are, nevertheless, scarce for Nigeria. In Nigeria, access to mental health care throughout pregnancy and after delivery is limited to urban areas. This has led to reproductive-aged women in rural areas of the nation turning to non-medical settings to seek and receive services, mostly from traditional healers and untrained and unlicensed birth attendants[14].

The WHO chose 2015 as the deadline for member countries to complete all of the MDGs (WHO, 2000). The degree of progress made, significant obstacles encountered, supportive settings, priorities for development aid, and capability for monitoring progress were all taken into consideration when analyzing the MDG in each nation (WHO, 2002). According to the WHO (2014), between 1990 and 2013, the global maternal mortality ratio decreased by 45%,

from 380 to 210 deaths per 100,000 live births. In 2013, about 300,000 women perished worldwide as a result of conditions associated to pregnancy and childbirth. The WHO (2013) reports that Nigeria has achieved very modest progress toward the 2015 MDG target to improve maternal health. In contrast, an evaluation of Nigeria's progress towards attaining the goals revealed mixed outcomes. Nigeria currently has a maternal mortality rate of 350 per 100,000 live births, which is higher than the goal rate of 250 per 100,000 live births (WHO, 2013). In contrast to the goal of 100%, experienced healthcare providers are now present at 53.6% of births, and prenatal coverage (at least one visit) is at 67.7% (WHO, 2013)[15].

As a result, it's critical to concentrate on and do more study on postpartum depression and maternal wellbeing in Nigeria.

1.2 Statement of the Problem

Based on the system of health care delivery and social support accessible to women, PPD prevalence differs from nation to nation. Prevalence levels in northern nations like Germany are estimated to be 3.6%, while in Canada they range from 8.46% to 8.69%. Prevalence rates are substantially greater in low- and middle-income nations in the global south. It can reach 39.4%, for instance, in Bangladesh. It is predicted to be 29% in Nepal. PPD, which is estimated to affect 25% of Ethiopian women, is a big worry for their reproductive health, according to research findings. Nigerian estimates were recorded at 22.4% and 22.9% (Chinawa et al, 2016). PPD ratings vary widely among emerging and sub-Saharan African nations, from 1.9% to 82.1%[16]. PPD in women may be a significant global concern, but there are seldom any obvious deliberate or proactive interventions.

The high prevalence rates are a sign that the issue needs to be addressed in order to provide desirable regard to postpartum women's health around the world so they can care for their newborns. However, there aren't many studies done in this area of the country, thus more research is required in developing nations like Nigeria.

The mother's inability to have a child of the desired gender, marital strife, the husband's lack of support, a lack of a social support system, being a single mother, and other factors, such as the many and diverse factors associated with postnatal depression, such as illnesses in the baby and congenital abnormalities, the presence of physical illness in the new mother, the baby born from an unwanted/unplanned pregnancy, etc., make this more so. demonstrates that the study's importance, particularly in light of its impact on health, cannot be minimized.

Furthermore, the number of research that looked into PPD were created in industrialized nations (Affonso, 2000), and the majority of screening tools for postnatal depression were created and refined within the industrialized Western world[17]. In fact, even when the same screening tool is employed, there is global evidence suggesting the prevalence rates of postnatal depression vary by country. In order to assess postpartum depression and maternal well-being among nursing moms in the emerging nation of Nigeria's Ibadan Oyo state, this research was carried out in Ibadan North Local Government Area.

1.3 Justification of the study

Depression is known to be a prevalent disorder during and after pregnancy and its of importance to public health.

The study of postpartum depression encompasses its qualities, characteristics, and environmental influences, however it hasn't received enough attention to be properly examined. For instance, depressive moms are perceived as being more insecurely tied to particular ethnic backgrounds; they are also more likely to have histories of abuse or to have given birth to unintended or fatherless children.

Pre-existing weaknesses may combine with the mother's social, cultural, societal, background, and environmental circumstances to raise the level of postpartum depression and so influence

the mother's welfare, particularly in the early stages of parenthood. Even if much is unknown, it might be helpful to try to spot pregnant and postpartum women who are depressed.

Future studies should focus on these women as potential targets for early intervention to prevent a variety of negative outcomes for mother, child, and family. These studies should include evidence-based interventions for stress reduction, social support systems, mood regulation treatments like cognitive behavioral therapies, pharmacological treatments, and follow-up care during future pregnancies.

The results of this study will shed light on the incidence of postpartum depression and its risk variables among nursing mothers who attend postnatal care sessions at particular primary health centers in Ibadan's Ibadan North Local Government. The Ministry of Health and Non-Governmental Organizations concerned with the health of women of reproductive age and the general population of women will also benefit from this knowledge in developing intervention strategies to reduce the concerns brought on by the prevalence of postnatal depression.

The study's findings will enable program designers, implementers, and policy makers to take a more comprehensive strategy to the fight against morbidity and death due to postnatal depression. Finally, the study will advance understanding of postnatal depression in nursing moms and serve as a foundation for further investigation in this subject.

1.4 Objectives of the Study

The broad objective of this study is to investigate the effect of postpartum depression on maternal wellbeing among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria. While the specific objectives are:

a) To determine the prevalence of postpartum depression and maternal wellbeing of nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria.

b) To assess the relationship between postpartum depression and maternal wellbeing among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria.

c) To identify the factors associated with postpartum depression among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

1.5 Research Questions

The study addressed the following questions:

i. What is the relationship between postpartum depression and maternal wellbeing among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

ii. What is the prevalence of postpartum depression among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

iii. What are the associated factors militating against the maternal wellbeing among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

1.6 Significance of the Study

The study shall be of great importance to the academies, individuals, and the general publics. It will also be useful to practitioners on the areas of public health study. First and foremost, the study shall give a lot of definitions, explanations and findings that will be of benefits to academics by stating all the critical factors affecting maternal wellbeing which includes postpartum depression and many other health influencing factors in general.

The students, scholars, lecturers, and researchers would also benefit greatly from the findings of the study, most especially science students interested in the further study of public health for the healthy living of the entire population

In addition, the woman either at their prenatal or postnatal stage will benefit immensely from this study since they will have an in-depth understanding of postpartum depression and maternal health.

Furthermore, the practitioners which comprise the doctors, nurses, pharmacists, health workers and others would benefit immensely from all the discussing, findings and reviews derivable from this study.

1.7 Scope of the Study

The study shall focus on the postpartum depression and maternal wellbeing among nursing mothers within Ibadan North Local Government Area, Ibadan Oyo State Nigeria. This research shall be carried out among mothers who attends primary healthcare centers within the research location.

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Chapter Two

Literature Review

2.1 Conceptual Review

2.1.1 Postpartum Depression

A non-psychotic depressive episode that may start or continue into the postnatal period is referred to as postpartum depression (Suri and Altshuler 2009). Due to its detrimental consequences on the health of the mother, child, family, and the community at large, postpartum depression is one of the most difficult postpartum problems (Stewart, & Vigod, 2016)[1]. Postpartum depression is the most prevalent psychiatric mood disorder. According to reports, postpartum depression affects 10% to 22% of new mothers and typically appears 4 weeks after birth. Lack of interest or desire in routine activities, weight gain or loss, lack of appetite, low self-esteem, insomnia or hypersomnia, extreme exhaustion, feelings of guilt, diminished ability to concentrate, and recurrent thoughts of harming the baby or suicide are all possible signs of postpartum depression (Suri & Altshuler, 2009)[2]. Postpartum depression can be diagnosed if a woman experiences five or more of the already noted symptoms for two weeks or longer.

Many of the symptoms of postpartum depression overlap with common emotions felt during the postpartum period, according to Suri and Altshuler. These common occurrences include sleep issues, tiredness, and weight problems[3]. Seyfried and Marcus (2003) noted that some depression scales may have a higher rate of false positives as a result of this overlap. The Edinburgh Postnatal Depression Scale (EPDS) scale has been validated in numerous studies and was found to be quite accurate and simple to administer (Wisner, 2013)[4]. Similar to the baby blues, postpartum depression may have unknown causes. The etiology of postpartum depression has also been studied in relation to biological and psychological variables.

According to Suri and Altshuler (2009), some postpartum moms experience depression as a result of thyroid dysfunction; a connection to changes in the amount of other hormones in the blood has not been established. Furthermore, there hasn't been agreement among experts on a connection to psychosocial issues. Some women are more likely to encounter postpartum depression if they have a history of psychiatric depressive disorders.

More erratic than the connections between postpartum depression and marital strife and a lack of social support is the relationship between postpartum depression and obstetrical problems (Suri & Altshuler, 2009). Women who have postpartum depression are more likely to experience depressive episodes in the future. In general, postpartum depression treatment is similar to that for a major depressive episode unrelated to childbirth (Senecky et al., 2009). However, there are situations when no pharmacological treatment is available to women who may want to not take medication[5].

Postpartum depression (PPD) is a common health issue for new mothers and a significant cause of maternal morbidity and mortality. It has negative impacts on the mother's health as well as the socioemotional and cognitive growth of the kids. Despite being a medical condition that may be treated, it is still severely underrecognized and undertreated in mother and child health (MCH) programs, especially in low- and middle-income nations (LMICs). According to estimates, 7 out of 10 women conceal or minimize their symptoms in the absence of comprehension, encouragement, and care.

The prevalence of PPD in mothers varies greatly around the world, from 0.5% to 60.8%. Although the prevalence is said to be higher in LMICs than in high-income countries, the

majority of PPD studies have been carried out in high-income nations. Future research should be done to understand the nature of women's PPD experience across various cultures in LMICs because the frequency is very diverse between populations and its manifestations may change across cultures. Parity, method of delivery, pregnancy intention, preterm delivery, breastfeeding, and antenatal depression history were revealed to be powerful predictors of PPD in terms of obstetric and baby variables. One of the key factors affecting PPD is access to health services. Utilizing maternity care services, such as prenatal and postnatal care, has an impact on women's depression symptoms and the outcome for the mother's health.

Mothers' physical and mental health are also significantly impacted by interpersonal interactions and social support. In the postpartum period, these particular populations husbands, parents, in-laws, and relatives/friends are close to mothers as social networks. In recent years, online assistance via social media use has replaced or expanded conventional offline support. Social networking services like Facebook have gained enormous popularity in emerging nations. Social media could provide new mothers with psychosocial support since they could get assistance managing their physical and mental health concerns and adjusting to their new responsibilities by using sites like Facebook. Research is required to determine whether social support accessed via social media is linked to PPD in postpartum women.

Furthermore, while postpartum depression affects the family medically, it differs from the maternity blues condition. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) lists postpartum depression as a depressive disorder with an incidence rate ranging from 11 to 42% depending on the demographic. The first day following delivery is

when the benign, temporary syndrome known as "maternity blues," which can occur in between 30 and 80% of women. It often begins 3–4 days after delivery and reaches its peak on the 4th–5th day. Crying, disorientation, worry, mood swings, sleeplessness, and dysphoria are typical pregnancy blues symptoms. When symptoms are strong and have persisted for longer than two weeks, postpartum depression is highly likely. It has been found that postpartum depression causes postpartum psychosis in 1 to 2 out of every 1,000 women. Postpartum depression affects roughly 8 out of every 100,000 new mothers in the US[6].

A brief depression that affects 15% of women after giving birth, postpartum depression is also thought to exist. It lasts longer and is more severe than the "baby blues," which can afflict up to half of new mothers. Although the exact cause of postpartum depression is unknown, it has been connected to several endocrine root causes, particularly postpartum thyroid dysfunction. Depression during pregnancy has also been linked to a higher chance of postpartum depression.

As a result of disrupting the attachment and link between mother and child, maternal postpartum depression has a negative impact on the infant's development. Some of these negative consequences include harm to the child's cognitive and social-emotional growth. If the mother depression is left untreated, these issues may continue and are probably not going to be amenable to treatments over time.

Inadequate medical treatment, higher medical costs, and breastfeeding cessation are all consequences of postpartum depression. Postnatal depression has an impact on the family as well, and it may coexist with other issues such as domestic violence, child abuse, and neglect.

Therefore, in order to guarantee the child's optimum growth and development, it is crucial to address maternal postpartum depression in a prompt and proactive manner.

According to research from established African nations like South Africa, the prevalence of depressive symptoms is 34.7%. Postpartum depression is the most frequent pregnancy complication that some women experience, and it is recognized as a public health issue. According to studies, prevalence rates for women range from 5% to 25%. The incidence of postpartum depression, however, has been calculated to range between 1% and 25.5% among new dads who are men. The disparity between the prevalence results from this study and those from other studies could be the result of methodological and regional variations[7].

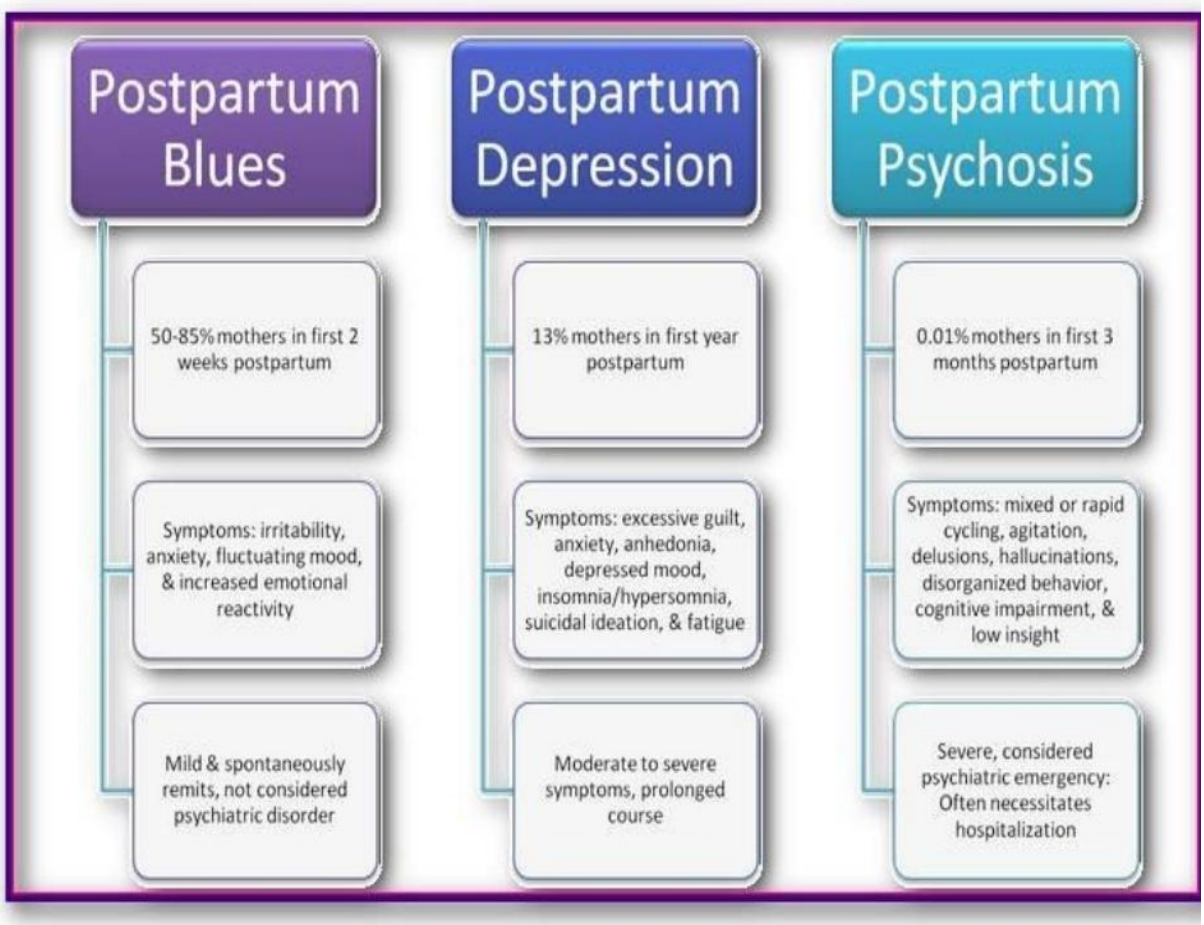
In their study, Arianna et al. found no link between depression and parity but did find a link between mood disorders in women and the onset of depression within six weeks (Bipolar depression). They came to the conclusion that primiparity also has a connection to postpartum mania/psychosis[8]. Further research should take into account biological variations between first and subsequent pregnancies as well as psychosocial factors that may be relevant. It should be mentioned that the mode of delivery has no effect on postpartum depression. Other studies similarly found no connection between delivery method and postpartum depression. In their comprehensive evaluation of five research, Lucic et al. found no correlation between the manner of delivery and postpartum depression.

Furthermore, Heron et al. found that as children get older, the incidence of depression rises. He highlighted that women' rates of depression at three and twelve months after giving birth were comparable to those reported by other authors who employed the same cut-off score and

measurement method. According to this report, 60% of moms are from the working class and more than 70% have a tertiary education[9]. This demonstrates the rise in female education and empowerment in this region of the nation. These two powerful factors, however, have little to no effect on postpartum depression.

Additionally, the Sawyer et al. study demonstrates that postpartum depression does exist in our African setting. The prevalence of 22.9% found in this study is considerably lower than the prevalence of 43% found by Nakku et al in Uganda, but it is comparable to prevalence estimates of 18.3% found in the continent of Africa[10-11].

Figure 1: Postpartum Affective Disorders (Johnson, 2011)



Source: Federal Ministry of Health (Nigeria's National Strategic Health Development Plans, 2010–2015)

2.1.2 Postpartum Depression in Nigeria

According to reports, the prevalence of postpartum depression (PPD), a mental health condition that affects about 10 to 15% of mothers worldwide, is three times higher in developing nations than in developed nations. Several of risk conditions are thought to be responsible for the illness' high burden. 18.4% is the estimated prevalence of PPD in Africa. However, a number of nations have recorded greater percentages, including Uganda (40%), Cameroun (23.4%), and Ghana (3.8%), as opposed to Ethiopia (13.1%), Morocco (11,6%), and Ghana (3.8%)[11].

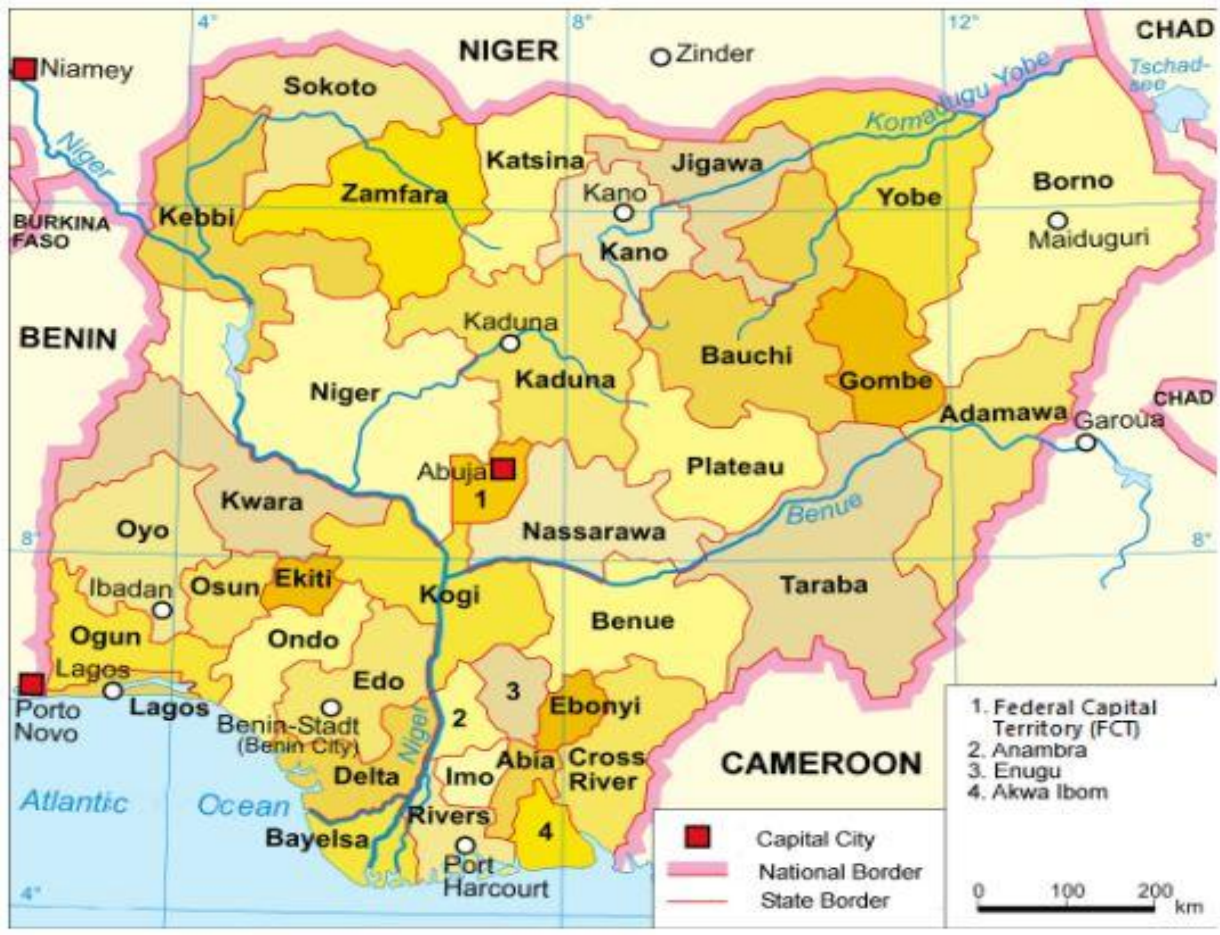
Numerous research has been carried out in Nigeria utilizing the Edinburgh Postnatal Depression Scale to ascertain the prevalence of PPD (EPDS). The prevalence of PPD was estimated to be lowest and greatest in western Nigeria, with 14.6% and 23.0%, respectively. A low incidence of 10.7% in one study and a high prevalence of 30.0% in the other were found in two separate studies carried out in south eastern Nigeria. Evidently high prevalence rates of 44.5% and 21.8% were found for Northern Nigeria[12]. The various screening techniques used, the study designs, the variations in geographic location, the variations in socioeconomic status, the cut off score of the screening instruments, as well as the various risk and predictive factors associated with developing PPD in such studies, may all be contributing factors to the variable prevalence both globally and within Nigeria. PPD has been connected to sociodemographic characteristics such religion, age, socioeconomic level, education, and unemployment. Additionally, obstetric and infant care risk factors such unintended pregnancies, pregnancy problems, unwell babies, infant deaths, parity, and a history of abortion have been identified. In addition, additional risk factors have been

discovered, including inadequate antenatal care, a history of psychiatric disease, stress, marital issues, and a lack of social or emotional support. A history of depression, a lack of social support, a poor quality mother-partner connection, and stress are among the most consistent risk factors/predictors identified throughout time.

PPD in Nigeria may be discouraged by a number of things. Particularly in rural areas, communal living fosters the ability to get social support and company from neighbors. Women feel comforted and relieved from the difficulties of pregnancy and delivery as a result of this. In some African cultures, the customary naming ritual, which is normally held on the eighth day of a baby's birth, also helps moms stay upbeat in the first few days following delivery.

Additionally, the cultural custom known as "omugwo/olojojo omo," in which a woman's mother and/or mother-in-law relocate with her after giving birth for up to six months to care for both mother and child, aids the newly delivered woman in adjusting to life after childbirth. These techniques lessen the stress and worry that come with being a mother, hence lowering the chance of PPD. However, some elements help PPD develop. Many women hide their sentiments when they go to the clinic for postpartum care because they think PPD is typical rather than a serious illness, so they keep their feelings to themselves and suffer in silence. Additionally, a lot of women are ignorant of the symptoms and signs of the condition, and those who are aware that they have a problem choose to hide it out of shame or concern that they will be judged as weak. Postpartum mothers in Nigeria have a poor understanding of PPD, and medical professionals have a difficult time identifying its symptoms. Due to the delayed diagnosis of PPD, study on the condition's prevalence and risk factors is now necessary in order to demonstrate how serious it is[13].

Figure2: Political map of Nigeria



Source: wikimedia.org/wikipedia

2.1.3 Contributing Factors to Postpartum Depression

It's crucial to keep in mind that there is probably more than one cause when reading studies on the etiology of mental disease. Even if a person has a hereditary sensitivity or tendency to developing depression, there must be experience and environmental factors that interact to generate the illness (Dubovsky & Buzan, 1999)[14]. Genetic and biological investigations of mood disorders reveal that they are complicated ailments. As a result, it is likely that some of these variables contribute to the emergence of postpartum depression.

Biological Factors

Although non-biological risk variables were the main focus of the meta-analyses, a summary of biological explanations behind postpartum depression is important. After birth, the levels of reproductive hormones drop quickly, and this has been suggested as a potential cause of postpartum mental disorders (Wisner et al., 2002). Progesterone and estrogen levels drop sharply after delivery and reach pre-pregnancy levels in three days. Prolactin, which had increased during pregnancy, is no longer blocked when estrogen levels drop after delivery, and lactation begins. The infant's sucking encourages the release of oxytocin. Neither lactation nor pregnancy exhibit the typical androgen cyclical fluctuation. In the first four hours after delivery, plasma corticosteroids start to significantly decline from their peak during labor. 4 weeks after delivery, thyroid function reaches pre-pregnancy levels (Robinson et al., 2001)[15].

There is insufficient proof to link the different neurotransmitter systems, free or total tryptophan levels, or cortisol levels to postpartum depression symptoms (Llewellyn, Stowe, & Nemeroff, 1997). In contrast, Harris (1996) found a weak link between postpartum depression and thyroid malfunction in women who tested positive for thyroid antibodies. Although it has been proposed that postnatal depression is brought on by low progesterone or estrogen levels or excessive prolactin levels, no reliable connections have been discovered (Harris, 1994; Hendrick, Altshuler, & Suri, 1998)[16].

In a recent study, Bloch, Schmidt, Danaceau, et al. (2000) investigated the possibility that some women may be more sensitive to reproductive hormones than others, and that in this subgroup, typical endocrine processes connected to birthing may cause an emotional episode. They constructed a scaled-down model to recreate some of the hormonal events of pregnancy and labor in order to test the idea. Eight women in each of two groups eight with a history of

postpartum depression and eight without were tested. Over the course of eight weeks, both groups of women received a gonadotrophin releasing hormone agonist to mimic the supra-physiological gonadal steroid levels of pregnancy. Then, the agonists were stopped to mimic childbirth[17].

While none of the 8 women who did not have a history of postpartum depression showed any mood symptoms throughout the withdrawal phase, five of the eight women with a history of the condition experienced substantial affective symptoms. The data, according to the authors, supported the idea that estrogen and progesterone may play a role in a subgroup of women's development of postnatal depression.

2. Obstetric Factors

Obstetric factors might include pregnancy-related issues like preeclampsia, hyperemesis, and early labor as well as delivery-related issues like emergency / elective cesareans, instrumental deliveries, early deliveries, and excessive intrapartum bleeding.

i) Obstetric Complications

O'Hara and Swain (1996) selected 13 studies with a total of over 1350 individuals that looked at the effects of obstetric variables in their meta-analysis. They came to the conclusion that obstetric variables had only a marginal (0.26) influence on the emergence of postpartum depression. There is no overall statistically significant link between obstetric variables and postpartum depression, according to more recent studies (released after the meta analyses or those excluded from the meta analyses). For instance, no statistically significant association between obstetric problems and postpartum depression was identified in two large,

independent investigations by Warner et al. (1996) (N=2375) and Forman et al. (2000) (N=5292) based on both multivariate and univariate analysis[18].

In a same vein, Johnstone et al. (2001) (N=490) found no correlation between postpartum depression and obstetric history, labor and delivery, pregnancy problems, or infant details. However, they did discover a marginal correlation between antepartum bleeding, forceps, multiple pregnancies, and postpartum depression. In their case-control study (n=396), Josefsson et al. (2002) found a comparable nonsignificant correlation between postpartum depression and delivery difficulties[19].

ii) Caesarean Section

Caesarean section and postpartum depression don't appear to be related, according to the available research. No connection was discovered between an elective or emergency caesarean section and future postpartum depression by Warner et al. (1996) and Forman et al. (2000)[20]. Postpartum depression and Caesarean sections did not show a significant trend, according to Johnstone et al (2001) research. According to Boyce et al. (1992), a caesarean section increases the risk of postpartum depression at three months. They noted that postpartum depression was more than six times more likely to occur in women in their sample who underwent an emergency caesarean section. Hannah et al. (1992) showed a high correlation between caesarean section and postpartum depression at 6 weeks, which corroborated these findings.

The likelihood is very high that the claimed favorable results merely reflect statistical trends. By probability alone, it is reasonable to anticipate that 1 in 5 tests within such sizable samples will yield statistically significant results. However, there is no significant association between

Caesarean section and the start of postpartum depression when the findings from the meta-analysis and an additional 9,000 participants are taken into account.

iii) Unplanned / Unwanted Pregnancy

Beck (1996) investigated the link between an unintended pregnancy and postpartum depression. She combined the findings from 6 research, totaling 1,200 participants, and discovered a tiny impact size[21]. Warner et al. (1996) observed a substantial association between unintended pregnancy and depression at 6 weeks postpartum in a sample of 2375 women[22], supporting these findings. It is important to be very cautious when interpreting an unintended or unplanned pregnancy as a risk factor for postpartum depression. It only assesses the conditions surrounding the pregnancy and not the woman's sentiments for the developing fetus.

iv) Breast Feeding

There is conflicting evidence about breastfeeding's potential role as a risk factor. According to Warner et al. (1996), postpartum depression was substantially related with discontinuing nursing at 6 weeks after giving birth (N=2375). These results were supported by Hannah et al. (1992) in a sample of 217 women. Forman et al. (2000) (N=5292), on the other hand, found no correlation between not breastfeeding and postpartum depression[23].

The reasons for the contradictory results observed between breastfeeding and the start of postpartum depression may reflect non-illness related factors, such as the woman's preference or hospital policy, rather than an etiological association, such as the woman's preference or hospital policy.

In conclusion, the evidence points to obstetric variables as having a minor but considerable impact on postpartum depression. The timing of the evaluation of postpartum depression varied across research, despite the fact that the majority of them were prospective, self-

reported, multisite sampling studies with sizable sample sizes. According to O'Hara and Swain (1996), the strength of the connection between putative risk variables and postpartum depression was significantly affected by utilizing relatively short time periods (like 2 weeks)[24].

However, there were differences in the ways that depression was assessed. Obesity issues were only moderately associated with depression when measured using self-report measures, contrary to studies that used interviewing to diagnose depression. According to these results, higher levels of obstetric difficulties are only modestly linked to higher levels of self-reported depressive symptomatology, even though they may be weakly linked to a diagnosis of postpartum depression.

When assessing the role of obstetric factors in the emergence of postpartum depression, one must exercise extreme caution. Some of the measured variables might not actually be independent, but rather may be impacted by unrelated variables. A hospital may perform fewer Caesarean sections than another due to experts' varying clinical opinions about when the procedure is necessary. Therefore, the figure may vary between hospitals, regions, or provinces, and most definitely between nations. Women can desire a Caesarean delivery in South Africa and Australia, for instance, although this is not possible in the UK. As a result, there are significant differences in the rates of Caesarean sections between these nations. In a similar vein, breastfeeding rates and attitudes may vary among cultures and nations. As a result, rather than showing a meaningful correlation between postpartum depression and obstetric factors, the data could simply be trends within the sample.

3. Clinical Factors

Clinical considerations include elements like having previously had mental symptoms, having a family history of the condition, and assessments of affect during pregnancy.

i. Previous History of Depression

14 papers with over 3000 participants were included in O'Hara and Swain's (1996) meta-analysis that looked at postpartum depression and the mother's prior mental history. The meta analyses conducted by Beck (2001) contained 11 trials that accounted for about 1000 individuals.

A prior history of depression was a moderate to significant predictor of a subsequent postpartum depression, according to the findings of both meta-analyses. According to subsequent research, women who have experienced postpartum depression in the past are more likely to experience it again (Johnstone et al., 2001; Josefsson et al., 2002)[25].

ii. Family History of Depression

O'Hara and Swain (1996) aggregated information from six research (about 900 women) to assess the relationship between postpartum depression in women and a family history of the disorder. The findings revealed no link between a family history of the condition and postpartum depression. Within the samples, it was not a reliable predictor of postpartum depression ($p = 0.05$, 95% CI -0.06 / 0.16). (Note that family history is a substantial predictor of postpartum psychosis, thus this finding does not apply to postpartum psychosis). However, 490 women with a family history of psychiatric disease were shown to have a higher risk of postpartum depression by Johnstone et al. (2001)[26].

Establishing a good family history of mental illness can be challenging since it needs the subject to be aware of and willing to disclose any relatives that have psychiatric issues. It's possible that there is a link between family history and postpartum depression, but there are currently no techniques for getting precise information.

iii. Mood During Pregnancy

For their analysis, O'Hara and Swain (1996) used data from 13 studies with over 1000 people, whereas Beck used data from 21 investigations with over 2300 subjects. The findings showed that postpartum depression was moderately to strongly predicted by low mood during pregnancy. Several following research have confirmed these findings (Johnstone et al., 2001; Josefsson et al., 2002; Neter et al.,1995). In her further investigation, O'Hara discovered that there was a higher correlation between depression during pregnancy and postpartum when it was measured by self-report (r = 0.84; 95% CI 0.75 / 0.93) than when it was measured via an interview (r = 0.39; 95% CI 0.22 / 0.56)[27].

iv) Prenatal Anxiety

Pregnancy anxiety that could be measured and the severity of postpartum depression symptoms have previously been linked (Hayworth et al., 1980; Watson et al., 1984). These results were corroborated by Beck, who examined the data from 4 research with a combined total of 428 participants and discovered that anxiety is a moderate predictor of postpartum depression. When O'Hara and Swain (1996) examined the findings of 5 studies with a combined subject count of almost 600, they discovered that anxiety during pregnancy was a strong-moderate predictor of postpartum depression. Higher levels of anxiety were found to be a major predictor of postpartum depression in the investigations by Johnstone et al. (2001) and Neter et al. (1995), which corroborated these findings[28].

To sum up There is no doubt that a woman's postpartum depression risk increases if she has a history of psychopathology. One of the biggest average impact sizes is observed for the postpartum depression risk variables. Depressed mood and anxiety during pregnancy were also discovered to be a strong predictor of postpartum depression, particularly when evaluated by a self-report measure, which is consistent with the findings regarding prior psychiatric history. These findings are significant because they show that dysphoric mood during pregnancy is linked to postpartum depression clinical syndrome as well as dysphoric mood throughout pregnancy. Consistent across studies, these results should be regarded as significant risk factors for the emergence of postpartum depression.

4. Psychological Factors

Psychological Constructs

In order to determine whether certain mother personality traits were linked to postpartum depression, O'Hara and Swain (1996) analyzed these traits across research.

i. Neuroticism

It is possible to characterize neurotic disorders as psychological conditions that typically cause distress but yet permit social interaction and reasonable thought. Typically, the neurotic disorders are seen as methods of coping with anxiety. Although it is frequently employed in personality tests as a gauge of psychological discomfort, the term "neurotic" is no longer used in psychiatric classification systems. In five trials including more than 550 women, neuroticism was assessed antenatally, and it was discovered to be a weak to moderate predictor of postpartum depression (= 0.39; 95% CI 0.21 / 0.57) (O'Hara & Swain, 1996). Subsequent research have confirmed these findings. According to Lee et al. (2000), postpartum depression in women was substantially related with higher neuroticism scores. According to research by Johnstone et al. (2001), women who were characterized by

questionnaires as "nervy," "shy-self-conscious," or "worriers" were considerably more likely to experience postpartum depression. These are more recent names for mental models that resemble neuroticism[29].

ii. Cognitive attributional style

Additionally assessed as a potential predictor of postpartum depression was cognitive attributional style. According to Barnett and Gotlib (1988), depressive attributions are associated with depressed moods, and negative cognitions are good indicators of depression. In 13 studies including more than 1300 women, O'Hara and Swain showed that a negative cognitive attributional style was only sluggishly associated with postpartum depression (0.24, 95%CI 0.18 / 0.31) [30].

Summary of Clinical Factors & Psychological Constructs

It is obvious that neuroticism during pregnancy has an impact on postpartum depression later on. When depression was treated as a syndrome and evaluated by a clinical interview, O'Hara and Swain discovered that the effect was more pronounced. On the other hand, when evaluated through self-report, a negative cognitive attributional style was more significantly associated with high levels of depressed symptomatology. These findings, according to O'Hara and Swain, along with those relating prior history of psychopathology and depression during pregnancy, strongly imply that there is a continuity of psychiatric disturbance that lasts for many years before a woman's pregnancy and into the postpartum period. This issue could be ongoing or sporadic. It could represent a disruption with either a very mild or significant morbidity. What is still unclear is whether or to what extent childbirth impacts the timing or intensity of postpartum distress.

5. Social Factors

i. Life Events

It is commonly known that certain life circumstances might cause depression to start (Brown & Harris, 1978). Losing a job, getting divorced, moving, or losing a loved one are all known to be stressful experiences that can set off depressive episodes in people who have never had an affective disorder before. As stressful life experiences in and of themselves, pregnancy and childbirth are frequently thought to contribute to depression (Holmes & Rahe, 1967)[31]. The consequences of additional stressful life experiences that women go through throughout pregnancy and the puerperium, however, have been researched by certain researchers. These occurrences, which are assumed to represent added stress at a time when women are particularly vulnerable, could be a contributing factor in postpartum depression.

Using a retrospective methodology, Paykel et al. (1980) discovered that negative life experiences rated as moderate to severe were linked to a higher likelihood of receiving a clinical depression diagnosis. According to research by O'Hara, Rehm, and Campbell (O'Hara, Rehm, & Campbell, 1982; O'Hara, Rehm, & Campbell, 1983), high levels of life events from the start of pregnancy until about 11 weeks after giving birth were linked to higher levels of depressive symptomatology and a higher risk of being diagnosed with postpartum depression[32]. Life events and postpartum depression are not linked, according to Hopkins, Campbell, and Marcus (1987). A correlation between life events and postpartum depression has not been identified in at least two other sizable studies (Holmes et al., 1967; Kumar et al., 1984). The study design presents one of the challenges in evaluating a potential link between

life events and the onset of postpartum depression. When data is collected retrospectively, participants may over report life events as they (perhaps unconsciously) attempt to connect a stressful event to a potential cause of the illness. Since the result of postpartum depression is unknown at the outset, this source of bias is eliminated by the prospective data collection[33].

O'Hara and Swain used values from 15 studies that included information on over 1000 subjects who had prospectively recorded data on life events for their latest meta-analyses. They discovered a strong-moderate connection (r = 0.60, 95% CI: 0.54/0.67) between going through a life event and getting postpartum depression. There was disparity between research, nevertheless, which was related to the country in which they were conducted: studies from Britain and North America demonstrated high correlations between postpartum depression and recent life events, but studies from Japan revealed no such correlation. Why this might happen is unclear. In Hong Kong, Lee et al recent study from 2000 found no connection between life experiences and postpartum depression. The method used to evaluate depression also accounted for the variability of results: self-report evaluations produced a substantially stronger link with life events than interview-based assessments, which showed a moderate relationship. The results demonstrate that stressful situations are a definite risk factor for postpartum depression, even when they happen during pregnancy rather than during the puerperium. Beck (2001) evaluated studies that examined perceived stress throughout pregnancy and the early puerperium using a less precisely defined measure of "life stress." She looked at 16 research with more than 2300 participants and discovered a moderate link between postpartum depression and subjective life stress. Postpartum depression symptoms were linked to higher levels of perceived life stress[34].

ii. Social Support

Several earlier research has studied the effect of social support in reducing postpartum depression, and it is believed that receiving social support from friends and family during difficult times may be a protective factor against developing depression (Brugha et al., 1998)[36].

Social assistance is a multifaceted idea. Spouses, relatives, friends, or coworkers are all potential sources of support. There are several forms of social support as well, including instrumental support, informational support, and emotional support. Instrumental support is tangible help in the form of material assistance or assistance with duties (expressions of caring and esteem). Researchers have also looked at the relationship between received support and perceived support (a person's overall opinion or idea that people in their social network would help them in a time of need) (where supportive exchanges may be directly observed or measured by asking people). Receiving support requires measuring both its amount and quality, which may be done by counting the number of network members and the regularity with which helpful acts are performed (Collins et al.,1993; Dunkel-Schetter & Bennett, 1990; House & Kahn, 1985; Neter et al., 1995). Postpartum depression and emotional and practical assistance are negatively correlated, according to studies (Beck, 1996; Menaghann, 1990; Richman et al., 1991; Seguin et al., 1999)37. Perceived social isolation (or a lack of social support), according to two recent research, is a significant risk factor for postpartum depression symptoms (Forman et al., 2000; Seguin et al., 1999). There could be discrepancies between social assistance that is perceived and that is really given. In their 2000 study, Logsdon et al. looked at social support among low-income pregnant African-

American women. She discovered a substantial correlation between perceived support and postpartum depressive symptoms, but not between received support and postpartum depression. The results of past investigations were supported by this[37].

In their 1983 study on perceived social support, O'Hara, Rehm, and Campbell discovered that depressed women felt their spouses fell short in both instrumental and emotional support after giving birth. In contrast to women who were not depressive, these women did not perceive their spouse as being less helpful throughout pregnancy. However, unlike during pregnancy, the sad women's friends and parents were also thought to be less encouraging during the puerperium. In a follow-up investigation, these findings were supported (O'Hara, 1986). Cutrona (1984) discovered that the degree of postpartum depressive symptoms was correlated with numerous variables of perceived social support measured during pregnancy. Surprisingly, rather than the level of closeness with the husband, the strongest predictor was the availability of companionship and a sense of belonging to a community of others who shared similar traits. O'Hara and Swain (1996) reviewed 5 studies in which over 500 patients' total levels of social support were assessed during pregnancy. They discovered a significant inverse link (= -0.63; 95% CI -0.75/-0.51) between social support and postpartum depression. This shows that postpartum depression is more likely to occur in pregnant women who do not obtain adequate social support. This idea was supported by a more recent study that claimed that informational support from lots of people in your social network protected against postpartum depression[38](Seguin et al., 1999).

O'Hara and Swain focused on perceptions of support from the baby's father in an effort to further explore the idea of social support. They discovered a moderate strength connection (=

-0.53; 95% CI -0.67/-0.39), although the results from different research varied depending on how depression was measured. They came to the conclusion that, while poor support from the baby's father was strongly adversely correlated with the degree of depressive symptoms, it was not significantly connected with being diagnosed with postpartum depression per se.

To sum up A rather strong risk factor for postpartum depression, particularly in the form of high levels of depressed symptomatology, is social support as it manifests during pregnancy. There is a very substantial correlation between social support and depression, according to the one study that evaluated overall social support during pregnancy and used an interview-based depression outcome. High levels of postnatal depression symptomatology were linked to both general social support throughout pregnancy and support from the baby's father in particular. Studies have often identified discrepancies between social support received and perceived in postpartum depressed women. These discrepancies may be partially explained by the fact that depressed people frequently have a pessimistic outlook on life, which extends to how supportive they perceive themselves to be. The bulk of studies have concentrated on pregnant women from cross-sectional samples, however there may be unique populations for whom social support is important. For instance, there is a paucity of research on the function of social support in low income groups (Lee et al., 2000; Logsdon et al., 2000; Neter et al., 1995; Seguin et al., 1999). Similar to this, more study is needed on the benefits of social support on Aboriginal and immigrant women.

iii. Psychosocial Aspects of Childbearing

It is important to not undervalue how having children affects a mother's psychological functioning on all fronts. In many circumstances, the family system must be rebuilt, and many spouses take on more traditional responsibilities, according to Robinson and Stewart

(2001). The majority of parenting responsibilities typically fall to the woman, therefore the parents must determine how their new duties will effect their former work habits and make the appropriate adjustments. The connection between the partners frequently deteriorate as a result of the extra responsibility of childcare, and there is less time for socializing. The pressures of being a new mother can be lessened with the father's assistance. When assessing the role of factors in the emergence of postpartum depression, these stresses should be taken into consideration.

iv. Marital Relationship

Women who encounter marital issues during pregnancy are more likely to develop postpartum depression, according to several well-designed studies (Braverman & Roux, 1978; Kumar et al., 1984). Hopkins et al. (1987) were unable to support this conclusion. Women with postpartum depression felt their husbands were less helpful than women who were not sad, although these differences were only noticeable after childbirth and not when a woman was pregnant (O'Hara, 1986; O'Hara et al., 1983).

A brief discussion of each instrument's limitations is necessary because a variety of tools were used to measure marital relationship between studies. Women's contentment with the relationship was gauged using a straightforward Likert scale, and more formal tests like the Dyadic Adjustment Scale (DYAS) were also used (Spanier, 1976). A self-report design or an interview could be used for the evaluation.

Potential reporting bias is eliminated by the use of pre-partum data as the basis for the meta-analyses. It has previously been discovered that postpartum depressed women view their husbands as being less helpful, but it is unclear whether their depressive symptomatology has

an impact on how they see their relationship. Because the measurements were taken before delivery, these results are free of such bias.

More specifically, both meta analyses evaluated studies that evaluated marital relationships using broader metrics like Likert scales or open-ended questions. Compared to O'Hara and Swain, who included 8 research with more than 950 people, Beck included 14 investigations totaling more than 1500 subjects. While O'Hara and Swain identified a minor unfavorable relationship, Beck discovered a moderate association between a bad marriage and postpartum depression. It was intriguing to see how different assessment techniques led to various effect sizes. Marriage relationship evaluation using interviews was less accurate than evaluation through self-report. Uncertainty about the cause may be related to unwillingness to explain the nature of the connection with an interviewer, although it is simpler to do so through the anonymity of a questionnaire. It might also be a result of more sensitive survey questions.

v. Socioeconomic Status

There has been a lot of focus on the part that socioeconomic status plays in the causes of depression and other mental health issues. Mental health illnesses have been linked to socioeconomic deprivation markers such unemployment, low income, and low educational attainment (Bartley, 1994; Jenkins, 1985; Patel et al., 1999; Weich et al., 1997; World Health Organization, 2001). Depressive disorders are more prevalent in impoverished nations, according to recent studies from North America, Latin America, and Europe (World Health Organization, 2001). The etiology of postpartum depression has also been researched in relation to socioeconomic disadvantage. Beck (2001) looked at 8 research with 1732 participants and discovered a negligible relationship between socioeconomic level and

postpartum depression (0.19 - -0.22). Which socioeconomic status measures were used into this meta-analysis is not clear, though. In their analysis of 14 research including more than 1650 subjects, O'Hara and Swain (1996) also observed a minor effect (- 0.141). They came to the conclusion that postpartum depression had a tiny but significant predictive link with factors like low income, the mother's profession, and lower social status. Other sociodemographic factors, such as marital status, pregnancy, employment position, and parity, did not, however, demonstrate a meaningful association to postpartum depression. Recent research that was excluded from the meta-analyses revealed that postpartum depression was substantially correlated with unemployment and financial stress (Lee et al., 2000; Patel et al., 2002; Seguin et al., 1999; Warner et al., 1996). Financial stress was identified as a significant risk factor for postpartum depression in low income populations in India, China, and Canada by Lee (2000), Patel (2002), and Seguin (1999), respectively[39].

vi Infant Variables

Infant-related variables can only be measured postpartum by definition. As a result, their ability to forecast outcomes is biased, especially when compared to the impartiality of the mother's reports. Postpartum depression has already been linked to child-related variables, according to reports. Hopkins, Campbell, and Marcus (1987) discovered that having a challenging baby or a baby with neonatal complications was associated with a diagnosis of postpartum depression, while Cutrona (1983) reported that higher levels of childcare-related stressors were associated with higher levels of depressive symptomatology. Beck (2001) investigated two aspects of baby temperament and childcare stress. She discovered that postpartum depression symptomatology was only moderately predicted by childcare stress and having an infant with a challenging temperament (N=789). Researchers have discovered

that mothers with postpartum depression describe their children less favorably than control mothers and report more behavioral issues with their newborns (Murray, 1988). Therefore, reporting of newborn traits may be biased as a result of the mothers' symptoms[44].

Factors not Associated

O'Hara and Swain (1996) and Beck (2001) conducted meta-analyses, and their findings revealed that the following factors were not substantially linked (i.e., the confidence interval contained 0) with the emergence of postpartum depression:

• Maternal age (26 studies, N > 10,000; O'Hara & Swain, 1996).

• Education level (10 studies, N > 7,000)

7 studies with a N > 2,000 had parity.

• The number of years a couple has been together (6 studies, N > 800).

• Child's sex (15 studies, N greater than 8,000)

* Child's Sex - Research done in Western nations has not discovered a link between a child's sex and postpartum depression. However, recent research from China (Lee et al., 2000) and India (Patel et al., 2002) (n=220) suggests that postpartum depression is significantly linked to spouse disappointment with the baby's sex, particularly if the baby is a girl. Therefore, within certain cultural groups, a parent's response to the baby's sex may be a possible risk factor for postpartum depression[40].

N > 800)

• Sex of child * (15 studies, N > 8,000)

* Sex of Child - Studies conducted within Western societies have found no association between the sex of the child and postpartum depression. However, recent studies provide evidence from India (Patel et al.,2002) (n=171) and China (Lee et al.,2000) (n=220) which suggest that spousal disappointment with the sex of the baby, specifically if the baby is a girl, is significantly associated with developing postpartum depression[40].

2.1.4 Contributing Factors to the Development and Recovery from Postpartum Depression

An "insider's perspective" on sickness can be obtained by the researcher through the use of qualitative procedures in health studies, which is not achievable using quantitative techniques. Such techniques have been used in a number of research to deepen our understanding of what it's like to live with and recover from postpartum depression. Beck (2002) has released a met synthesis of 18 research on postpartum depression that were conducted using qualitative methods and published during the 1990s. The ideas, grand narratives, generalizations, or interpretative translations that result from the comparison or integration of qualitative study findings are referred to as met synthesis (Sandelowski, Docherty, & Emden, 1997). The term "meta" refers to the interpretation of the facts or the translation of qualitative investigations into one another.

Beck highlighted four fundamental ideas or viewpoints pertaining to postpartum depression:

1. Incongruity between expectations and reality of motherhood

2. Spiraling downward

3. Pervasive loss

4. Making gains.

She emphasized that mothers can alternate between these several viewpoints and even be in more than one at any given time. These elements were cited by the women as: (i) influencing the start of the illness and (ii) supporting their recovery within the framework of the meta synthesis. As each of these viewpoints is presented and debated, appropriate references to the original studies will be made.

i. Incongruity Between Expectations and Reality of Motherhood

The "hazardous misconceptions" that are prevalent among both professionals and laypeople, and which equate becoming a mother with complete fulfillment and happiness, have been widely discussed by Nicolson (1990). In eight of the meta synthesis's 18 research, the focus was on the contribution of contradictory conceptions and experiences of parenting to the emergence of postpartum depression. Women had irrational expectations that were dashed by their own motherhood experiences (Mauthner, 1999)[43]. They felt they had fallen short of their ideals of the "perfect mother," and as a result, they were disillusioned with parenthood (Berggren-Clive, 1998). The mothers' descent into postpartum depression was sparked by feelings of hopelessness and sadness. In seven areas labor and delivery, living with their children, relationships with partners, support from family and friends, life events, and bodily changes the women in Berggren-study Clive's reported the discrepancy between their expectations and reality of motherhood (Berggren-Clive, 1998)[41].

The myths of the ideal mother and motherhood as a completely gratifying and joyous experience are perpetuated by society, according to Nicolson (1990) and Beck (2002), thus the women believed that no other moms experienced the same negative emotions to childbirth. As a result, they believed that they were "bad" or "abnormal" moms, which made them dread moral judgment and being branded as horrible mothers. In mothers' narratives, Mauthner (1998) found three different types of conflict that were all driven by the need to be

the "ideal mother." One point of contention was how to raise their child, including issues like breastfeeding and having a job. The second group focused on the melancholy and dissatisfaction of women, which ran counter to their expectations that they would enjoy their newborns. The third was the notion that they could manage with their new babies despite the fact that they needed assistance.

Each woman's difficulties were influenced by her ideas of what makes a "good mother" and by the aspects of motherhood that meant the most to her. Some of the women's conflicts were influenced by parity; for example, the 12 first-time mothers' problems were around attempting to live up to their ideal of the "perfect, ideal mother" (Mauthner, 1999)[43]. The six multiparas, in contrast, were aware that no mother was flawless, and their struggles centered on attempting to live up to their expectations of being able to handle their newest child. Cultural context appears to have the power to amplify these contrasting notions of motherhood and experiences. If mothers are held to high cultural standards, this might make mothers feel even more powerless and unqualified to be mothers. This may be especially important for women who have left their country of origin and are no longer in contact with their immediate family, who ordinarily offer practical and emotional assistance during the postpartum time.

ii. Spiraling Downward

As mothers' emotions grew worse, postpartum depression started to take hold. Aspects of this negative emotional spiral were discussed in all 18 papers that made up the meta synthesis. Women subtly experienced a wide range of feelings, including anger, guilt, over whelmment, anxiety, and loneliness (Wood, Thomas, Droppleman, & Meighan, 199746). The emotions did not merely comprise despair and sadness. Some moms worried about harming themselves

or their children and had obsessive thoughts or cognitive impairment, which made them feel more anxious and guilty. The ladies who acknowledged having considered suicide and self-harm talked about how the prospect of death by suicide offered relief from "the nightmare" and "the blackness"[42].

iii. Isolation / Loneliness

Women frequently mentioned feeling extreme loneliness and isolation. They usually felt uneasy around people and believed that no one truly understood what they were going through (Beck, 1992). They retreated socially to avoid a potentially dangerous environment (Semprevivo, 1996)[48]. The feeling of isolation seems to be altered by social variables. Although multiparas already had a network of other moms from their previous children, primiparas felt physically cut off from other mothers (Mauthner, 1995)[43]. The mothers' experience of isolation may grow or diminish depending on how their coworkers respond to their return to work. Some mothers felt they were missing out on the network of mothers who stayed at home even if they loved the company of their coworkers at work. Because their coworkers disapproved of working mothers, other people experienced a greater sense of isolation.

iv. Guilt

For a variety of reasons, including being a bad mother (Mauthner, 1995; Mauthner, 1999; Mauthner, 1998), failing to be the ideal mother (Wood et al., 1997), and not feeling an emotional connection to their child, women carried a heavy burden of guilt (Beck, 1996; Sluckin, 1990). The mothers (Beck, 1992; Semprevivo, 1996) who had these ideas were so shocked by them that they were plagued by guilt[21].

v. Pervasive Loss

In 15 of the 18 investigations, the loss of control was noted as the main topic. The loss of control affected all part of their lives, including their thoughts, feelings, and interpersonal interactions. The women in Nicolson's (1999) study did not have enough time to think about themselves or absorb their everyday experiences, which led to a sensation of being out of control[35]. As a result, they felt that they had lost themselves, their old selves, and their identities. Women talked about how their relationships with their partners, kids, and family members suffered as a result of the disease (Morgan, Matthey, Barnett, & Richardson, 199750). While some women believed that revealing their thoughts was a sign of personal inadequacy and failure as a mother, others thought that admitting their feelings was a sign that their spouses "could read their minds" and take some initiative in assisting them (McIntosh, 1993). The women also ran the risk of having their loved ones misinterpret, reject, or morally judge them if they did admit to their sentiments. Women with postpartum depression retreated from these interactions and spoke of the difficulty of being among other moms because they felt "different" and "abnormal" in comparison to other mothers (Mauthner, 1995).

vi. Making Gains

The mother's rehabilitation from postpartum depression involved surrendering a lot. In this sense, "surrendering" signified acknowledging that something was seriously wrong and that assistance was required. Unfortunately, women's initial experiences with healthcare professionals were more upsetting than expected; they claimed that their worries were

downplayed or dismissed, and they frequently experienced feelings of disappointment, irritation, embarrassment, and rage. Only 18 of the 38 women interviewed for McIntosh's study (1993) reported having sought assistance. The primary justifications they offered included embarrassment and guilt, the fear of being branded a "bad mother," and the stigma attached to being ill at a time that ought to be joyful[47]. Once the women discovered they weren't alone, attending postpartum depression support groups gave them hope (Berggren-Clive, 1998). The women found comfort in these groups (Beck, 1992). As they could relate with others and openly criticize the standards of motherhood they strove to uphold, their feelings of isolation and loneliness vanished (Mauthner, 1995)[43].

vii. Reintegration & Change

According to the majority of women in Berggren-study Clive's (1998), one way to break free from the limitations they had placed on themselves was to adjust the unreasonable expectations the moms had for themselves[41]. To restore their sense of self, the women had to change their expectations of themselves as wives, partners, and moms. As the mothers became aware of their needs and learned how to meet them, they started to regain control over their lives. The mothers started to lament the lost time they would not be able to spend with their infants as the sadness subsided, but it was a gradual, unpredictable process. Following their experience with postpartum depression, many of the women reported feeling stronger than before since healing required accepting or resolving the problems they had encountered during their transition to motherhood (Mauthner, 1998).

2.1.5 Measurement and Screening tools for postpartum depression

For the assessment of depressive symptoms during the postpartum period, various measures have been employed. Some of these tools, meanwhile, weren't made expressly to quantify

PPD. This is true for the General Health Questionnaire (GHQ), the Zung Self-Rating Depression Scale (Zung SDS), the Center for Epidemiological Studies Depression Scale (CES-D), the Beck Depression Inventory (BDI and BDI-II), and the Inventory of Depressive Symptomatology (IDS). In actuality, these are tools that assess overall depressive symptoms and related discomfort. Additionally, some techniques have not been used regularly and some have not had their psychometric qualities fully defined when used to measure depressed symptoms. On the other hand, a number of additional research have put various screening methods to the test in order to look into postpartum depression disorders.

The EPDS has been the most used scale for detecting postpartum depression during the postpartum period. It was created to help medical practitioners screen population samples of postpartum women for depression symptoms after giving delivery, and because of its high sensitivity, specificity, and positive predictive values, it has received significant research and application in numerous countries. A relatively modern tool created specifically to detect postpartum depression is the PDSS. The PDSS, which is regarded as a useful tool for diagnosing minor and serious depression, has been shown to have good psychometric characteristics, construct validity, and reliability. The PDSS-SF, also known as the short-form version of the aforementioned questionnaire, is made up of seven items that were taken from the PDSS-item scale, each of which represents a dimension assessed by the PDSS. Because it provides a "quick, but accurate, overall level of postpartum depression symptomatology," the PDSS-SF is regarded as useful.

The Bromley Postnatal Depression Scale (BPDS), which was created specifically for postpartum depression, is also listed here due to its special creation and construction. The reliability of this instrument is, however, still unproven, particularly when compared to various cultural factors. As previously indicated, predictive inventories, which identify risk factors for postnatal depression and can therefore be utilized throughout pregnancy, differ

conceptually from the particular screening methods. This class includes a number of instruments, the majority of which have not undergone thorough cross-cultural testing.

a) Edinburgh Postnatal Depression Scale – EPDS

The most well-known and widely used screening tool for postpartum depression is the Edinburgh Postnatal Depression Scale (EPDS). Cox et al. originally documented the creation of the EPDS in 1987, followed by Cox and Holden. Six of the original 13 items in the EPDS were taken directly from other surveys when it was first created, and its initial validation study was published in 1986. Later, the scale was condensed to its present 10 questions, and 84 postpartum women were used as a sample to validate it. The respondent is questioned on their feelings over the preceding seven days using a scale. The possible answers are graded from 0 to 3, increasing in severity, for a possible score of 30. In the earliest investigations, the EPDS's sensitivity, specificity, and positive predictive value were 86%, 78%, and 73%, respectively, with a cutoff threshold of 9/10. The majority of possible depression cases can be found using this value. Numerous cultures from different nations have been used to assess the specificity and sensitivity of some of the EPDS' psychometric features. The scale has been tested in a variety of nations, including Germany, England, South Africa, Brazil, South Africa, Australia, Sweden, Chile, Canada, Portugal, Italy, France, and China. While the specificity showed variances from 49% to 100%, the sensitivity seen in the validation experiments showed variations ranging from 65% to 100%. Due to differences in methodology, cut-off points, diagnostic criteria, and the time between births and the instrument's application, the results from the various investigations varied greatly. Studies conducted in the United Kingdom have shown that, when compared to the diagnosis of major depression made through a psychiatric interview, the EPDS exhibits a sensitivity ranging from 68 to 95% and a

specificity ranging from 78% to 96% when using a cutoff point of 12/13 in the sixth week of the postpartum period. The cutoff value of 9/10, which was chosen to boost the instrument's sensitivity, shows a sensitivity range of 84 to 100% and a specificity range of 82% to 88%. In the postpartum period, a total score more than 12 suggests a higher likelihood of depression, but it does not provide a measurement of the severity of the symptoms. Matthey et al. looked into the scale's varied language and formatting, as well as the growing use of non-validated EPDS cutoff scores in the literature. The scale should include the validated scores of 13 or more and of 15 or more when reporting a probable depressive episode in English-speaking women during postnatal and antenatal periods, respectively. This study advocated for the scale to be written and formatted as originally described by its authors.

Different cutoff scores, though, might be necessary for certain ethnic groupings. According to some experts, it may be possible to identify mothers who are more likely to experience postpartum depression early on, which would help with secondary prevention. The EPDS has been shown by Dennis et al. to have adequate prognostic and discriminative ability to identify moms who are more likely to experience postpartum depression between the fourth and eighth weeks when applied with cutoff thresholds of 9/10 during the first postpartum week. According to the author, there is a substantial correlation between maternal mood over the three assessed weeks and women who exhibit signs of major or minor depression in the first postpartum week are more likely to experience mental disorders in the weeks that follow. The outcomes allow for the secondary prevention of postpartum depression in the future. On the other hand, Lee et al. showed that the psychometric features of this instrument indicate a substantial number of false-positive outcomes when the EPDS is employed during the first 48 hours following the child's birth. With the exception of one item that assesses sleep issues, the EPDS only evaluates emotional symptoms of postpartum depression. The main

drawbacks of the EPDS are that it cannot assess the context of a woman's experience as a new mother or characteristics like loss of control, loneliness, unreality, impatience, loss of self, and concentration problems.

Furthermore, EPDS does not pick up on indications of a depressed episode like decreased libido, decreased weight, or decreased hunger. This scale does not appear to be able to detect postnatal depression, which may be particularly significant for studies looking at how maternal depression affects mother-baby interactions. Postnatal depression with symptoms of psychomotor retardation seems to be undetectable by this scale. The EPDS is frequently used as an assessment/diagnostic tool in clinical practice even though it is a screening instrument rather than a diagnostic one. A psychiatric evaluation should not be replaced by the EPDS application. Since the scale only suggests the likelihood of postpartum depression and does not measure the severity of the distress, a professional interview is necessary for diagnosis.

b) Postpartum Depression Screening Scale – PDSS

The PDSS is a self-rating scale that was recently created and is theoretically based on several qualitative data sets that Beck collected and examined in earlier studies. This instrument, which was created to address some of the shortcomings of the EPDS mentioned above and assess more introspective concerns of a woman in the postpartum period, is not a diagnostic tool. The PDSS has seven conceptual domains: disturbed sleep and eating; anxiety/insecurity; emotional lability; cognitive impairment; loss of self-esteem; guilt/shame; and thoughts of suicide. Five distinguishing symptoms that women may exhibit in the postpartum period make up each domain. Using a 5-point Likert scale, these are listed in terms of degree of

intensity that can range from full disagreement to full agreement; scores ranging from 35 to 175; and relate to how the ladies felt the two weeks prior.

There are versions of the PDSS in English, Spanish, Turkish, Thai, and Portuguese. First Nations and Métis women as well as Native American English speakers have tested the PDSS's original English edition.

To examine the validity and reliability of the new measure, 525 mothers were enlisted during the first six weeks after giving birth for the PDSS validation research. For each of the seven domains, reliability analysis found Cronbach's alpha indices greater than 0.80. The mothers originally completed the PDSS, which was then followed by a structured clinical interview based on the DSM-IV (conducted by clinicians who were "blinded" to the score) to see whether or not there was a correlation. Using the Receiver Operator Curve, a cutoff value of 60 was suggested for severe or minor depressive distress, with sensitivity and specificity of 91% and 72%, respectively, and a cutoff point of 80 for serious postpartum depression (ROC). Beck and Gable looked into 150 more moms in the sixth week of the postpartum period in a separate study to support the findings. This study found that a cutoff value of 70 can result in fewer (6%) false negative outcomes. However, false positive results will occur in up to 16% of women who are not depressed. You can also use the PDSS in its condensed form, which only includes the first seven items of the complete scale. These items exhibit a strong association ($r = 0.91$) with the seven dimensions utilized in the extended version. When compared to the entire PDSS, the resultant scores, which range from 7 to 35, exhibit comparable levels of reliability and validity. The PDSS obtained a score of 91.9 for ease of reading using the Flesch index (1948), which is compatible with "very easy" comprehension.

Along with this positive aspect, a closer examination of the PDSS in contrast to the EPDS revealed reliability and validity. The interviewee's clinical state in each of the seven assessed domains is specifically described by the PDSS. Such references are helpful for the doctor, midwife, or nurse since they provide information on the mother's current condition in the explicitly assessed areas, allowing the practitioner to focus on particular and suitable therapeutic measures to fulfill individual needs. In a study comparing the PDSS, EPDS, and Beck Depression Inventory (BDI-II), the PDSS was the only tool that assessed all five of the postpartum depression's initial symptoms: anxiety, sleeplessness, agitation, irritability, and disorientation. Additionally, the PDSS was the only tool used to quantify self-esteem decline. When adopting 80 as the cutoff point for serious depression, this scale has the highest sensitivity and specificity (94% and 98%, respectively).

c) The Bromley Postnatal Depression Scale – BPDS

The Bromley Postnatal Depression Scale (BPDS), which was created in the UK in 1992, is a tool created specifically for identifying both current and past episodes of postnatal depression. Women are able to report their feelings and actions both during and after giving birth, for the present and all past pregnancies. It includes ten items and a graphic that details the onset, duration, and peak severity of postpartum depression for all births. These features make this instrument special because it may be possible to build a postpartum depression longitudinal course. It is primarily intended for use in postal surveys and is suitable for detecting both past and present bouts of PND. Little is known about the BPDS's psychometric characteristics. The validity of this instrument across cultures has not been established. This scale showed strong test-retest reliability in a community sample, but the internal consistency has not been proven. According to a research done on a sample of 165 women, the BPDS's sensitivity and

specificity were 62% and 94%, respectively. Although the BPDS was deemed "reliable" by its proponents, test-retest ratings were the sole method used to analyze this questionnaire's dependability. The BPDS's reduced sensitivity may be due to the fact that it can also identify cases with less severe forms of anxiety and depressive disorders.

2.1.6 Prevalence of postpartum depression

The quality of the available data and PPD estimates, as well as their socio-demographic or geographic representations, are very inconsistent (Annet, 2004). According to WHO estimates from 2009, depression affects between 20 and 40 percent of women in underdeveloped countries and between 10 and 15 percent of women in industrialized nations during or after pregnancy. Postpartum depression is very common, according to the few research done in Nigeria and other African nations. A 2005 study in Nigeria found a prevalence incidence of 14.6% for postpartum depression, according to Atwoli (2011). In the western region of Nigeria, Ebeigbe and Akhigbe (2008) discovered a higher frequency of 27%. According to a similar study, 33% of the postpartum women in a random sample from Zimbabwe satisfied the DSM-V criteria for depression (Chibuanda et al., 2010). In a study conducted in South Africa by Kathree, Selohilwe, Bhana, and Petersen (2014), PPD was shown to be highly prevalent in 16.47% of mothers in a peri-urban settlement and 39% in an informal community.

The global and cross-cultural nature of PPD was studied by Oates et al. in 2004. The study's main goal was to investigate how treatments and services for PPD are universally recognized, attributed, described, and perceived in the context of local services. For three separate groups of informants drawn from 15 different health centers in 11 different countries, data were

gathered and analyzed. Oates et al. came to the conclusion that PPD is a disease that necessitates medical experts' treatments due to its universal nature and cross-cultural comparability.

Adewuya, Fatoye, Ola, Ijaodola, and Ibigbami (2005) conducted a controlled study to examine the prevalence of PPD among reproductive-aged women in Nigeria at six weeks following birth using various measurement techniques. The Beck's Depressive Inventory (BDI) and regionally tailored versions of the EPD were among the instruments. 876 postpartum women and 900 non-postpartum women made up the study's participants (Adewuya et al., 2005). Additionally, PPD was identified using the SCID-NP, a modified version of the Structured Clinical Interview for DSM-III-R. (Adewuya et al., 2005). The findings showed a substantial difference between the two groups, with postpartum women scoring higher on both the EPDS and BDI, indicating that PPD prevalence in Nigeria is comparable to that in the industrialized world (Adewuya et al., 2005).

Abiodun (2006) carried out a two-stage screening process in a Nigerian developing society. The study's goal was to ascertain the prevalence of postnatal depression and its contributing factors in PHC facilities. 18.6% of the primary care populations surveyed had postnatal depression. The approach comprised the use of the Present State Examination Schedule and the 10-item self-reporting Edinburgh Postnatal Depression Scale (EPDS). For the purpose of PPD early diagnosis and intervention, the authors recommended integrating the EPDS into maternal and health care programs of Primary Health Care facilities in poor nations like Nigeria.

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2.1.7 Detection, prevention and treatment of postpartum depression

PPD is frequently misdiagnosed, and it's critical to understand why in order to develop more effective treatments. Based on suitable study findings, prevention and therapy should be implemented.

a) Detection

Despite the fact that simple, reliable detection tools have been developed, general care and obstetric teams frequently miss PPD despite the fact that it is a common condition (Cooper & Murray 1998, Dennis & Chung-Lee 2006). Up to 80% of PPD-afflicted women fail to report it and receive a diagnosis (Halbreich 2005). The majority of PPD-affected mothers do not receive a diagnosis for a variety of reasons. Depressed mothers might not feel comfortable

talking about their feelings or recognizing the signs of depression, and they might not be aware of PPD (Dennis & Chung-Lee 2006). The mother could be discouraged from getting therapy because of depression itself (such as fatigue and lack of enthusiasm). Due to the stigma associated with mental health issues, for instance, some mothers may encounter obstacles while trying to get care (Dennis & Chung-Lee 2006). They could worry that their ability to be a mother would be questioned. In Finland, young adults like these mothers seem to have difficulty accessing care because of delays in seeking help and termination of therapy (Kasteenpohja et al. 2015)[51]. Additionally, clinically helpful screening techniques may not be adequate, and there may be a lack of information regarding the antenatal risks of PPD in maternity care facilities (Austin & Lumley 2003). Another factor that may prevent women from discussing their mental health is a lack of opportunity and encouragement (Mohammad et al. 2011). Last but not least, it's possible that mental health services for depression therapy don't work well (Kasteenpohja et al. 2015)[51]. and it's possible that the mother is underinformed about the available mental health options. It may be unexpected and particularly challenging for the mother and the maternity care experts to detect PPD when it is the mother's first depressive episode.

b) Prevention

According to a growing body of research (O'Hara & McCabe 2013, Ko et al. 2017), screening for PPD with sufficient care and support benefits both women and their families. The care provided by antenatal and postnatal clinics should include prevention and treatment and be tailored to the various circumstances faced by women. Collaboration across obstetric, pediatric, and primary care clinics is advised, particularly for symptomatic women (Ko et al. 2017). According to O'Hara and McCabe (2013)[52], preventive programs can be categorized into three groups: universal (all pregnant women), selected (presence of potential risk factors like primiparity or low SES), and suggested (existence of depressed symptoms but no

diagnosis). An prenatal psychosocial evaluation (screening) may raise doctors' awareness of psychosocial risk, and routine antenatal psychosocial assessment may enhance perinatal mental health on its own, according to Austin et al. (2008) in a Cochrane systematic review. Additionally, psychosocial and psychological interventions for avoiding PPD considerably lower 44 the number of women who acquire it, according to a Cochrane systematic study (Dennis & Dowswell 2013). Provision of thorough, professionally-based postpartum home visits and telephone-based peer assistance are examples of promising therapies (Dennis & Dowswell 2013). A 50% chance of relapse exists for women who have already experienced PPD (Kim et al. 2014). Only one randomized, placebo-controlled trial (N = 22) was found by Kim et al. (2014) among pharmaceutical trials that showed success in preventing PPD. Recurrence rates were 7% (group receiving sertraline) vs. 50%. (placebo group). According to Kim et al. (2014), antidepressant medication prophylaxis may be necessary depending on the severity of the prior depressive episode. Kim et al. (2014) advise beginning right after after delivery. The effectiveness of estrogen in preventing recurrent PPD has not undergone a thorough analysis (Dennis et al. 2008).

c) Treatment

Pharmacotherapy and psychological counseling are used to treat PPD. Because mothers are not always capable of making decisions, clinicians play a crucial role. According to a study by Patel and Wisner (2011), 55% of postpartum depression women preferred treatment with drugs plus counseling, whereas the remaining 25% wanted counseling alone, 22% no treatment, 8% pharmaceuticals, and 7% were undecided about their choices. According to O'Hara and McCabe (2013), there are four main methods for treating PPD psychologically: general counseling, interpersonal psychotherapy, cognitive behavioral therapy, and psychodynamic therapy. These interventions could be group or individual therapies. There is no proof that one method of treatment is superior to all others because PPD responds to a

number of treatment approaches (O'Hara & McCabe 2013). Additionally, given the numerous demands on the time and energy of depressed moms of newborn infants, there may be added value in making therapies as brief and concentrated as feasible (O'Hara & McCabe 2013)[52]. In their extensive Danish study, Munk-Olsen et al. (2012) discovered that women received less antidepressant medication one year after giving birth than women of reproductive age in the general population. Sharma and Sommerdyk (2013) conducted a review and concluded that the controlled randomized data from three trials did not support the idea that antidepressants are effective in PPD, though it is possible that they are effective in a subgroup of mothers with unipolar depression that is strictly defined. Additionally, pooled estimates for response and remission in a Cochrane systematic review (Molyneaux et al. 2014) covering antidepressant treatment in six trials were more optimistic, and selective serotonin reuptake inhibitors (SSRI) were significantly more effective for women with PPD than placebo. The evidence's quality, however, was found to be quite poor. More randomized controlled trials with bigger sample numbers and longer follow-up, as well as assessments of the influence on the child and safety of breastfeeding, were found to be necessary (Molyneaux et al. 2014). Antidepressants are also recommended as the first line of treatment for women with mild to severe PPD by Kim et al. (2014). Additionally, in severe or treatment-resistant instances, adjuvant therapy with benzodiazepines, antipsychotics, and mood stabilizers may be possible, per the general treatment guidelines (Kim et al. 2014). The use of estrogen therapy is controversial. In women with severe depression, estrogen therapy was linked to a higher improvement in depression than a placebo, according to a study by Gregoire et al. from 1996. The use of estrogen medication for the treatment of severe PPD may, however, be of only limited benefit, according to a Cochrane systematic review published in 2008 by Dennis et al. In cases of severe PPD, electroconvulsive therapy (ECT) is the preferred treatment. In their evaluation of eight research and eight case reports, Gressier et al. (2015) found that ECT is

beneficial for treating postpartum problems, particularly depression. It responded quickly, was well tolerated, and was safe for nursing mothers. Additionally, a recent Swedish study (Rundgren et al. 2018) found that the response rate to ECT was higher during the postpartum period than outside of it for depressed patients (N = 99) with a matched control group. The severity of symptoms was the key factor in the prediction of response.

Another study examined the obstacles to receiving help and the treatment preferences that are connected to the mental disorder of postpartum depression. A qualitative systematic evaluation of the literature was undertaken by Dennis and Chung-Lee to determine perceived barriers to postpartum depression therapy among mothers and their choices for care (2006). The authors came to the conclusion that one of the major obstacles to getting aid was women's reluctance to express their emotions, which was frequently exacerbated by family members' and medical professionals' hesitation to address the mother's needs. Lack of awareness about postpartum depression was another obstacle to getting care. A number of the impediments to health services were also acknowledged. Culturally insensitive services and a lack of integrated services are to blame for many of the shortcomings in health care in underprivileged communities.

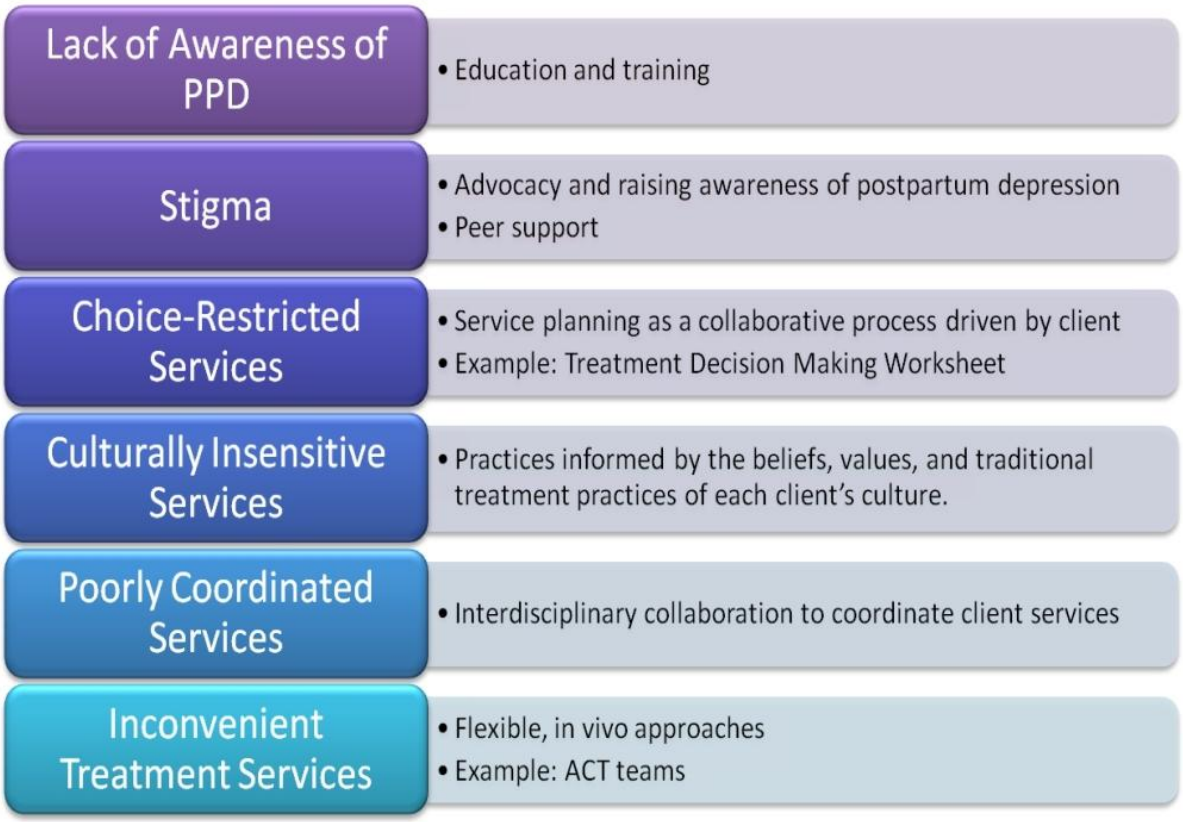

Figure 3: Barriers to Postpartum Depression Treatment (Johnson, 2011)

2.1.8 Social Resilience on postpartum Depression

As was already said, social support can be quite important in preventing postpartum depression. Social support is a term that can mean many different things, but generally speaking, it refers to the bonds formed between people or groups of people that affirm a person's identity by giving them feedback on how they behave, supporting them when they are going through a difficult time emotionally, giving them the resources they need, and helping them with daily tasks (Israel, 1982). In one study comparing the rates of postpartum depression in Hispanic and African American mothers, the researchers found that even after controlling for mitigating factors like socioeconomic status, education, marital status, and age, the rate of postpartum depression in African American mothers was still alarmingly higher than that in Hispanic mothers, which they linked to a rise in social support in Hispanic mothers (Segre et al., 2006).

Social support is not the same as social networks, despite the understandable influence that social support has on postpartum depression rates and risk. Social networks, as opposed to social support, place more of an emphasis on the connections between individuals and groups than do interpersonal relationships (Pershing & Austin, 2015). A social network can be formed by the collective impact of social support, but not all of the contacts that can occur therein necessarily result in social support (Israel, 1982). Depression symptoms have been linked to having a small social network, inadequate social support, and few close relationships (Kawachi & Berkman, 2001). Research has demonstrated that social networks directly impact mental health and help to reduce psychological stress (Greenblatt et al., 1982). Surkan et al. (2006) looked more closely at how social networks and support affect postpartum depression rates in metropolitan areas. According to their findings, postpartum depression was more prevalent in women without a social network, including social support, than in those who had at least two types of social support both during and after pregnancy (Surkan et al., 2006).

The main impact model, which is seen in the following graphic, is one theory that examines how social interactions affect health outcomes (Cohen & Wills, 1985). This model aids in illuminating the various ways that social support and networks can impact an individual's mental health and subsequent health consequences. By simply introducing them to education and knowledge that may lead to health prevention or diagnosis, or by giving them reinforcement or an increased desire to want to participate in health behaviors that will be helpful in reducing negative health outcomes, having a social network can help to introduce and promote positive health behaviors in an individual (Kawachi & Berkman, 2001).

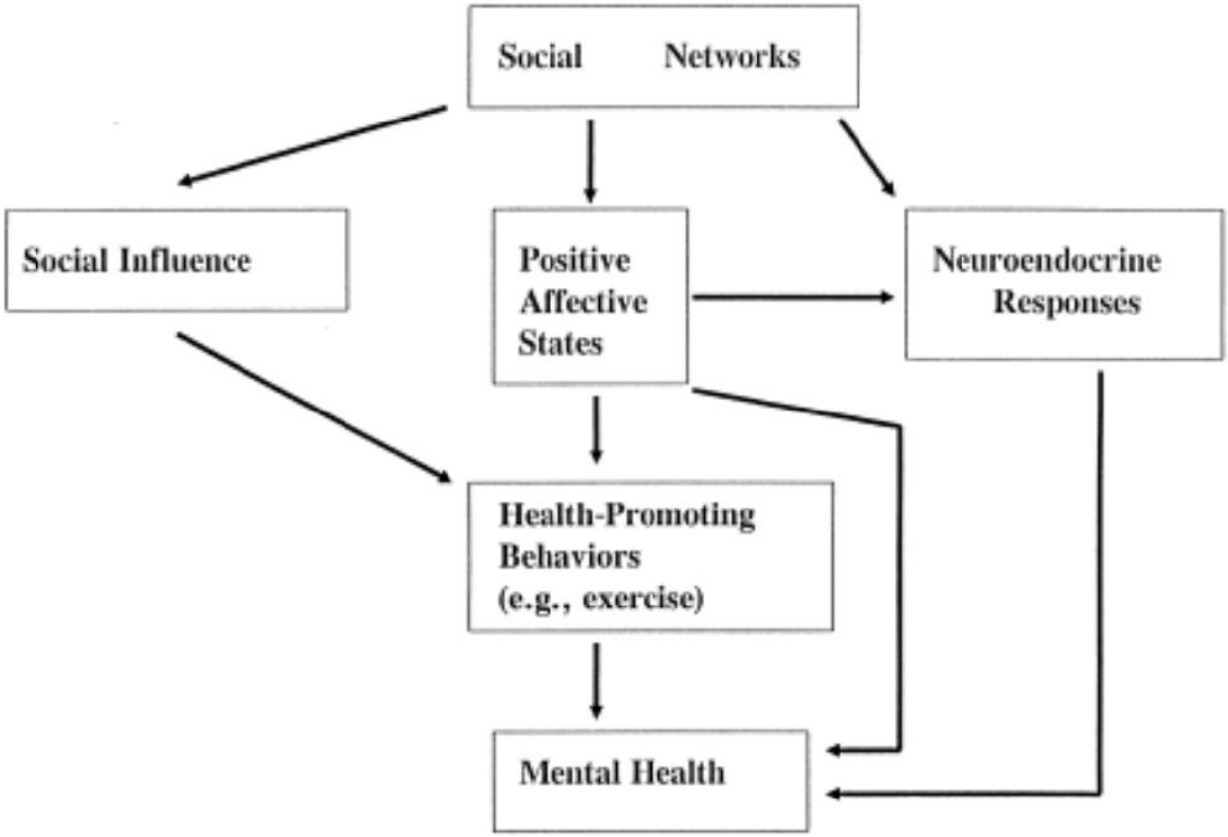

Figure 4: Main Effect Model of Social Ties and Mental Health (Cohen & Wills, 1985)

We must evaluate the social networks that are accessible to women in underserved communities in order to ascertain whether the absence of a social network or the shortcomings in an existing social network may have an impact on the postpartum depression rates in the area. Social networks, including social support, can play a crucial role in reducing psychological stress in an individual.

2.1.9 Diagnosis of Postpartum Depression

There is disagreement on the definition of the term PPD in both clinical practice and research. The classification of disorders or various rating systems are the basis for the definition of PPD. After childbirth and at other times, the Diagnostic and Statistical Manual of Mental Disorders (4th edition, text revision) (DSM IV-TRdiagnostic)'s criteria for a Major Depressive Episode (MDE) include five (or more) of the symptoms listed below: at least two

weeks of persistently low mood and/or loss of interest or pleasure, increased or decreased appetite, sleep disturbance, psychomotor agitation or retardation, low energy, and feelings of hopelessness. Depressed mood or loss of interest or pleasure must be present in at least one of these. Every needed symptom must reflect a change in respect to prior activities. The phrase "postpartum onset" is used by the DSM-IV-TR to describe major depressive disorder (MDD), bipolar disorder, or short psychotic disorder that occurs during the first four weeks of giving birth (APA 2000).

The fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) utilizes the term "peripartum onset" to describe MDD that manifests during pregnancy or within the first four weeks after giving birth (APA 2013). It acknowledges that PPD can start during pregnancy as well. The criteria for postpartum depressive episodes are comparable to those in the DSM-IV-TR and 20 DSM-V, according to the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) (World Health Organization (WHO) 2016), but it recognizes symptom onset within the first six weeks postpartum, during the puerperium period. For diagnosing PPD, a clinical interview is the gold standard. A well-known and often used tool is the Structured Clinical Interview for the DSM-IV Axis I Disorders (SCID-I) (First et al. 2002). Self-report measures, however, have been utilized in numerous investigations. Because it is highly validated, the Edinburgh Postnatal Depression Scale (EPDS) is frequently used in research and screening. Its sensitivity and specificity are adequate at various cut-off values for various purposes (Cox et al. 1987, Murray & Carothers 1990). For a threshold score of 12/13, the initial article on the EPDS claimed a sensitivity of 86% and a specificity of 78%. (Cox et al. 1987). Their data indicate that a threshold of 9/10 may be adequate for routine usage by primary care practitioners, and failure to detect instances can be reduced to under 10% with a cut-off score

of 9/10. (Cox et al. 1987). The self-report Beck Depression Inventory (BDI) is the second most often used tool for defining PPD (Beck et al. 1961). Given that some symptoms, particularly bodily symptoms like food, sleep, and exhaustion, represent normal postpartum adjustment and may lead scores to be inflated, the specificity of the BDI is in dispute (Affonso et al. 2000, Campbell & Cohn 1991, Halbreich & Karkun 2006). Regardless, the moderate agreement between the EPDS and BDI indicates that the measures have complimentary functions for screening and assessment (Affonso et al. 2000). Studies have shown that the postpartum period can last anywhere between a few hours after delivery and a full year (Halbreich 2005, Stuart-Parrigon & Stuart 2014). According to Halbreich (2005), postpartum phenomena, symptoms, and complaints are linked to biological and psychological processes and are only regarded as postpartum when they last. Each person's specific personal time period is different (Halbreich 2005).

2.1.10 Maternal Well-being

The WHO (2008) reports that maternal health is becoming increasingly recognized on a global scale as a significant public health issue. Every woman has a fundamental right to maternal mental health, which is important for both the women's and the children's psychological wellbeing. Despite widespread awareness, maternal mental health has not been a top concern for Nigeria and other developing African nations (WHO, 2008). According to the WHO (2008), the following elements make up the definition of maternal mental health:

a) the physical element (working productively and fruitfully),

b) emotional element (realizing one's abilities),

c) mental element (coping with normal stresses of life), and

d) the social component (contributing to the community).

Achieving five of the eight MDGs is thought to depend heavily on maternal mental health (WHO, 2010). The WHO (2008) classified depression, anxiety, and somatic problems as common prenatal mental disorders (CPMDs). They further identified CPMDs as one of the major factors contributing to prenatal and postpartum impairment. CPMDs impact both the mother's and the child's quality of life (WHO, 2008).

One of the most common and harmful effects of pregnancy and childbirth is perinatal depression (WHO, 2009). PPD is the most prevalent serious postpartum disorder, with 14.5% of women experiencing a new episode of major or minor depression within the first three months after giving birth, and 10% to 20% of mothers believed to experience depression at some point in their postpartum course (Gjerdingen & Yawn, 2007)51.

Despite the potential for significant repercussions, PPD has poor rates of diagnosis and treatment, largely due to lack of awareness (Gjerdingen & Yawn, 2007). Even among health experts in Nigeria, PPD is not well recognized, thus there is a need to improve understanding and treatment of the disorder (Owoeye, Aina, & Morakinyo, 2004).

Nigeria's maternal healthcare system is eclectic, with orthodox, religious, and traditional healthcare practitioners. Additionally, you can get maternal healthcare from neighborhood injectionists, traveling drug salespeople, and licensed pharmacists. Some of these healthcare professionals inject women for a charge while the victims are fully clothed, occasionally in

buses, markets, streets, and car parks. Another common treatment choice for women is spiritual healing, which frequently involves the laying on of hands, ingesting objects that have been prayed over, holy water, oil, incantations, and prayer. Open-air gatherings and religious crusades, which are frequently promoted in the media as opportunities for barren women to get pregnant, the bewitched to be set free, the blind to see, and the demonic to be exorcised, occasionally feature spiritual or faith healing.

The total number of formal healthcare facilities in Nigeria, according to the Federal Ministry of Health (FMOH), was 23,640 in 2005. The majority of these (85.5%) were institutions for primary care. Facilities at the secondary and tertiary levels made up 14% and 0.2% of the total number of facilities, respectively. According to the Nigerian Ministry of Health, the functional level of a healthcare facility is a gauge. The lowest degree of care is offered by primary care institutions, and the highest level is offered by tertiary care facilities. Approximately 77% of the population relies on the services of private providers for healthcare, despite the fact that only 38% of formal health care institutions are privately owned.

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Treatment is routinely postponed or held prisoner until further payment is provided when such deposits are depleted. Regarding the public system for maternal health care, local government entities are in charge of creating, running, and delivering public primary health care (PHC) services, with assistance from the National Primary Health Care Development Agency (NPHCDA). Additionally, preventive maternal health initiatives are managed by local governments, including community health education, sanitation, and hygiene programs. State governments are responsible for secondary care, however many states also provide primary and tertiary maternal health institutions. States help local government health programs and facilities by training medical staff and offering technical assistance in health-related issues. States are also in charge of putting national maternal health policy into practice and enforcing rules for treatment in local governments.

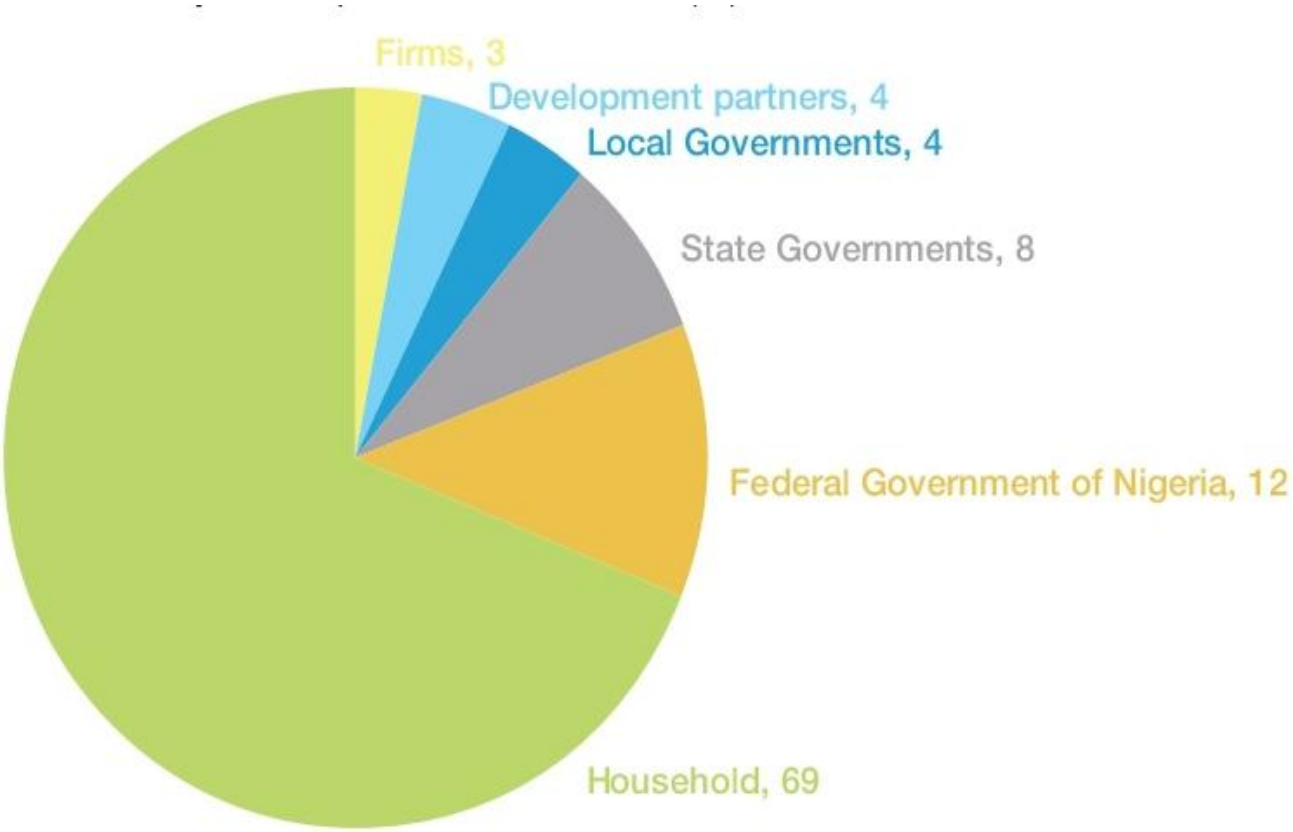
Tertiary care in Nigeria is essentially the responsibility of the federal government. It also develops national policies and guidelines for maternal health, supervises the standardization of maternal care delivery, trains medical professionals, offers technical support to states for health-related issues, keeps an eye on how states are carrying out federal health regulations, and manages the development and management of vaccines. However, Nigeria's current system for providing maternal health services is rife with difficulties. For instance, although being at the core of the national health system, primary maternal health care (PMHC) is controlled by local government entities, many of which lack the necessary funding to do so. The weak maternal health care system continues to be under strain from unsustainable population growth at all levels of care. Other significant issues include the low retention of

qualified maternal health practitioners, the poor coordination of maternal health care, the ineffective referral and regulatory systems, and insufficient funding. The distribution of official maternity health institutions varies regionally as well. For instance, whereas the majority of formal private medical facilities are found in the urban and southern sections of Nigeria, the northern and rural regions host the majority of public primary maternal health care facilities.

Additionally, despite being a signatory to the 2001 Abuja Declaration, which calls for a minimum annual national budgetary allocation of 15% to health, Nigeria has consistently had very low health spending relative to total government spending, accounting for only 6% of the annual national budget on average over the past 15 years (Figure 3), less than half the Abuja target spending. Nigeria now spends only approximately $1 per person year on health, much less than the US$34 per person recommended by the international community.

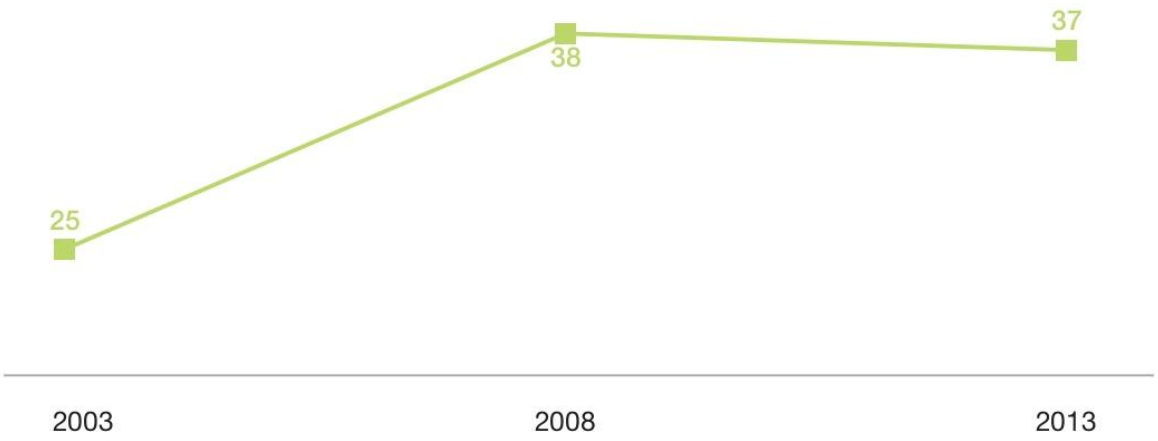
Additionally, although the majority of Nigeria's health system's funding comes from the government, private businesses, and development partners, out-of-pocket (home) expenses continue to make up the majority (69%) of health payments (Figure 5). This implies that, among other things, the price of healthcare is still directly borne by people and households.

Figure 5: Sources of health system expenditure, 2003–2005 (%)



Source: Federal Ministry of Health (Nigeria's National Strategic Health Development Plans, 2010–2015)

Figure 6: Postnatal care utilization in Nigeria, 2003–2013 (%)



Source: Federal Ministry of Health (Nigeria's National Strategic Health Development Plans, 2010–2015

2.1.11 Access to Health Information in Rural Areas

In order to achieve the stated Millennium Development Goals and health information for all, population access to health information is essential (Godlee et al, 2004). Access to health information is still quite difficult for many rural populations, especially in Africa (Anasi, 2012; Kreps, 2005; Harris et al, 2006; Chang et al, 2004). For instance, studies by Opeke (2004) and Mabawonku (1998) demonstrate that more people indicated their want for additional health information on how to protect oneself from contracting HIV as a result of the increased HIV/AIDS infections. The public's access to and transmission of health information has demonstrated to be greatly facilitated by mass media and the internet. However, these technologies work best in communities where the majority of people have access to the internet, TVs, and/or radios and when literacy rates are high. Additionally, the majority of the studies conducted to date on patients' access to and seeking out of health information have been based in developed nations, with a focus on chronic diseases like cancer, stroke, and others (Borgers et al., 1993; Beaver et al., 1996; Carlsson, 2000; Brereton and Nolan, 2002; Beresford and Sloper, 2003; Andreassen et al., 2005; Hack et al., 2006);

and the literature for these trials were conducted in areas with very high internet penetration rates, stable healthcare systems, and adequately staffed and furnished medical facilities. People typically have a variety of options for getting the necessary health information, from personal/family GPs to online resources. for example, when a person does not feel comfortable asking their doctor for health information, they may easily turn to other sources, such as magazines, or utilize their phones and/or computers to do an online search and find the information they need. In developing nations (Pallikadavath et al., 2004; Navaneetham & Dharmaligham, 2002; Sharma, 2004; Raghupathy, 1996) where the majority of people have access to quality health services and internet services, this may also be the case for educated, affluent urban dwellers (Pallikadavath et al., 2004; Navaneetham & Dharmaligham, 2002; Sharma, 2004;

The poor, secluded, and marginalized groups in developing nations, on the other hand, experience the opposite. Well-equipped health facilities in these locations tend to be far away, while adjacent institutions are incredibly understaffed with inadequate medical supplies and equipment. This is in addition to bad road infrastructures and power outages. Additionally, due to poor connectivity, these locations lack access to TVs, radios, and online health resources. The only reliable sources of health information left in these places would therefore be the local medical staff or radios. However, due to the fact that the majority of healthcare institutions are understaffed, it is extremely doubtful that the few health professionals on hand will be able to meet the patients' and locals' informational needs. This suggests that for persons particularly expectant women living in non-urban locations, access to professional health information may not be the best option. As a result, the majority of individuals turn to local or traditional support (Kwesigabo et al., 2012), to those who are knowledgeable about the health issue or have dealt with a scenario similar to it in the past.

However, the continued high rates of maternal mortality in Tanzania and the developing world as a whole make it essential to provide comprehensive maternal health information.

Previous research demonstrates that a lack of knowledge about pregnancy danger signs greatly increased the proportion of maternal mortality brought on by pregnancy-related issues and induced delays in seeking obstetric care (Nikiéma et al., 2009).

Every pregnant woman should be educated on pregnancy danger signals, proper nutrition, breastfeeding, family planning, and contraceptives to ensure the health of both the mother and the unborn child.

However, due to a number of contextual, cultural, and demographic factors, women in non-urban areas have very limited access to health information (Nikiéma et al., 2009). The majority of women are prevented from obtaining and gaining access to information about maternal health by understaffed health facilities, poverty, norms, and cultural practices. Therefore, it is crucial to comprehend how these women acquire knowledge about maternal health and how it affects their decisions over how to use healthcare services. The research findings will be used to develop strategies that guarantee underserved communities are reached and become active users and seekers of health information. In order to create a society that is knowledgeable and responsible for its health, one that makes better-informed health decisions and adopts healthy behaviors, healthcare practitioners should make every effort to address the health information needs of the rural population (Warner and Procaccino, 2004).

2.1.12 Factors Affecting Pregnant Women's Healthcare Utilization Behaviour

The inclination of a person to seek medical attention when unwell, regardless of the type of care received (formal healthcare from trained health professionals or informal healthcare from traditional healers) (Ahmed et al, 2001).

People do, however, vary in their desire to seek medical attention at the first sign of disease; some go voluntarily for treatments anytime they feel unwell, while others do so only when the pain is more severe or persistent, and some do so when their condition is further advanced (Ahmed et al, 2001). People's beliefs, satisfaction with, and/or perceptions of the health issue all have an impact on how they respond to being unwell.

Pregnant women deal with ill-health conditions throughout pregnancy in different ways depending on their circumstances, just like they would with any other health condition. However, the most optimal health-seeking behavior is for pregnant women to seek assistance from competent medical personnel as soon as they have a health issue in a formal health care institution (MacKian, 2003). However, most women in underdeveloped nations, especially in rural areas, frequently chose traditional support over expert one as their initial point of care (Kwesigabo et al, 2012; Ahmed, et al, 2001).

According to the research, a number of characteristics, including age, parity, education, access to media, cost, and women's position, have a significant impact on how women seek out healthcare, which in turn affects how they respond to illnesses (LaVeist et, 1995; Perloff et al, 1999; Navaneetham and Dharmalingam, 2002; Tsawe et al, 2015). For instance, younger women who have just begun having children are more likely than older women to request skilled presence at birth (Mpembeni et al, 2007). The lack of prior childbearing experience may be the cause of their aversion to home delivery. It might also be because younger generations tend to see skilled maternal services more favorably than previous generations because a large number of them have access to formal education (Navaneetham

& Dharmalingam, 2002; Mpembeni et al, 2007). However, other studies found that older women were more likely than younger ones to seek out and use skilled maternity care, which may be because they have more experience and knowledge about the value of such services or because they have more decision-making power (Reynolds et al, 2006; Bell et al, 2003; Elo, 1992; Leslie & Gupta, 1989; Navaneetham & Dharmalingam, 2002; Glei et al, 2003; Burgard, 2004; Mesfin & Farrow, 1996; Reynolds et al, 2006; Tsawe et al, 2015).

Another important predictor of pregnant women's behavior in terms of seeking maternal healthcare is personal experience with prior pregnancies. Women who had previous regular home births, whether they were self-assisting, receiving assistance from a family member, or receiving TBA, tend to believe that expert presence at birth is not necessary (Zelalem et al, 2014; Navaneetham & Dharmalingam, 2002; Celik & Hotchkiss,2000). They decide against expert delivery for their subsequent pregnancies as a result. Additionally, research demonstrates that high parity women are less likely than their low parity counterparts to seek competent maternal care services due to their trust in their prior experience giving birth (Tsawe et al, 2015; Celik & Hotchkiss, 2000; Abbas & Walker, 1986; Bell et al, 2003; Mesfin & Farrow, 1996; Kwast & Liff, 1988). Due to the uncertainty and perceived high risk of first pregnancies, several studies have shown that women are more inclined to seek professional delivery for their first pregnancies than for subsequent ones (Wong et al, 1987; Elo, 1992; Chakraborty et al, 2003; Nigussie et al, 2004; Kamal, 2009).

The education level of a particular pregnant lady is another crucial factor in predicting her propensity to seek medical attention. Previous research demonstrates that educated women are more likely than less educated ones to access competent maternal health services

(Cadwell, 1979; Chakraborty et al, 2003; Celik & Hotchkiss, 2000; Elo, 1992; Schultz, 1980; Kamal, 2009; Leslie & Gupta, 1989; Govindasamy & Ramesh, 1997; Mpembeni et al, 2007; Fotso et al, 2009; Nigussie et al, 2004;Tsawe e al, 2015). According to some theories, the higher usage among educated women may be attributable to their increased exposure to media and information about maternal health, which has given them a sufficient grasp of the value of expert maternity care as well as where to find it (Raghupathy, 1996; Mpembeni et al, 2007; Obermeyer & Potter, 1991). High levels of education also boost a woman's control over her health and her confidence in making decisions about her health and the health of her kid (Raghupathy, 1996). As they are typically the main household decision makers and income managers who prefer to choose where and when to seek care, spouses' educational levels also play a substantial effect in how frequently women access expert maternity healthcare. Women from households where one spouse has a reasonably high degree of education likely to use expert services more frequently than women from households with lower levels of education (Raghupathy, 1996; Rani, 2003; Gage & Calixte, 2006).

Additionally, it has been discovered that one of the biggest obstacles to obtaining healthcare, particularly for those residing in non-urban areas, is the distance to the closest medical facilities (Magadi et al, 2000; Glei et al, 2003). Due to inadequate road infrastructure and a lack of convenient transit options, distance has a significant negative impact on rural communities, which discourages residents from getting medical care. Distance to medical facilities is frequently linked to type 2 delay, which is a delay in getting to a medical institution. However, it also adds to type 1 delay, where it discourages women and/or caregivers from seeking care, delaying their decision (Thaddeus and Maine, 1994). The literature also demonstrates that other factors, such as care fees, cost, and perceived quality of treatment, moderate the influence of distance. For instance, a research conducted in Kenya

found that despite shorter travel times to health facilities due to better road infrastructure, the use of expert services did not increase (Airey, 1992). That is, regardless of how far away health facilities are, pregnant women can still use health services efficiently if they are encouraged to do so by the high quality of care and low cost of care.

According to earlier research, the most important predictor of pregnant women's use of maternal healthcare is the expense of seeking healthcare. It is also linked to the distance to medical services, particularly for women who live far from medical facilities and spend more on transportation than those who do (van Eijk et al, 2006). When additional adults and additional children accompany the woman since there aren't enough babysitters at home, the price is significantly greater (Thaddeus and Maine, 1994). The main barrier preventing the majority of low-income pregnant women from using competent maternal health services has been the cost of health services, such as delivery equipment and laboratory examinations (Overbosch et al, 2004; Mumtaz and Salway, 2005; Myer and Harrison, 2003). According to a study conducted in Bangladesh by Chowdhury et al. in 2003, offering free or discounted maternal services to urban low-income women enhanced their use of ANC. Furthermore, because low income households typically have less money, the cost of accessing healthcare has a greater impact on them. The research also indicates that high-income pregnant women are more likely than their low-income counterparts to begin ANC early and receive enough ANC throughout the pregnancy (Magadi et al, 2000; Obermeyer & Potter, 1991; Mpembeni et al, 2007).

Additionally, it has been discovered that social support from family and community members has a substantial impact on how often women use maternal health services (Erci, 2003). Two

times as likely as socially supported women not to use ANC services are women from families and communities that provide little to no support to pregnant women (McCaw-Binns et al, 2007). Pregnant women from homes where the mother-in-law had a highly negative impression of ANC were less likely to use the ANC services than those from families where the mother-in-law supported ANC, according to a study conducted in Bangladesh (Chowdhury et al, 2003). Additionally, women's decision to seek care is greatly influenced by the absence of home help, individuals to look for other children, and companions to accompany them to medical facilities (Thaddeus and Maine, 1994).

However, research indicates that women's media exposure has a big impact on how much they use competent maternal services (Navaneetham and Dharmalingam, 2002; Sharma, 2004; Pallikadavath et al, 2004). Women who are more exposed to media, such as TV, radio, and the internet, are more likely to visit the ANC more frequently than their peers who are less exposed (Navaneetham and Dharmalingam, 2002). According to studies conducted in India and Nepal, women who watch television at least once a week are substantially more likely to use ANC services than those who don't (Sharma, 2004; Pallikadavath et al, 2004).

Moreover, women's use of healthcare services and care-seeking habits are greatly influenced by the standard of care, healthcare providers' compassion for patients, support, and willingness to offer the necessary assistance to patients (Harris and Dewdney, 1994). The body of research demonstrates that women's unwillingness to seek out skilled care facilities is influenced by their negative attitudes of skilled services and care providers (Simkhada et al, 2008). Most women avoid accessing expert maternity services due to perceptions of the quality of care (such as a lack of medications and necessary supplies) and the unfriendliness of care personnel (Mathole et al, 2004).

According to other studies, a woman's status in society affects how autonomous she is while making decisions about her health. Women tend to use competent maternity services at very low rates in communities where they are viewed as weak social beings who should not be allowed to participate in any decision-making. Studies in the majority of developing nations demonstrate that women typically do not opt to seek care on their own; instead, the decision is typically made by the spouse or another senior family member (Thaddeus and Maine, 1994). For instance, a study conducted in rural Nigeria revealed that women in rural Kano refrain from receiving ANC services mainly because their male partners forbid it (Adamu & Salihu, 2002). The research also indicates that women from male-headed households are less likely than women from female-headed households to receive competent maternity health services (Simkhada et al, 2008).

Last but not least, cultural norms have a big influence on how women make decisions, especially about where to give birth (Warren, 2010). Cultural barriers have been a major factor in many cultures' decision to seek care, according to studies (Mekonnen and Mekonnen 2003; Kwast and Liff 1988; Warren 2010; Seifu, Gebrehiwot and Fantahun 2011; Shimeka, Mazengia and Woldeyohannes 2012; Karim et al. 2010; Stephenson et al. 2006). Different aspects of culture have an impact on health behavior. For instance, culture affects how people respond to illness (Dawitt, 1994 as cited by Kitts, and Roberts, 1996; Erinosho, 2005). Women may be deterred from seeking care to avoid pregnancy complications or treat them once they arise if they believe that illness is a punishment from God or that the outcome of their pregnancy is predetermined by God/Allah. Other cultural aspects include gender standards, early marriage and pregnancy, specific birthing customs, female genital mutilation, widow inheritance, and taboos around diet, particularly during pregnancy (Idowu, 2013). These variables influence the choices women make regarding their reproductive health,

including the number of children they desire and the spacing between pregnancies. The majority of women do not always receive the assistance they require to meet their reproductive needs. In some situations, women turn to covert procedures, such as using family planning, out of fear of retaliation from their spouses or other people (UNFPA, 2000).

Additionally, beliefs regarding proper behavior can limit access to health information and care and degrade the quality of both. Women are prevented from discussing their health needs and concerns due to direct taboos and unintentional constraints, and those who find it difficult to socialize may have trouble locating health information and taking proactive efforts to ensure their pregnancies are safe. Many rural communities regulate the behavior of women by enforcing traditions that prevent them from making decisions independently before consulting their husbands (Kowalewski et.al, 2000). Due to these limitations, women must rely on the judgment of others when deciding whether to seek medical attention, delay or prevent conception, have prenatal exams while pregnant, or make arrangements for a skilled delivery attendant. It can be challenging for women to express worries about their reproductive health; issues like irregular menstrual bleeding are particularly challenging to talk about (Idowu, 2013). Because of this, some women wait until their symptoms are severe and their treatment options are expensive and limited to address their issues (UNFPA, 2000).

The most frequent issues that can significantly raise a woman's chance of giving birth are: delays in problem recognition, delays in taking action, and delays in seeking help due to false beliefs about pregnancy (Thaddeus and Maine, 1994). According to a study by Idowu (2011), the majority of women thought that having health issues during pregnancy was typical, and as a result, they were less likely to seek out appropriate antenatal care.

When it comes to how individuals seek healthcare, cultural beliefs are a crucial factor to take into account, especially in rural areas where culture defines and explains what causes specific illnesses, how it can be treated, and who should be consulted. People's responses to knowledge and preparedness to apply it are also influenced by how they perceive how a particular piece of health advice will impact their culture or whether it is relevant to their cultural beliefs. In accordance with their views and cultural norms, people typically accept or reject information concerning health concerns in ways that are acceptable to their society. Consequently, it is essential for providers of health information to incorporate information that is culturally appropriate (Kahan et al, 2009). Socio-cultural traditions challenges must be addressed and, in some cases, incorporated into facility-based care in order to successfully encourage pregnant women to use skilled healthcare services (AbouZahr and Wardlaw 2003; Stanton et al, 2007).

Some of the most significant obstacles to women's effective usage of competent maternal health services in developing countries that have been found in the literature are listed above (Goldenberg et al, 1992). Nevertheless, depending on the situation and the population being studied, the effects of each barrier on women's behaviors regarding the utilization of maternal care can vary. In order to overcome the obstacles present in the particular society, context-specific strategies and solutions are required to address the issue of underutilization of skilled maternal services. Unfortunately, the majority of health policies and interventions have been concentrating on removing obstacles for healthcare providers (e.g., by training more healthcare professionals and expanding access to healthcare facilities, supplies, and equipment) while ignoring the numerous obstacles that patients face when seeking healthcare,

especially those who are low-income and live in rural areas (Ensor and Cooper, 2004). To design long-term solutions that will encourage the use of skilled healthcare services among these groups, it is essential to have a clear understanding of the context-specific elements that affect the use of skilled healthcare services.

2.1.13 Maternal Health Programs in Nigeria

Different programs and policies have been developed by successive Nigerian governments to address the nation's poor maternal health outcomes, building on a variety of international maternal health initiatives as well as locally felt needs. These initiatives have generally aimed to raise the standard of maternity care provided in facilities, increase women's access to and use of services, remove obstacles to care, hone providers' skills, and encourage households and communities to make use of the proper maternal services. We highlight some recent maternal health care initiatives in Nigeria in the section that follows.

1. Midwives Service Scheme

To achieve better maternal health outcomes, there must be a sufficient supply of skilled medical professionals with midwifery training. Nigeria introduced the Midwives Service Scheme (MSS) in 2009 as a result of this. The MSS recruits and assigns competent midwives to healthcare facilities in an effort to solve the scarcity of skilled birth attendants. The MSS is intended to make sure that each primary healthcare institution covered by the program has at least four midwives who can give pregnant and nursing women with medical care around-the-clock. 815 healthcare facilities, including 652 PHC facilities and 163 referral and teaching hospitals, have enough midwives on staff during the first phase of the MSS. 2,622

midwives have been hired and assigned to rural PHC facilities around the nation as of this writing.

Since the implementation of the MSS, there is evidence that facility-based maternal health treatments in Nigeria are being used more frequently. For instance, between 2009 and 2013, hospital deliveries rose in rural areas. Between 2009 and 2010, the facility-based MMR decreased as well. The MSS, however, confronts many difficulties, including a shortage of competent physicians and midwives and their unequal distribution between states and regions. Other issues include keeping skilled midwives in rural areas, sporadic pay, insufficient electricity and water supplies for some institutions, and a lack of necessary medications.

1. Integrated Maternal, Newborn And Child Health (Imnch) Program

The Federal Government of Nigeria introduced the Integrated Maternal, Newborn and Child Health (IMNCH) program in 2007 to hasten the progress toward the fulfillment of MDGs 4 and 5. The IMNCH program funds initiatives like immunization, family planning, malaria prevention, nutrition, and HIV prevention from mother to child (PMTCT). Additionally, the program provides services for maternal and child mortality monitoring, referral, and auditing. The IMNCH initiative aims to accelerate progress in lowering child and mother mortality and morbidity due to its emphasis on prevention and treatment. It also offers a wonderful chance for the extension and integration of other services, such PMTCT. Despite this promise, the IMNCH program is hindered by low government backing, a lack of medications, a shortage of skilled medical staff, and inadequate coverage of underserved areas and marginalized communities.

3. Saving One Million Lives

The Federal Government of Nigeria started the Saving One Million Lives (SOML) program in 2012 with the overriding objective of improving access to crucial basic health care services for expectant and nursing mothers and their children. The program's various components include boosting the use of insecticide-treated nets for efficient malaria control, expanding regular immunization, PMTCT, enhancing nutrition, and fostering innovation and new technology. The program also aims to improve mother and child health. Despite how admirable the SOML plan is, it would need ongoing political support and sufficient funding to accomplish its intended objectives.

2.2 Theoretical Review

2.2.1 Biological Theories

Beck (2002) emphasized that the medical model, which views PPD as both an illness and a medical condition, is one of the theoretical foundations of PPD. Additionally, it is a personal pathological mood disease that is not thought to be brought on by societal or environmental factors. According to this perspective, women are biologically influenced passive individuals in the medical model. They experience depressive episodes more frequently during specific life stages. Regarding the pathophysiological hormonal effects on PPD, various ideas exist, including the withdrawal theory, interactions between the hypothalamic-pituitary-gonadal system and the hypothalamic-pituitary-adrenal system (HPA), and changes in the levels of gonadal hormones. The HPA axis evolves during the perinatal period, and there is a significant relationship between it and the female reproductive system. Through the hormonal pathway for affective disorders' reduction of corticotrophin-releasing hormone (CRH) after postpartum, it is likely that the HPA axis behaves differently in women who are prone to depression.

On the other hand, several research has shown that CRH suppression does not correlate with mood swings; as a result, it is possible that the HPA axis' role in the physiology of PPD is unfounded. Estrogen, progesterone, beta-endorphin, human chorionic gonadotrophin, and cortisol are just a few of the hormones that rise during pregnancy and sharply decrease after giving birth. PPD is brought on by sudden changes in hormone levels, such as those brought on by estrogen during the puerperium.

Additionally, some experts believe that the primary factor contributing to PPD in women is a significant fall in reproductive hormone levels that happens after delivery. According to theory, this mutation serves as a catalyst for modifications in both the peripheral and central monoamine centers. Women with a history of PPD may react differently and more sensitively to sudden decreases in plasma levels of gonadal steroids. Sudden withdrawal of these hormones may be a cause for depression. It was revealed that the plasma levels of estradiol were lower in the depressed group than in the control group. Neurotransmitters involved in emotional and cognitive processes are impacted by the hormones estrogen and progesterone. Serotonin needs to be stabilized by estrogen in order for the brain to retain more transmitters.

However, estrogen affects the serotonin, norepinephrine, and adrenaline receptors. The latter interaction may be brought on by depression and antidepressant activity and neuropeptides play a variety of roles in the brain nervous system's physiological and behavioral components (CNS). Prior to menstruation, during birth, and during menopause, estrogen levels fall.

Gonadal hormones also reduce the prevalence of depression during pregnancy. During the final trimester of pregnancy, this effect becomes noticeable. Gonadal hormone levels drop significantly within a few days following giving birth, which suggests a possible link to an

unanticipated rise in the occurrence of non-psychotic and psychotic mental illnesses. Hypogonadal levels of estrogen and progesterone, according to other research findings, are not a risk factor for PPD. The fact that depressed women respond well to serotonergic antidepressants has led some researchers to hypothesize that the serotonin (5HT) pathway plays a key role in prenatal and postnatal depression. According to the study's findings, the depressed group's 5HT1A serotonin receptor binding reduced from 20 to 28% compared to the control group. Despite the fact that many academics have come to the conclusion that PPD is caused by physiological changes, the evidence does not consistently support hormonal origins of PPD. Genetic polymorphisms in genes that control reproductive hormones may render certain women more prone to mood problems, while the genetic basis of variable sensitivity to gonadal steroids is still unknown. It has been shown that genetic components like cytochrome P4502D6 (CYP2D6) and personality are related. Under genetic control, CYP2D6 appearance is common. In comparison to the general population, the rate of CYP2D6 metabolism in expectant and postpartum depressive women was higher. In conclusion, the earlier investigations did not come to a consensus. It seems that PPD is influenced by an aberrant internal response to hormone changes.

2.2.2 Evolutionary theory

Scholars have proposed pertinent adaptive roles for PPD that are in line with the theories of evolutionists. Due to issues with the baby, marital issues, and a lack of social support in the context of the social and family milieu, women frequently feel negative impacts like a downbeat and melancholy mood. Major PPD sufferers who exhibit symptoms like psychomotor slowness, weight loss, loss of interest in previously enjoyed activities, difficulty concentrating, and persistent suicidal thoughts might choose not to seek out social support.

Additionally, the steps that women take to lessen these psychological issues put them at risk for PPD. From an evolutionary standpoint, there are instances in which it would be ideal for the mother to reduce her investment in a kid, such as when there is insufficient social support available to care for the infant or when the child has a problem.

Evolutionary theorists contend that PPD comes from an adaptive function that alerts the mother to a potential fitness cost. Therefore, PPD is an adaptive process rather than a malfunction. It indicates a mother who has experienced a social cost, prompting her to consider whether to continue or stop caring for her children. According to this perspective, PPD affects women all over the world and is a universal problem. As a result, its frequency is decreased in civilizations that give rise to the circumstances.

The strong connection between PPD and childbearing and childrearing, according to evolutionary anthropologist Edward Hagen (1999), justifies its applicability to parental investment theory (PI), a subset of life-history theory. According to the life-history theory, our predecessors would have needed to find solutions to the issues of survival, growth and development, and reproduction in order to successfully pass on their genetic material. Organisms fundamentally had to assess the advantages and disadvantages of splitting their investments between somatic effort and reproductive effort because each of these represents a distinct set of issues and because time, energy, and resources are limited. Parenting effort (care for and raising children) and mating effort (finding the right partner) are two further subsets of reproductive effort in which the organism determines how to allocate resources, time, and energy in a way that improves fitness.

In order to best improve their fitness, parents will evaluate their existing status and environment and determine whether to invest in themselves (somatic), their children, or mating prospects. Therefore, investing in a newborn child is not always the best choice because there are some situations where doing so will cost more money than doing something else. Hagen (1999) addresses two predictions about PPD that result from PI in a study titled "The Functions of Postpartum Depression." First, the mother should assess the viability of the offspring before making any investments, if and when an offspring demands a substantial expenditure. Second, she should consider how much the father will truly invest before investing herself if the child needs a considerable amount of investment from both the mother and the father in order to survive. These two hypotheses are in line with the correlations of PPD that are most frequently found to be absent father involvement and difficulties in childbirth or pregnancy. Hagen points out that while the PI theory explains why a woman may abandon, kill, or neglect a kid in these circumstances, it is unclear why she would also be likely to experience depression. Because it costs so much to support the brain's growth and development in preindustrial populations, having a child and raising it is a tremendously expensive and demanding process. Since they are reliant on their mothers for protection, nutrition, and the growth and development of their brains, human infants also need years of hands-on care after birth. It is obvious that choosing to invest in a child is not only very important but also "requires information on whether the mother's costs surpass her advantages as a functional component of her decision-making process." The human body's physical composition is the end result of a variety of adaptations that have developed for a specific purpose in resolving issues with reproduction and survival (Hagen 1999;332).

According to evolutionary psychologists, the brain evolved similarly, with a number of modifications produced by natural selection to address reproductive issues (Barkow et al.

1992; Daly & Wilson 1983, 1984; Symons 1979). Physical pain is one example of this; theorists thought it was an adaptation that evolved to warn a person when a part of their body was being harmed, to encourage them to quit the behavior that was causing the damage, and to condition the person to avoid such situations in the future. In an effort to understand the "function of psychological distress, neuroses, and depression that would compensate for their obvious costs" (Hagen 1999: 333), numerous evolutionary researchers (Alexander 1986; Hagen 1999; Nesse 1991; Nesse & Williams 1995; Thornhill & Thornhill 1989, 1990; Tooby & Cosmides 1990) have compared psychological pain to that of physical pain. In contrast to physical pain, which alerts a person to a physical injury, psychological pain alerts a person to a non-physical injury, or "social injury," which they have experienced or are currently experiencing. Such to physical pain, this psychological suffering encourages the person to quit acting in a dangerous way and steer clear of similar circumstances in the future. Hagen's theory regarding PPD is that a mother's sad or depressed mood serves as a signal that she is experiencing or has experienced "net reproductive fitness costs over evolutionary time" (Hagen 1999: 333).

According to evolutionary theory, 1) mothers do not automatically invest in every child, and 2) mothers continually weigh the fitness costs and benefits of investing in themselves, their children, or their chances of mating. She will rethink investing in a child if the expense of raising that child outweighs the fitness benefits of doing so. In other words, she might stop taking care of them and start engaging in other fitness-enhancing activities, like taking care of her other kids. According to evolutionists, PPD was the mother's first warning that she is experiencing or would experience a fitness cost. The mother practically had the means to stop raising that particular child because to the poor mood and lack of connection that are linked with PPD.

The following etiological factors, according to Hagen's defection hypothesis, could influence whether or not to invest in a child. These conditions would be consistent with an affective state that would indicate the right choice for the mother and hence predict PPD.

1. There is insufficient investment from the father or others to successfully raise the offspring.
2. There are problems with pregnancy, birth, or with the infant that indicate that this offspring may have low viability, that is, is unlikely to survive to reproductive age.
3. Environmental conditions are poor for raising an offspring (e.g. harsh winter, insufficient resources).
4. There are large opportunity costs-investment in the offspring precludes investment in other beneficial activities. In this case, investment directed toward the offspring would be more profitably directed toward:

A. Existing offspring

B. The mother's own survival, growth, and development, and thus her ability to invest in future offspring

C. Finding a better mate (Hagen 1999).

Hagen further asserts that the defection hypothesis yields five PPD-related predictions. According to the first prediction, a lack of social support should be linked to bad feelings (sad or depressed mood). According to him, there is "almost no disputing" a link between PPD and a lack of marital support. This is emphasized in a study by Field et al. (1985), who found that postpartum moms who are unmarried, have marital issues, or have believed their

husband did not love them are more likely to have depressive symptoms. O'Hara (1985) further demonstrated that fathers' marital satisfaction scores were effective predictors of PPD. The defection theory also predicts that low newborn survivability should be linked to unpleasant emotion. Complications before or during labor or delivery are a sign that the child's health or viability is in jeopardy. Therefore, it is anticipated that if the mother begins to exhibit depressed symptoms that prompt her to reassess her commitment to her kid, the infant will be considered to require additional effort that will not ensure greater survivability (Hopkins et al. 1987). Pregnancy problems and depressive mothers are strongly correlated.

The defection hypothesis makes the third prediction that unfavorable situations should be linked to bad emotions. Mothers might consider reevaluating their investment and using the available resources to invest in already born kids or their own somatic growth and health if they live in a marginal and dangerous location or they are unable to secure the resources necessary to raise a newborn. Therefore, we would anticipate that scarce resources and dangerous conditions would indicate negative effects. Unfortunately, there aren't enough data to test this hypothesis; future study will make this point clear. PPD should be widespread, according to the defection hypothesis's fourth prediction. This does not imply that PPD will be prevalent throughout all societies; rather, PPD should be minimal in societies where there is adequate social support, low or no social costs associated with defecting, a favorable environment for predictable reproduction of viable offspring, and minimal costs associated with childrearing in general. In the sections that follow, we'll go into great detail regarding this prediction and the literature that supports it. The defection hypothesis's last prediction is that PPD is not a hormonal side effect of pregnancy.

The most widely accepted folk theory holds that PPD results from changes in hormone levels that occur during pregnancy. Despite this, research suggests that PPD has very little to do with hormone alterations (Harris 1994; O'Hara 1995). Psychological pain is regarded by evolutionary theorists as an evolved psychological mechanism that alerts the individual that they have incurred or are currently experiencing a social cost or injury. This is explained above. Hagen and others think that PPD may be a byproduct of this system, assisting the mother in deciding whether or not to put money into her child. They refer to this as the "perinatal psychic pain hypothesis," which states that if a mother experiences any of the aforementioned factors during pregnancy, she should feel "perinatal sadness" and "a lack of desire to raise the child," which will prompt her to consider whether or not to invest in or seek out social and material resources so she has the means to raise the child.

2.2.3 Behavioral theory

According to the behavioral theory, significant life events that disturb a person's typical support system might lead to depressive episodes. PPD is predicted by life pressures and psychological issues such parent divorce, a lack of emotional support from parents, mother-daughter conflict, and low self-esteem. According to the notion of operant condition paradigm, depression results from a drop in effective reinforcement of positive behavior and may be an indication of overt punishment for nonconformance. The influence of various events, a reduction in the accessibility of reinforcement events, a person's ability to navigate their surroundings, or a combination of the aforementioned factors may also contribute to it. Moreover, the absence of support from family and other social networks, such as social withdrawal, may have a negative impact on social reinforcement behaviors. However, people who suffer substantial stress arising from unexpected occurrences may receive a low rate of

positive reinforcement for mood-enhancing activity and a high rate of positive reinforcement for depressive conduct.

2.3 Empirical Review

2.3.1 Postpartum Depression in the Developed Economies

Extant Literature emanating from the developed economies were reviewed.

Grussu P et al. (2009) observed that 13% of the women in their study displayed high postnatal depressed symptomatology, which is quite similar to rates of postnatal depression prevalence in the first year following childbirth reported in other Western World studies. Anxiety during pregnancy is a powerful indicator of depressive symptoms that are severe 6 to 8 weeks following delivery.

Another study was conducted by Zohreh and Masoumeh to examine the effects of postpartum depression on women's quality of life after giving birth in Iran (2013). Their research showed that postpartum depression reduces life quality at the second and fourth months after delivery, and they advised integrating PPD screening into standard postnatal treatment.

An evaluation of postpartum depression and health-related quality of life in Kuwait was required and was done by Alhamdan, N. et al (2017). The study's objectives were to determine the incidence of postpartum depression (PPD), identify its risk factors, and investigate the link between PPD and women's HRQOL in Kuwait. With a response rate of 90.6%, 658 women answered self-administered questionnaires on sociodemographic traits, recent obstetric history, the Edinburgh Postnatal Depression Scale, and the SF-12.

Their outcome reveals PPD was 45.9% prevalent (CI: 42.1%-49.8%). Low educational level, unplanned pregnancy, lack of breastfeeding, and prior PPD were significant predictors of PPD, according to a binary logistic regression study. Additionally, a strong adverse

relationship between PPD and HRQOL was shown by multiple linear regression analysis (overall, physical and mental health domains). Physical and mental health domain mean total scores decreased by 1.35, 1.23, and 1.46 points, respectively, for every unit rise in the PPD mean total score.

Additionally, in a research by Chaaya M. et al (2002). Prevalence and factors influencing postpartum depression in Lebanon. Their research evaluates the incidence and causes of postpartum depression (PPD). 24 hours and 3-5 months after giving birth, 396 women from Beirut and a rural location (Beka'a Valley) were questioned. They were assessed using the Edinburgh postnatal depression scale during the subsequent session. Although the prevalence of PPD was 21% overall, it was much lower in Beirut (16% vs. 26%) than in the Beka'a Valley. Prenatal depression and a lack of social support were significantly linked to PPD in both locations, whereas one of the areas was significantly linked to PPD by stressful life events, lifetime depression, vaginal delivery, a lack of education, unemployment, and chronic health issues.

2.3.2 Postpartum Depression in the Developing Economies

Extant Literature emanating from the developing economies were also reviewed.

In a cross-sectional online study, Myo, T. et al. (2021) used data from 220 moms who were enrolled at public health facilities in Kungyangone Township, Yangon, Myanmar, between April and May 2020 and were less than six months postpartum. The Edinburgh postpartum depression scale (EPDS, ≥13 scores) was used to assess postpartum depression. Sociodemographic factors, obstetric and baby factors, psychological factors (social support and use of social media), health service utilization, and accessibility factors were all independent variables. Multiple logistic regression and chi-square tests were used.

According to their findings, there were 220 women who were less than six months postpartum, and the overall prevalence of depressive symptoms was 31.8% (95% confidence interval [CI]: 25.9, 37.3). Preterm delivery was found to be inversely associated with PPD (AOR: 0.091) and more likely to be associated with unplanned pregnancy (AOR: 2.946), less than four antenatal care (ANC) visits, travel time greater than one hour to reach health centers, and birth interval greater than five years.

In a different study, Paddy, A. et al. (2021) used 205 postnatal women between the ages of 15 and 39 who were taken from the 37 Military Hospital in Accra. The study aimed to identify the psychosocial determinants of postpartum depression and maternal well-being among mothers in the Accra metropolis. Participants took the Depression, Anxiety and Stress Scale (DASS-21), Multidimensional Scale of Perceived Social Support (MSPSS), Marital Adjustment Test (MAT), and Edinburgh Postnatal Depression Scale using a sequential explanatory methodology (EPDS).

14.1% of postnatal women in the Accra metropolis are at risk of suffering PPD, according to their study. Anxiety, stress, and marital dissatisfaction among couples were predictors of the significant model that emerged [R2 = 0.488, F (7, 197) = 26.86, 0.05]. However, the results of the Interpretive Phenomenological Analysis (IPA) of the detailed information provided by the participants showed that inadequate social support and marital dissatisfaction account for mothers' at-risk behavior for developing PPD, which has an effect on maternal wellbeing.

In a different study, 2021, Catherine Atuhaire et al. recruited 292 mothers who were 6 to 8 weeks postpartum for a cross-sectional study between November 2019 and June 2020. Utilizing stratified sequential sampling, mothers were chosen from three health institutions in southwest Uganda and enrolled. The Diagnostic and Statistical Manual of Mental Disorders V was used to make a clinical diagnosis of postpartum depression. Using a structured

interviewer-administered questionnaire, the factors connected to PPD were evaluated. Bivariate chi square analysis and multivariate logistic regression were used to investigate the factors.

The prevalence of PPD was estimated to be 27.1% (95% CI: 22.2-32.5) across the board and was unaffected by previous deliveries or delivery method. Low perceived social support, HIV positivity, living in a remote area, obstetrical problems, and the baby screaming a lot were five characteristics linked to PPD.

Table 2.3.1: Postpartum Depression in the Developed Economies

S/N	Author(s)	Title	Underlying Variables	Methodology	Findings/Results
1	Grussu P, Quatraro RM. (2009)	Prevalence and risk factors for a high level of postnatal depression symptomatology in Italian women	maternal health status, physical activities and general health support	Correlation	The study found a significant relationship between factors such as General health availability and support, rural residence, obstetrical complications and Postpartum depression
2	Zohreh and Masoumeh (2013)	The Impact of Postpartum Depression on Quality of Life in Women After Child's Birth in Iran	mental health, vitality, general health, social and physical functioning	Correlation	There is a significant correlation between postnatal depression and maternal well-being. There is significant relationship postnatal depression and mental health, vitality, general health, social and physical functioning
3	Alhamdan, N., Abdulrahman Ajaj, A., Alali, F., & E Badr, H., (2017)	Postpartum depression and health related quality of life in kuwait: a necessary assessment	physical health status, family planning and mental health distress	Multivariate logistic regression analysis and Correlation	Finding shows significant inverse association between postpartum depression and HRQOL (overall, physical and mental health domains)

4	Chaaya M, Campbell OM, El Kak F, et al. (2002)	Postpartum depression: prevalence and determinants in Lebanon.Arch Women's Mental Health.	Social support, mental health and level if education	Regression Analysis	The study shows that level of education was not significantly associated with Postpartum depression.
5	Alasoom LI, Koura MR. (2014)	Predictors of postpartum depression in the eastern province capital of Saudi Arabia.	low perceived social support, Mental and maternal health, and maternal status	Regression Analysis	The study found that therr us a significant relationship between stress and postpartum Depression

Source: Literature Review(2022)

Table 2.3.2: Postpartum Depression in the Developing Economies

S/N	Author(s)	Title	Underlying Variables	Methodology	Findings/Results
1	Myo, T., Ah Hong, S., Thepthien, B., and Hongkrailert, N., (2021)	Prevalence and Factors Associated with Postpartum Depression in Primary Healthcare Centers in Yangon, Myanmar	Maternal Health, Social support	Regression	A significant positive relationship between board size and financial performance measured by ROA and ROE of banks in Ghana. Additionally, the study found a statistically positive relation between foreign ownership and financial performance measured by ROE and ROE
2	Paddy, A., Asamoah-Gyimah, K. and Nkyi, A. (2021)	Psychosocial Determinants of Postpartum Depression and Maternal Well-Being among Postnatal Women in ghana	low perceived social support, Mental and maternal health, and maternal status	Multiple Regression Analysis	The study found that there is a significant relationship between stress and postpartum Depression
3	Catherine	Prevalence of postpartum	low perceived	Correlation	The study found a

	Atuhaire, Godfrey Zari Rukundo, Grace Nambozi, Joseph Ngonzi, Daniel Atwine, Samuel Nambile Cumber, Laura Brennaman. 2021	depression and associated factors among women in Mbarara and Rwampara districts of south-western Uganda	social support, HIV positive status, rural residence, obstetrical complications and the baby crying excessively.	and Multiple Regression Analysis	significant relationship between factors such as low perceived social support, HIV positive status, rural residence, obstetrical complications and Postpartum depression
4	Bachmann, C. S., Risnes, K.(2012)	Assessing the Role of Maternal Health Care Knowledge and Practices in Postpartum Depression in south africa	Mental health, maternal education and health history	Regression analysis	There was significant relationship between Maternal Health care knowledge, mental health and postpartum depression

Source: Literature Review (2022)

2.3.3 Postpartum Depression in Nigeria

Some Literature exist in Nigeria on Postpartum depression and Maternal Health which were also reviewed.

In a study published in 2016 by Sulyman, D., et al. The purpose of the study was to ascertain the incidence of postpartum depression and evaluate risk variables among mothers in northeastern Nigeria. Four hundred eighty-three women who gave birth at a tertiary medical facility in northeastern Nigeria were given the Edinburgh Postnatal Depression Scale (EPDS) questionnaire as part of the study's materials and methods. Using a pro forma questionnaire created by the researchers, their sociodemographic and clinical data was also gathered.

According to their study, 188 participants scored 13 or higher on the EPNDS, resulting in a 22.4% prevalence rate for postnatal depression. Employment (odds ratio (OR) = 0.49, 95% (CI) = 0.27-0.86, P value = 0.018), lack of support from the husband (OR = 0.34, 95% (CI) = 0.19-0.60, P value = 0.000), and prim parity (OR = 0.56, 95% (CI) = 0.35-0.88, P value = 0.013), among others, are associated with the development of postnatal depression. Other factors include an unplanned pregnancy (OR

They stated in their conclusion that the study revealed a sizable percentage of new mothers suffer from postnatal depression. It could have a detrimental impact on their parenting abilities and potentially bad consequences for both them and their kids.

In a cross-sectional study done in 2021 by Netochi Nwosu, 401 women who attended postpartum and immunization clinics at the University College Hospital Ibadan were used. The information was gathered using a self-administered survey that included a sociodemographic portion that was self-developed, the Edinburgh postnatal depression scale to evaluate postpartum depression, and the International physical activity questionnaire (short

type) to measure physical activity. To identify independent components, analysis was performed using chi square and a multivariate analysis. The cutoff for significance was 0.05.

37.8% of responders, or more than one-third, were found to have postpartum depression. There were many people moving around (72.1%). When compared to lower levels of physical activity, high levels showed a 1.25 higher risk of postpartum depression (95% CI = 0.797-0.97). Independently linked to postpartum depression were the child's age, gender, and relationship satisfaction. According to Netochi Nwosu's study, postpartum depression is more common than had been previously thought in southwest Nigeria, and high levels of physical activity may make it more likely.

Table 2.3.3: Postpartum Depression in Nigeria

S/N	Author(s)	Title	Underlying Variables	Methodology	Findings/Results
1	Shehu & Abubakar (2012)	Assessment and Treatment of Postpartum Depression among Mothers in Imo-State, Nigeria	Mental health, Formal education, and health history	Regression	The study found that there is a significant relationship between Access to healthcare and postpartum Depression
2	Sulyman, D., Ayinde Ayanda, K.,, & Makama Dattijo, L., (2016)	Postnatal depression and its associated factors among Northeastern Nigerian women	Lack of formal education and low level of education	Logistic Regression	Lack of formal education or low level of education was found to have significant relationship with Postpartum depression
3	Danasabe, M., & BT Elias. N., (2016)	postpartum depression among hausa ethnic women in abubakar tafawa balewa university teaching hospital, north east nigeria	Mental health, Formal education of parent and social support	Correlation	The study found that there is a significant relationship between Maternal formal Education

					and postpartum Depression
4	Igo, J., Adedayo, A. O., Adeladan, L. J., & Egwuenu, R. N (2010)	stress and social support as correlates of postpartum depression among nursing mothers in makurdi local government area of benue state	Maternal stress, social support and marital status	Correction and Regression Analysis	It has been established that stress has positive relationship with postpartum depression. While social support has negative relationship with postpartum depression
5	Netochi Nwosu (2021)	Postpartum depression and physical activity amongst women attending immunization and postnatal clinic in a tertiary hospital in Ibadan	Maternal Medical history, physical activity and marital status	Multiple Logistic regression	physical activity, marital status has insignificant effect on postpartum depression while Maternal Medical history has significant effect on postpartum depression

Source: Literature Review (2022)

2.4 Theoretical Framework

The impact of postpartum depression on maternal wellbeing is the subject of numerous hypotheses. The study's foundational theory, which was determined to be the most pertinent of them, is evolutionary theory. According to evolutionary theory, PPD is not a disorder, as the American Psychiatric Association suggests, but rather an adaptive mechanism that alerts a woman when she is experiencing or has experienced a social cost, prompting her to decide whether to continue caring for her children or stop. It seems strange to think that something so unpleasant and seemingly disruptive could be adapted to and chosen for by natural selection.

Williams and Nesse (1991) contend that while evolutionary biology comprehends the underlying causes of many contemporary illnesses and diseases, the medical tradition's dependence on chemistry and physics only provides proximate explanations for sickness and illness. They contend that many of the symptoms of illness or disease that we perceive as unfavorable outcomes or byproducts (physical pain, swelling, vomiting, allergic reaction, fever, etc.) are actually adaptive mechanisms that aid the body's healing process. For instance, when a person sprains their ankle and swelling develops, the doctor views this swelling as an incidental outcome of trauma, whereas the evolutionary biologist is interested in the swelling's adaptive nature. In other words, swelling is adaptive because it prevents the joint from moving, which speeds up the healing process. In addition, the body lowers its levels of iron as a defense mechanism against germs by sequestering it, which can be seen from an evolutionary standpoint.

According to evolutionists, psychological suffering is a psychological mechanism that has developed to alert the individual when they have or are currently experiencing a social cost or

injury. According to Hagen and others, PPD may be a byproduct of this system, assisting the mother in deciding whether to devote time and resources to her child. They refer to this as the "perinatal psychic pain hypothesis," which states that if a mother experiences any of the aforementioned conditions while she is pregnant, she should feel "perinatal sadness" and "a lack of desire to raise the child," which will prompt her to decide whether to invest in or look for social and material resources so she can afford to raise the child.

2.5 The Gap in Literature

At present, research on postpartum depression has attracted scholars and researchers due to the importance and insight gained. Nonetheless, in comparison with developed economies, this research area is less studied in emerging economies and Nigeria in particular. Till date, to the best knowledge of the researcher there is no comprehensive and major study has the effect been carried out in Nigeria. Hence, this study is to investigate the knowledge, perception and prevalence of postpartum depression and maternal well-being among nursing mothers in Nigeria.

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Chapter Three

Methodology

This Chapter introduction deals with the research methods utilized during the course of the study.

3.1 Description of Study Area

One of the urban local government areas in the Ibadan metropolitan is Ibadan North. The approximate coordinates of this local government, which has a 27 km2 area, are longitude 805' East of the Greenwich meridian and latitude 7023' North of the equator. On September 27, 1991, Nigeria's Federal Military Government established it. The Local Government is bordered to the west by Ido and the Ibadan North West Local Government, to the east by Lagelu, the Egbeda Local Government, and the Ibadan South East Local Government, and to the north by the Akinyele Local Government. The Oyo State Government House is directly across from the Agodi-Gate Ibadan location of the Ibadan North Local Government Secretariat.

According to the 2006 census, Ibadan North Local Government Area has a population of 306,763 people, with 153,039 men and 153,756 women (National Bureau of Statistics). Numerous educational institutions, including the University of Ibadan, the Ibadan Polytechnic, and numerous public and private middle and secondary schools, are housed by the local government.

There are numerous ethnic groups represented in the Local Government Area, including the Yoruba, Igbo, Edo, Urhobo, Itsekiris, Ijaws, Hausas, and Fulani. The population of the metropolis is primarily made up of dealers, craftsmen, civil servants, university and polytechnic teachers, but a sizeable portion of the population also consists of students.

Ibadan North Local is made up of 12 wards, 14 primary health centers overall, and 10 other public health institutions, including one tertiary hospital (University College Hospital), one secondary hospital (Adeoyo Hospital), and a number of maternity facilities. There is at least one primary healthcare facility in each of the wards.

The LGA was chosen since it is home to the majority of the state's Primary Health Centers.

List of the wards and communities in Ibadan North Local Government Area

Ward 1 comprise of Beere, Kannike, Agbadagbudu, Oke-Are and Odo-oye

Ward 2 comprise of Ode-Oolo, Inalende, Oniyanrin and Oke Oloro

Ward 3: Adeoyo, Yemetu, Oke –Aremo, and Isale Alfa

Ward 4: Itu Taba , Idi-Omo, Oje-Igosun, Kube, Oke –Apon, Abenla, Aliwo/Total and NTA area

Ward 5: Basorun, Oluwo, Ashi, Akingbola, Ikolaba and Gate Ward 6: Sao area

Ward 7: Oke – Itunu, Coca-cola, and Oremeji Areas

Ward 8: Sango and Ijokodo Areas

Ward 9: Mokola, Ago Tapa, and Premier Hotel Areas

Ward 10: Bodija, Secretariat, Awolowo, Obasa and Sanusi

Ward 11: Samonda, Polytechinic and University of Ibadan Areas

Ward 12: Agbowo, Bodija Market, Ojurin, Barika, Iso Pako, Lagos/Ibadan Express road areas

The primary health centers of interest are chosen using a simple random sampling method ;

a) Idi ogungun primary health center Agodi

b) Ago Tapa primary health center Mokola

c) Barika primary health center Agbowo

d) Bodija primary health center Adinloju

e) Agbowo primary health center

3.2 Research Design

The study made use of facility based cross-sectional survey design.

3.3 Population of the Study

The target population were nursing women attending postpartum healthcare programs at community health clinics in the ibadan North Local Government Area of Ibadan Oyo State.

The inclusion criteria was :

i. All mothers in the child bearing age.

ii. Mothers' who were within two weeks - one year postpartum.

iii. Mothers' who gave written consents

Mothers' below eighteen years, consent was sought from their guardian,

The exclusion criteria was:

i. Mothers with previous mental illness

ii. Ill mothers

iii. Mothers' with ill children.

3.4 Study Variables

The study which comprises of variables Postpartum Depression and Marternal Wellbeing where Postpartum Depression is the independent variable and Marternal Wellbeing is the dependent variable.

3.5 Sample Size Determination

The Fisher et al formula (1991) was used to calculate the study sample for this research which was:

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

Where n is the minimum sample size required

d is margin of error 5%

z confidence level 1.96

p estimated proportion of pregnant women with PPD in Nigeria 22.9% (Chinawa et al, 2016)

Therefore, the prevalence value and the following formula were used to calculate the sample size for this research:

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

$n=1.96^2 \times 0.229 \times 0.771 / 0.0025 = 3.841 \times 0.229 \times 0.771 / 0.0025 = 271.2$ approximated to 271

To account for potential cases of lost and rejected questionnaires due to inadequate filling, a non-response percentage of 10% of 271 was added to the sample size.

$$\frac{271 \times 10}{100} = 27.1 \text{ was roughly equal to } 27$$

Thus, the estimated minimal sample size for the research was 271 + 27 = 298.

The study sample size was further sumed up to three hundred (300)

Therefore a sample size of 300 was used for this study.

3.6 Description of Research Instruments

The instrument that was used for this research is the sets of the structured open and close ended questionnaire which was classified into Sections A, B, C, D. The section A shall be for the Demographic profile of all the respondents while Sections B, C and D was classified for each specific objective of the study.

B - Prevalence of Postpartum depression

C - Maternal well-being

D - Assessment of factors for postpartum depression

3.7 Data Collection

An updated version of the pre-test and a structured interviewer-administered questionnaire were used to interview the respondents. The questionnaire was translated from English to Yoruba to ensure that the wording was appropriate, and then it was translated back to English for confirmation.

3.8 Data Analysis Technique

The administered copies of the questionnaire were given serial numbers for quick identification, accurate data input, analysis, and recall of any instruments with one or more issues. Before entering the data, each cycle of the questionnaire was manually sorted out, cleaned, and coded using a coding guide that would be created. Utilizing the statistical program SPSS version 20.0, data will be entered and maintained. In order to summarize the dependent and independent variables, descriptive statistics including percentage, mean, frequencies, and standard deviation were utilized. Chi-square test was used for cross-tabulations between the dependent and independent variables, such as age and the type of depression, in univariate/bivariate analysis. The probability of error will be set at 1.96. Tables and charts were utilized to illustrate the findings, while descriptive statistics like percentages and frequencies were employed to characterize the data.

3.9 Ethical Approval

Ethical approval for the study was gotten from ministry of health research committee Oyo state.

Lead City University research ethics committee Oyo state.

Eligible participants were asked to sign a consent form providing informed consent before their participation after being briefed about what they will be doing and the safety of their discussion. Participants who could not read or write were asked to provide a thumbprint and their consent would be verified by the signature of an impartial witness of the participant's choice.

Chapter Four

Result

4.1 Socio Demographic Data

The survey included 300 respondents in total (Table 4.1.1). All of the respondents were nursing mothers. The respondents' mean age was 27.73±4.78 and their ages ranged from 20 to 45. The majority of the respondents, 94 (31.3%), were between the ages of 25 and 29.

The age groups of 30-34 years come next, accounting for 77 (25.7%) of the participants, followed by the 20–24 age range with 62 (20.7%) respondents, and those 35 years of age and above with 67 (22.3%) respondents.

The majority of respondents 231 (77.0%) identified as Yoruba, followed by the Hausa ethnic group 35 (11.7%), a small number of Igbo people 18 (6.0%), and 16 (5.3%) who are identified as other ethnic group.

The majority of respondents, 154 (51.3%) were Christians, followed by some Muslims 139 (46.3%), while the least number of respondents 7, were followers of African traditional religions (2.3%). The majority of respondents 149 (49.7%) had completed secondary education, followed by 115 (38.3%) and 36 (12%), participants with university education and primary education as their greatest degree of education respectively.

A few of the respondents worked for themselves. 106 (35.3%), 92 (30.7%) were traders, a small number of 35 (11.7%) were government workers, housewives 34(11.3%), and artisans 33 (11%).

9 (3%) of the interviewees were single, compared to 291 (97%) who were married.

The majority of the 300 respondents 232 (77.3%) do not drink alcohol, while 68 (22.7%) do. In addition, only 16 (5.3%) of the respondents' smoke, compared to 284 (94.7%) of the women who do not smoke.

The majority of the women, 133 (44.3%), were nursing infants who were 1 to 5 months old, followed by 88 (29.3%) who were nursing 6-10 months old and 79 (26.4%) of the women were nursing a year and above.

The result is presented in table 4.1.1

Table 4.1.1 Table showing relationship between the number of study respondents and the Socio-demographic characteristics

Variable	Frequency n= 300	Percent
Age		
20-24 years	62	20.7
25-29 years	94	31.3
30-34 years	77	25.7
35-39 years	52	17.3
40-45 years	15	5.0
Ethnic Group		
Yoruba	231	77.0
Hausa	35	11.7

Ibo	18	6.0
Others	16	5.3
Religion		
Christianity	154	51.3
Islam	139	46.3
Traditional	7	2.3
Level of Education		
Primary Level	36	12.0
Secondary Level	149	49.7
Tertiary Level	115	38.3
Occupation		
Trading	92	30.7
Artisan	33	11.0
Housewife	34	11.3
Government worker	35	11.7
Self Employed	106	35.3

Marital Status		

Married	291	97.0
Not Married	9	3.0
If yes, what type		
Monogamous	231	79.4
Polygamous	69	20.6
Do you take alcohol		
Yes	68	22.7
No	232	77.3
Do you smoke		
Yes	16	5.3
No	284	94.7
Baby's age		
1-5 months	133	44.3
6-10 months	88	29.3
11-15 months	65	21.7
16-20 months	14	4.7

4.2 Presentation Of Data

4.2.1 Responses of Women to the EDPS Test on Postpartum Depression among Nursing Mothers (Prevalence of Depression)

I've been able to smile and see the amusing side of things, the women's reactions to the remark The majority of responders, 266 (85.3%), chose NO, while 34 (14.7%) selected YES.

When asked to comment on the second statement, "I have anticipated enjoying things," 234 (78.0%) of the respondents said NO. Only 66 (22.0%) of the replies from the women were "YES."

These are the participants' responses to the statement, "I have unfairly placed the blame for things going wrong on myself." The majority of responders, 261 (87.0%), said "Yes," while only 39 (13.0%), did not.

The following are the respondents' answers to the question, "I have been concerned or worried for no good reason." 65 (21.7%) responded NO, while 235 (78.3%) chose YES.

Women's replies to the statement "I have felt anxious or terrified for no very good reason" Only 154 (51.3%) of the respondents selected the option "YES," while 146 (48.7%) opted for NO.

The replies offered by the women in response to the statement "Things have been getting on top of me" are as follows; 184 (62%) women chose NO, compared to 114 (38%) who picked YES.

These are the respondents' answers to the question, "Have you ever been so sad that you have trouble falling asleep?" A sizable 198 (66%) of the participants answered "YES," while 102 (34%%) answered NO.

When asked if they had ever felt depressed or unhappy, the majority of respondents 232 (77.3%) indicated YES, while 68 (22.7%) of the women responded NO.

217 respondents (72.3%) agreed with the statement, "I have been so sad that I have been crying," whereas 83 respondents (27.7%) disagreed.

The majority of responders, 273 (91%), disagreed with the statement "The notion of injuring myself has come to me," while 27 (9%), did.

The results are presented in table 4.2.1

Table 4.2.1 Table Showing EDPS Test on Postpartum Depression among Nursing Mothers (Prevalence of Depression)

Variable	Frequency n=300	Percent
I have been able to laugh and see the funny side of things		
No	266	85.3
Yes	34	14.7

I have been looked forward to enjoyment of things		
No	234	78.0
Yes	66	22.0
I have blamed myself unnecessarily when things go wrong		
Yes	261	87.0
No	39	13.0
I have been anxious or worried for no good reason		
No	65	21.7
Yes	235	78.3
I have felt scared or panicky for no good reason		
Yes	154	51.3
No	146	48.7
Things have been getting on top of me		
Yes	114	38.0

No	186	62.0
I have been so unhappy that i have had difficulty in sleeping		
Yes	198	66.0
No	102	34.0
I have felt sad or miserable		
Yes	232	77.3
No	68	22.7
I have been so unhappy that I have been crying		
Yes	217	72.3
No	83	27.7
The thought of harming myself has occurred to me		
Yes	27	9
No	273	91

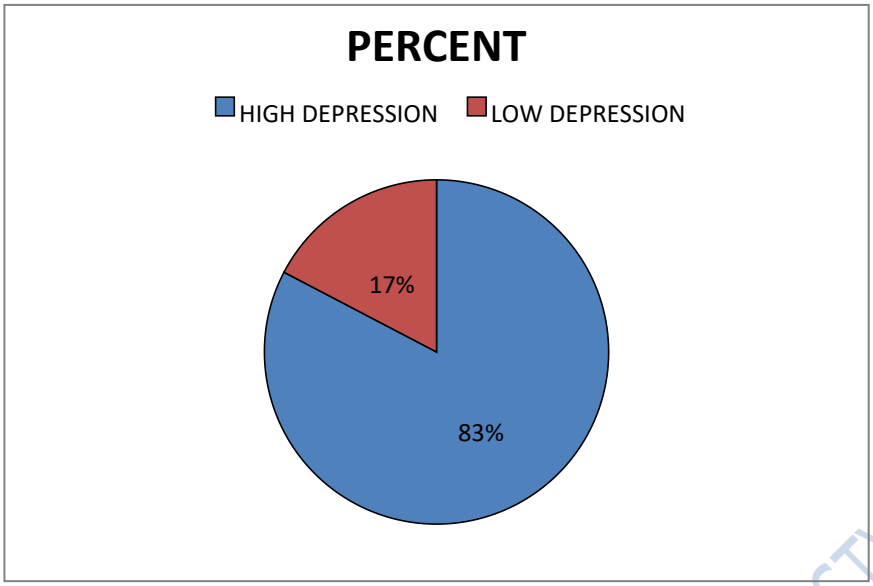

Figure 7. Prevalence level of postpartum depression

4.2.2 Responses of the Women to Maternal Well Being Test

Less than half of the respondents, 123(41%), are content with their health situation, while 177(59%) of the respondents claimed they are not.

While 114 (38%) of the respondents claimed they are content with the level of discomfort they are experiencing, the majority of respondents 168 (62%) are not.

The majority of respondents, 189 (63%) said they are not happy with the energy they have for daily activities, while just 111 (37%), said they are happy with their energy for daily activities.

95 of the respondents, or 31.3% of the women, said they are content with the level of control they have over their lives, compared to 205 respondents, or 68.3%, who said they are unsatisfied with it.

The majority of respondents, 208 (69.3%), said they were not satisfied with their capacity to care for themselves without assistance, while 92 (30.7%) said they were.

Less than half of the women, 112, (37.3%), indicated they are content with their physical appearance, while the majority of respondents, 188 (62.7%), said they are not.

Fewer than 4 (1.3% of the respondents) stated they were content with the quantity of sleep they are getting, while the majority of respondents, 296 (98.7%), said they are not.

The majority of the 280 respondents (93.3%) reported being unsatisfied with their breasts, while only 20 respondents (6.7%) expressed the other opinion.

Majority of the women, 265 (88.3%), were not happy with their surgical incision, compared to 35 (11.7%) of the responders.

While 113 respondents (37.7%) indicated they were content with their sex life, the majority of respondents 187 (62.3%) said they were unsatisfied with it.

The majority of respondents, 151 (50.3%), reported being unsatisfied with their level of peace of mind, compared to 149 (49.7%), who said they were.

Less than half of the respondents, or 113 (37.7%), said they were unsatisfied with their individual confidence in God, while the remainder 187 (62.3%), said they were.

While 166 (55.3%) of the respondents were happy with their general level of fulfillment some of the women 134 (44.7%), were not.

162 (54%) of the respondents indicated they were content with their lives overall, 138 (46%) of the respondents expressed dissatisfaction with their lives overall.

While 171 (57%) of the respondents said they were content with the level of stress in their lives, 129 (43%) of the respondents said they were dissatisfied.

The result is presented in table 4.2.2;

Table 4.2.2 Table Showing Response of Maternal Well Being Test Based on the Respondents

Variable	**Frequency n=300**	**Percent**
Your health		
Dissatisfied	177	59.0
Satisfied	123	41.0

The amount of pain that you have		
Dissatisfied	168	62.0
Satisfied	114	38.0
Amount of energy for everyday activities		
Dissatisfied	189	63.0
Satisfied	111	37.0
Amount of control you have over your life		
Dissatisfied	205	68.3
Satisfied	95	31.7
Your ability to take care of yourself without help		
Dissatisfied	208	69.3
Satisfied	92	30.7
Your physical appearance		
Dissatisfied	188	62.7
Satisfied	112	37.3
The amount of sleep you are getting		
Dissatisfied	296	98.7

Satisfied	4	1.3
Your breasts		
Dissatisfied	280	93.3
Satisfied	20	6.7
your surgical incision		
Dissatisfied	265	88.3
Satisfied	35	11.7
Your sex life		
Dissatisfied	187	62.3
Satisfied	113	37.7
Your peace of mind		
Dissatisfied	151	50.3
Satisfied	149	49.7
Your personal faith in god		
Dissatisfied	113	37.7
Satisfied	187	62.3
Your happiness in general		

Dissatisfied	134	44.7
Satisfied	166	55.3
Your life in general		
Dissatisfied	138	46.0
Satisfied	162	54.0
Your amount of worries in your life		
Dissatisfied	129	43.0
Satisfied	171	57.0

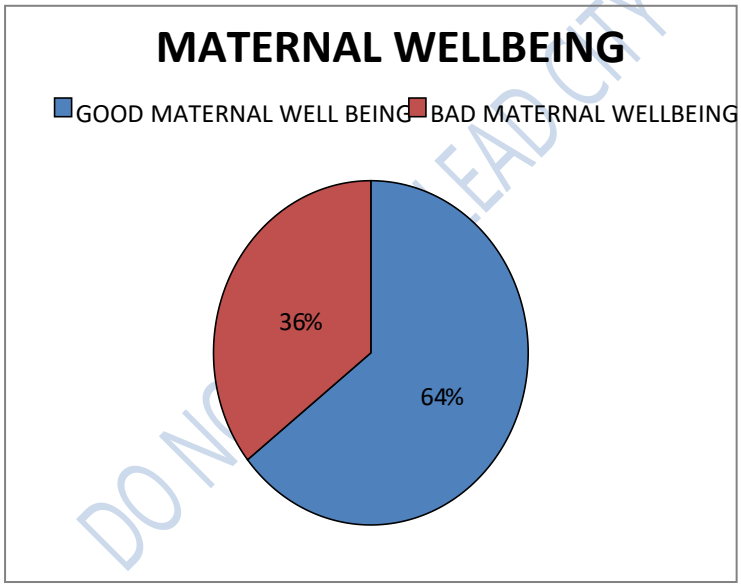

Figure 8. Prevalence level of maternal wellbeing

4.2.3 Response of Women to Risk Factors Assessment on Postpartum Depression

The majority of respondents, 259 (86.3%), report having healthy relations with their parents and other family members, while only 41 (13.7%) report having weak relationship with these relatives.

While 63 (21%) respondents said they do not have a great relationship with their spouses, the majority of respondents 237 (79%) had a healthy relationship with them.

130 respondents (43.3%) reported receiving assistance from their spouses with housework and child care, compared to 170 respondents (56.7%) who said they did not receive any assistance from their partners in these areas.

208 respondents, or 69.3%, indicated that their pregnancy was planned. Only 92 (30.7%) of the women reported that they did not aim to get pregnant.

The majority of respondents 168 (56%) said it was tough for them to get pregnant, while only 132 (44%) said it was not hard for them.

When asked if they had made clear decisions along with their partners regarding delivery, the majority of respondents 171 (57%) said they did. Less than half of the women 129 (41%) said they did not.

The majority of respondents, 177 (59%) do receive motivation to seek professional help when necessary, as opposed to the remaining respondents, 123 (41%), who do not.

158 (52.7%) of the respondents had lost a pregnancy or had a stillborn child, whereas 142 (47.3%) had never lost a pregnancy or had a stillborn child.

The majority of the women, 186 (62%), had never before undergone lengthy labor; however, 114 (38%), had.

The majority of respondents, 176 (58.7%), stated that they were concerned about their ability to handle the impending kid, while 124 (41.3%) of the respondents said they were not concerned.

Less than half of the respondents (118, or 39.3%) reported having health issues while pregnant, while the majority of respondents (182, or 60.7%), did not.

Only 18 (6.0%) of the women use drugs, alcohol, or other substances to cope with their problems, compared to 282 (94%) of the respondents who do not use any of these substances.

The result is presented in table 4.2.3;

Table 4.2.3 Table Showing Response of Women to Risk Factors Assessment on Postpartum Depression

Variable	Frequency n=300	Percent
Do you have a good r/ship with parents		
Yes	259	86.3
No	41	13.7
Do you have a good r/ship with spouse		
Yes	237	79.0
No	63	21.0
Does your husband help with house chores		
Yes	130	43.3
No	170	56.7
Is this pregnancy intended		
Yes	208	69.3

No	92	30.7
Did you have difficulty getting pregnant		
Yes	168	56.0
No	132	44.0
Did you and your partner have joint arrangement in this pregnancy		
Yes	171	57.0
No	129	43.0

Does he encourage you to seek professional help when needed		
Yes	177	59.0
No	123	41.0
Ever had previous experiences of miscarriage or stillbirth		
Yes	158	52.7

No	142	47.3
Ever had prolonged labor in the past		
Yes	114	38.0
No	186	62.0
Ever anxious about being able to cope with the expected baby		
Yes	176	58.7
No	124	41.3
Any health problems in this pregnancy		
Yes	118	39.3
No	182	60.7
Ever relied on drugs, alcohol or other substances to deal with things		
Yes	18	6.0

No	282	94.0

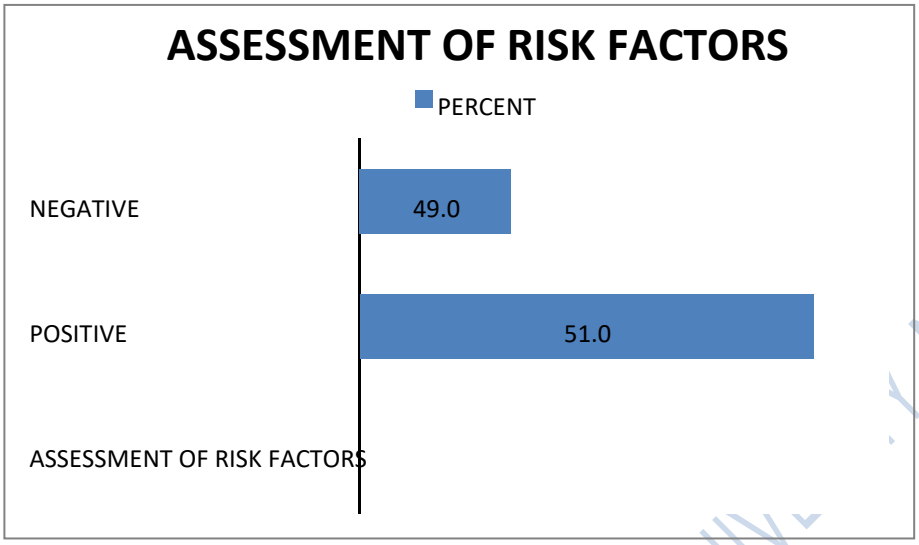

Figure 9. Assessment of Risk Factors for Postpartum Depression

Table 4.2.4 Table showing the Association between post-partum depression, socio demographic factors and

Maternal well being

Variable	High depression	Low Depression	P value	Chi square
Age			0.733	2.785[a]
20-24 years	80.6%	19.4%		
25-29 years	85.1%	14.9%		

30-34 years	84.4%	15.6%		
35-39 years	78.8%	21.2%		
40-44 years	84.6%	15.4%		
Religion			0.711	0.681[a]
Christianity	82.5%	17.5%		
Islam	83.5%	16.5%		
Traditional	71.4%	28.6%		
Ethnic group			0.016	10.330[a]
Yoruba	81.8%	18.2%		
Hausa	71.4%	28.6%		
Ibo	100.0%	0.0%		
Others	100.0%	0.0%		
Level of education			0.001	13.298[a]
Primary	61.1%	38.9%		
Secondary	85.2%	14.8%		
Tertiary	86.1%	13.9%		
Do you drink			6.803	0.658
Yes	82.4%	17.6%		

No	82.8%	17.2%		
Do you smoke			0.878	0.024
Yes	81.2%	18.8%		
No	82.7%	17.3%		
Risk factors			0.168	1.902[a]
Positive	85.6%	14.4%		
Negative	79.6%	20.4%		
Maternal wellbeing			0.622	0.243[a]
Good	81.9%	18.1%		
Bad	84.1%	15.9%		

4.2.4 Association between post-partum depression, socio demographic factors and Maternal well being

Respondents within age category 25-29years of age had the largest number of depression 80(85.1%) compared to women within the age range of 20-24 years 39(62.1%) then participants who are 35-39years had the lowest frequency 41(78.8%). The relationship

between respondents' age and their experience of postpartum depression was not statistically significant (p value = 0.733).

A total of 139 respondents were Muslims, of whom more than half 116 were depressed. Of the 154 Christians who responded, just 27 (17.5%) were not depressed and 127 (82.5%) were. Religion and depressive experiences had a significant connection (p value = 0.711).

Similarly, there is no statistically significant correlation between the risk factors , drinking and smoking, with p values of 0.168, 0.803, and 0.878, respectively.

According to this research, there is no connection between postpartum depression and maternal wellbeing (p value: 0.622).

Participants with tertiary education were found with the highest frequency and percentage of experience of depression. A total of 115 respondents had tertiary education as their highest level of education, of which 99(86.1%) were categorized depressed. Additionally, out of 149 respondents with secondary education as their highest level of education, 14.8% were not depressed, and 127 (85.2%) were depressed. Out of 36 respondents with primary school as their highest level of education, 22 (61.1%) were depressed. As a result, it was shown that there was a substantial correlation between education degree and depressive experience. P value is 0.001.

The majority of respondents (231) were Yoruba, with 42 (18.2%) being classed as not depressed and 189 (81.8%) as depressed. A total of 35 respondents were Hausas and 25(71.4%) were depressed while 10(28.6%) were not depressed. There were 18 Ibo

responders in all, and 18 (100%) of them reported having depression while 0% did not. Postpartum depression and respondents' ethnicity were significantly correlated. (p = 0.016).

TABLE 4.2.5 A Table Showing the Logistics Regression Coefficient of Selected Socio Demographic Characteristics, Possible Risk Factors and Prevalence of Maternal Well Being Associated with the Prevalence of Post-Partum Depression

Variable	UOR	P Value	95%ci		AOR	P Value	95% ci	
Maternal wellbeing								
Good	1.173	0.623	0.622	2.212				
Bad								
Religion								
Christianity	0.531	0.464	.098	2.885				
Islam	0.496	0.418	.091	2.713				
Traditional								

Level of education								
Primary	3.937	0.002	1.678	9.242				
Secondary	1.072	0.845	.535	2.149				
Tertiary								
Marital status								
Married	1.7	.621	.208	13.982				
Not married								
Joint delivery arrangement with partner								
Yes	0.487	0.02	0.266	0.893	0.66	0.217	0.341	1.277
No								
Previous miscarriage or stillbirth								
Yes	0.965	0.906	0.530	1.755				
No								

Anxious to be able to cope with the baby								
Yes	0.244	0	0.128	0.465	0.258	0	0.136	0.527
No								

4.2.5 Logistics Regression Coefficient of Selected Socio Demographic Characteristics, Possible Risk Factors and Prevalence of Maternal Well Being Associated with the Prevalence of Post-Partum Depression

Joint delivery arrangements have a strong correlation with postpartum depression prevalence at UOR, with a P value of 0.02 (0.266, 0.893%).

Additionally, there is a significant relationship between postpartum depression prevalence and anxiety about being able to handle the infant at p value 0 (0.128, 0.465%).

Nevertheless, there is no correlation between maternal wellbeing (0.622, 0.222%), religion (0.098, 0.885%), marital status (0.208, 13.9%), and past miscarriage (0.530, 1.755%)

According to UOR, respondents who identify as traditionalists are three times less likely to have postpartum depression than respondents who identify as Christians and two times less likely to experience it than those who identify as Muslims.

When compared to respondents who are not married, married respondents at UOR are twice as likely to have postpartum depression.

The findings also indicate that spouses who make joint plans are three times less likely than partners who do not to suffer from postpartum depression.

The study also demonstrates that postpartum depression is five times less likely to occur in people who are worried about adjusting to parenthood than in people who are not.

In Conclusion, those with good maternal wellbeing are two times more likely to not experience postpartum depression than those experiencing bad or poor maternal wellbeing.

4.3 Research Questions

The study address the following questions:

i. What is the relationship between postpartum depression and maternal wellbeing among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

ii. What is the prevalence of postpartum depression among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

iii. What are the associated factors militating against the maternal wellbeing among nursing mothers in Ibadan north local government area, Ibadan Oyo state Nigeria?

4.4 Discussion of Findings

Socio-demographic characteristics of respondents'

The ages of the respondents varies from 20-45

This study shows that ages 25-29 made up the highest number of respondents (31.3%), with ages 30-34 (25%) standing closely behind.

The result from the study also shows that out of 300 respondents, Yoruba takes at least 77% of the total population assigned this may be attributed to the study's location in the country's south-western region, where the Yoruba are the major ethnic group.

The survey's representation of the two most common religious groups Muslims at 46.3%, and Christians at 51.3% can also be attributed to the fact that these two major religions make up the majority of the study's study site.

Likewise, 97% are married, while 3% are not. Given that 79.4% of the married participants in the study are in monogamous marriages.

With self-employed workers being of a number than others at a menial 35.3%, secondary school educated respondents also fall within the same range at 49.7%. Furthermore, it also presents a higher value of 94.7% non-smokers and 77.3% non-drinkers.

Prevalence of Post-Partum Depression

In the Ibadan North Local Government, the study sought to identify the rates of depression among pregnant women who visited particular primary health institutions. It showed an 83% prevalence rate, which is fairly high and significant for public health. The high incidence supports research by Coast Ernestin and colleagues, who found that high prevalence rates are common in low and middle-income nations (Coast, Ernestina and Leone, Tiziana and Hirose, Atsumi and Jones, Eleri 2012). The high prevalence rate of depression was caused by the risk variables' high frequencies, which were analyzed. Lack of support is a significant risk factor for postpartum depression, with more than half of all respondents reporting that their partners do not assist them with housework or child care. Few respondents receive the necessary incentive to seek professional help, less than half of respondents acknowledged the baby was not intended, and just a small percentage of respondents said they had miscarried. These are all significant depression risk factors that have led to the illness's high prevalence.

A significant portion of respondents (85.3%) claimed they could not laugh as easily or see the amusing side of things as often as they formerly could, whereas 14.7% disagreed. Additionally, only 22% of respondents said they look forward to enjoyment of things significantly less than they used to, while 78% said they do so frequently.

The World Health Organization reports that for at least two weeks, many women experience low mood, a loss of interest and enjoyment, and impaired energy. Many persons who experience depression also experience anxiety symptoms, irregular eating and sleeping

patterns, guilt or feelings of low self-worth, impaired attention, and even symptoms that are medically unexplained (WHO,2012).

When things went wrong, more than half of the respondents (57%) put the blame on themselves needlessly (87%); the remaining 13% did not place any blame.

Few respondents claimed they become anxious or worried extremely frequently, although more over half of those polled stated they occasionally do so.

In this study, more than half of the respondents reported they had experienced fear or panic in the previous days for no apparent reason, while less than half said they do not experience fear or panic. The majority of nursing moms (62%) claimed that they have been able to cope most of the time, while just a small percentage of respondents reported that they occasionally haven't been coping well because things have been piling on top of them.

Additionally, this survey found that while 22.7% of nursing mothers reported they did not feel depressed or gloomy in the previous week, 77.3% of them claimed to do so rather frequently. Seventy-two.3% of the respondents indicated they occasionally become so upset that they cried, while 27.7% claimed they had never experienced such an emotional breakdown. This may be connected to Camacho's results, Physical, physiological, psychological, and social changes that occur during pregnancy and the postpartum period (puerperium) can directly affect a woman's mental health (Camacho et al., 2006)

Depression is distinct from common mood swings and fleeting emotional reactions to problems in daily life. Depression may develop into a significant medical illness, particularly if it lasts for a long time and is moderate to severe in intensity. The affected person may experience severe suffering and perform poorly at job, in school, and in the family. Suicide can result from depression at its worst. Every year, suicide is thought to be the cause of 1

million deaths (WHO., 2014). However, 91% of respondents indicated they had never considered harming themselves, whereas 9% of respondents said it had occasionally crossed their minds.

Maternal Well-Being

This study shows that more than half of the respondents have poor maternal wellbeing

Many of the respondents had higher rates of dissatisfaction in areas of amount of energy for everyday activities (63%), amount of control over their lives (68.3%), ability to take care of themselves (69.3%), their physical appearance (62.7%), amount of sleep gotten (98%), breasts (93%) and surgical incisions (88%); and mid rates in the amount of worries (43%), sex life (62%) and physical appearance (62%).

Studies shows that body dissatisfaction before and during pregnancy leads to higher levels of PPD in the postpartum period (Chan, C.Y. et al., 2019)

Women gain weight with pregnancy, and after childbirth they are most concerned about losing this excess weight. It has been reported that being overweight is a reason for greater dissatisfaction with body image and more PPD (Faleschini, S. et al., 2019)

Assessment of Risk Factors Associated With Postpartum Depression

The study found that almost half of respondents claimed the baby was not planned, more than half of respondents do not receive assistance from their spouses with household tasks and child care, and more than half of respondents had high exposure to risk factors for postnatal depression.

However, more than half of the respondents had had miscarriages or stillbirths, and only a small number had previously gone through extended labor. Poor postnatal care, poor nutrition, a lack of social support, unwanted pregnancies, domestic abuse, lower income and poorer

educational status are some risk factors that predispose to depression after childbirth. Other risk factors include age and marital status. (Chung, McCollum, Elo, Le, and Culhan, 2004)

Many of the respondents expressed worry about their ability to manage with the infant, although few reported any health issues throughout their pregnancies and even fewer admitted to using drugs, alcohol, or other substances to cope. This supports research by Pajulo et al., who found that "Depression during child nursing may diminish one's capacity for self-care, including inadequate nutrition, drug or alcohol abuse, and poor postnatal clinic attendance, all of which may compromise a woman's physical and mental health and may reduce optimal baby monitoring or affect the growth and development of the baby (Pajulo, Savonlahti, Sourander, Helenius, Piha., 2001; Hartley, Tomlinson,

Chapter Five

Conclusion

5.1 Summary

From this study it is seen that ages 25-29 made up the highest number of respondents (31.3%), with ages 30-34 (25%) standing closely behind.

The result from the study also shows that out of 300 respondents, Yoruba takes at least 77% of the total population assigned.

Likewise, 97% are married, while 3% are not. Given that 79.4% of the married participants in the study are in monogamous marriages.

With self-employed workers being of a number than others at a menial 35.3%, secondary school educated respondents also fall within the same range at 49.7%

Furthermore, it also presents a higher value of 94.7% non-smokers and 77.3% non-drinkers. (table 4.1.1)

There were high rates of responses on “YES” in questions like I have been able to laugh and see the funny side of things, I have been looked forward to enjoyment of things, I have blamed myself unnecessarily when things go wrong, I have felt sad or miserable and I have been so unhappy that I have been crying at 85.3%, 78%, 87%, 77.3% & 72.3% respectively.

While “I have felt scared or panicky for no good reason” and “I have been so unhappy that I have had difficulty in sleeping” Were also at mid rates of 51.3% and 66% respectively.

However, “the thoughts of harmful myself has occurred to me” and “things are getting on top of me” came out in lower numbers compared to others, at their respective rates of 49% and 38%.

“I have been able to laugh and see the funny side to things” came out as the highest at 85.3% and “things are getting on top of me” as the overall lowest from the study. (table 4.2.1)

Many of the respondents had higher rates of dissatisfaction in areas of amount of sleep gotten (98%), breasts (93%) and surgical incisions (88%); and mid rates in the amount of worries (43%), sex life (62%) and physical appearance (62%).

The result however showed the highest satisfaction (or lowest dissatisfaction) in their personal faith in God (table 4.2.2)

The study shows that 86% and 79% of the participants have good relationships with their relatives and spouses respectfully, while only 43% of spouses assists in the house chores, most of the results came in mid ranges between 52-69% in cases like previous experience with miscarriage or getting professional help.

However, there are lower rates like in health problems in pregnancy (39.3%), ever relied on drugs or substances (6%) or if there was prolonged labor (38%) (Table 4.2.3)

From this study, there is no significant association between maternal wellbeing (p value at 0.622) and postpartum depression likewise in the cases of risk factors, age, religion, drinking and smoking, there are no significant association between them with p values of 0.168, 0.733, 0.711. 0.803 and 0.878 respectively. There is however, a significant association in ethnic groups (p value 0.016) and level of education (p value 0.001)

At UOR, there is a significant association between joint delivery arrangements at P value 0.02 (0.266, 0.893%) and prevalence of postpartum depression.

There is also a significant association between anxious to be able to cope with the baby at p value 0 (0.128, 0.465%) and the prevalence of postpartum depression.

However, no significance can be found in maternal wellbeing (0.622,0.222%), religion (0.098,0.885%), marital status (0.208,13.9%) and previous miscarriage (0.530,1.755%)

At UOR, respondents practicing traditional religion are two times less likely to not experience post-partum depression higher than Christian and are also three times less likely to not experience postpartum depression like the respondents practicing Islam.

At UOR, married respondents are two times more likely to not experience post partum depres sion compared to their counterparts that are not married.

The result also shows that partners who make joint arrangements are three times less likely to not experience postpartum depression compared to the partners that do not.

The study also shows that those who are anxious about coping with the baby are five times less likely to not experience postpartum depression than those who do not.

In Conclusion, those with good maternal wellbeing are two times more likely to not experience postpartum depression than those experiencing bad or poor maternal wellbeing.

5.2 Conclusion

Postpartum Depression (PPD), a depressive disorder, is a public health problem that has an intense effect on maternal health and well-being. This phenomenon has however received little or no attention in our social environment, especially our health settings.

A major issue is the scarcity of postpartum depression research and the lack of postpartum depression statistics. As a result, postpartum depression is frequently under diagnosed both locally and internationally. It is also perceived by the general public and the medical community as a time of emotional health that is immune to mental disorder. As a result, the initial and ongoing task is to immerse oneself in data collection and statistics so that postpartum depression cannot be disregarded as being normal or merely symptoms of nursing mothers.

The prevalence of postpartum depression is relatively high (83%) in Ibadan. This demonstrates that the symptoms are merely disregarded or that little effort is being made to address them. Women who said their babies were not intended were more depressed than respondents who said their babies were intended, indicating that the intention to become pregnant is a significant risk factor for depression. Other important risk factors include level of income, experience of financial difficulties, experience of stressful life events, low education, and low physical activity.

One of the main causes of postpartum depression is also a bad or unsatisfactory connection between the couple. One-fourth of the respondents said they did not get along well with their spouses. Therefore, it is crucial to step up efforts to support healthy marriages between partners.

5.3 Recommendation

1. Increasing knowledge of the postpartum depression risk factors in medical settings during postnatal care visits

2. Programs during postnatal care sessions should include health lectures, including education programs on the risk factors linked to postpartum depression.

3. Hiring and educating medical professionals in the proper evaluation and diagnosis of postpartum depression

4. Setting up support groups in well-chosen locations to boost women's self-esteem and promote social and family support for nursing mothers.

5. Government policy in Nigeria should be changed to include measures for diagnosis and treatment that are crucial for identifying postpartum depression.

6. Supporting postpartum depression research, disseminating evaluation findings to pertinent organizations that can benefit from them, and encouraging investments in successful prevention, diagnosis, and treatment programs that are crucial for identifying nursing mothers in need of intervention in order to protect the health of mother and child.

5.4 Contribution for Knowledge

By shedding light on the prevalence of postpartum depression among nursing mothers attending postnatal care sessions at chosen primary health centers in Ibadan North Local Government, Oyo state, the study's findings helped advance knowledge in the field of postnatal depression among nursing mothers and serve as a foundation for further research in this area. The Ministry of Health and Non-Governmental Organizations (NGOs) concerned with the health of women will find this information useful in developing intervention strategies to address issues brought on by the incidence of postnatal depression and risk factors linked with post natal depression among women attending postnatal care meetings at particular primary health centers in Ibadan North Local Government, Oyo state. Reason for the high PPD rates during the course of this research has been discovered to be the absence of a partner at birth and after birth, lack of face-to-face meetings with medical personnel, along with changes occurring in the postpartum period such has changes in the physical appearance.

Also dissatisfaction with living conditions and cohabitation with the husband/partner's parents was found to be a significant predictor of PPD. One possible explanation for this is the importance of cultural norms in the country. Newly married couples are expected to live with the husband or partner's parents. Relationship with mother-in-law is also found to be a significant predictor of PPD in this study. The Ministry of Health and Non-Governmental Organizations concerned with the health of women of reproductive age and the general

population of women will find this information useful in developing intervention strategies to reduce concerns brought on by the prevalence of prenatal depression. The results of this study also have consequences for health promotion and education, necessitating a variety of approaches to address the issue.

5.5 Suggested Areas for Further Research

Future research could seek to identify barriers to accessing postnatal care to its optimal level such as conducting researches on the knowledge and attitude of families as well as primary health care workers towards postpartum depression.

Also so find means of disseminating information to disabled mothers who may find it difficult to attend postnatal care sessions.

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Appendix i

Questionnaire

My name is Amuda Mariam Abiodun, a post graduate student of LEAD CITY UNIVERSITY, Faculty of Medical and Applied Science, Department of Public Health, Ibadan. The purpose of this study is to assess postpartum depression and maternal wellbeing among nursing mothers attending selected primary health centers within Ibadan North Local Government Area. The findings from this study will help serve as input in designing educational programmes to reach out to pregnant women attending postnatal care sessions.

Your identity, responses and opinion will be kept strictly confidential and will be used for the purpose of this research only. Please note that you do not have to write your name on this questionnaire, your kind assistance is sought for you to answer the questions below as accurately as possible to make the research a success. However, your participation is voluntary and you may request to withdraw at any time.

Would you want to participate in the study?

Yes ( )

No ( )

Section A: Socio Demographic Data

Instruction; kindly provide all necessary information requested by ticking ( ) the alternative answer you think are appropriate in line with your views.

1. **Age:** What is your age as at your last birthday ……. (Actual age or year of birth)
2. **Ethnic group:** 1. Yoruba ( ) 2. Hausa ( ) 3. Ibo ( ) 4. Others (specify…….)
3. **Religion:** 1. Christianity ( ) 2. Islam ( ) 3.African Traditional ( ) 4. Others (specify……)
4. **Highest level of Education:** 1. No formal education ( ) 2. Primary ( ) 3. Secondary ( ) 4. Tertiary ( )
5. **Occupation:** 1.Trading ( ) 2. Artisan ( ) 3. Housewife ( ) 4.Government worker ( ) 5. Self-employed ( )
6. **Marital status:** 1. Married ( ) 2. Widowed ( ) 3. Separated/divorced ( ) 4. Single ( ) (Answer Q7 if married)
7. **(For married only) what type of marriage:** 1. Monogamy ( ) 2. Polygamy ( )
8. **Level of income:** 1. less than #5000 ( ) 2. #5000( ) 3. Greater than #5000 ( )
9. **Do you smoke?** 1.Yes ( ) 2. No ( )
10. **Do you take alcohol?** 1. Yes ( ) 2. No ( )
11. **Baby's Age:** 1. 1-5 months ( ) 2. 6-10 months ( ) 3. 11-15 months ( ) 4. 16-20 months

Section B: Edinburgh Postnatal Depression Scale 1 (EPDS) (Prevalence of depression)

As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt in the past 7 days, not just how you feel today.

1.	I have been able to laugh and see the funny side of things o Yes o No
2.	I have looked forward with enjoyment to things o Yes o No
3.	I have blamed myself unnecessarily when things went wrong o Yes o No
4.	I have been anxious or worried for no good reason o Yes o No
5.	I have felt scared or panicky for no very good reason o Yes o No
6.	Things have been getting on top of me o Yes o No
7.	I have been so unhappy that I have had difficulty sleeping o Yes

	o No
8.	I have felt sad or miserable o Yes o No
9.	I have been so unhappy that I have been crying o Yes o No
10.	The thought of harming myself has occurred to me o Yes o No

Section C: Maternal Well-Being

1= Very dissatisfied

2= very Satisfied

How satisfied are you with:

S/N	Variables	1	2	3	4	5	6
1	Your Health?						
2	The amount of pain that you have?						
3	Amount of energy for everyday activities?						
4	Amount of control you have over your life?						
5	Your ability to take care of yourself without help?						
6	Your physical appearance?						

7	The amount of sleep that you are getting?						
8	Your breasts?						
9	Your surgical incision or episiotomy?						
10	Your sex life?						
11	Your peace of mind?						
12	Your Personal faith in God?						
13	Your happiness in general?						
14	Your life in general?						
15	Your amount of worries in your life						

Section D: Assessment of Factors For Postpartum Depression

S/N	Variables	YES	NO
1	Do you have a good relationship with your parents and other family members?		
2	Do you have a good relationship with your spouse?		
3	Does your husband help with house chores and in taking care of the children?		
4	Is this pregnancy intended?		
5	Did you have difficulty becoming pregnant?		
6	Do you and your partner have joint and concrete arrangements towards delivery?		
7	Does he encourage you to seek professional help when needed?		
8	Have you had previous episodes of miscarriage or still birth?		

9	Have you experienced prolonged labor in the past		
10	Are you anxious about being able to cope with the expected baby		
11	Do you have any health problems in this pregnancy		
12	Do you rely on drugs, alcohol or other substances to help you deal with things?		

Thank You for Participating In This Study

Appendix ii

Orúkọmini Amuda Mariam Abiodun akéẹ̀kọ́ ile iwe giga ti Lead City Yunifásítì ti ìlú Ìbàdàn. Ìdí pàtàkì fún àgbékalè ìwádìí yìí ni láti wádìí òkodoro nípa ìwọ́pò ati Alafia larin àwọn olomo tuntun láàrin Ìjọba Ìbílẹ̀ Àríwá Ìbàdàn.

Àbájáde ìwàdìí yìí yóò ṣe ìrànlọ́w ó láti ṣe àgbékalẹ̀ ètò ìlanilóy ẹ̀ fún àwọn iya tó n toju omo lowo yóò sì sẹ ìràn lọ́wọ́ látilè jẹ́kí òye yé wọn láti máa lòó fún àyèẉò àti lílò fún ìtọ́jú ara gẹ́gé bí àwọn ìṣègùn sẹ làá sílè fún wọn tí a bá fúnra pé àìsẹdéé wà lásìkò oyún níní nípa lílo òṣùnwòn ajẹmọ́-èy ìn-ibímọ ti Éd ínbóọ̀ g ì (Edinburgh).

Àkójopò ìwádìí tí a bá ṣe nínú ìmò ìjìnlè yìí ni a lè ṣàmúlò láti fi ṣe àgbékalẹ̀ òte láti ṣàyèwò àwọn tí ó wà ní ipò yii ni orílẹ̀- èdè yìí.

Orúkọyín, ohuntí agbọ́ lénu yín àti èrò tíagbà kalẹ̀ ni a o ṣe lójọ̀ ni yóò sì jẹ́ mọ̀-óṇ-nú fún wa, tí yóò sì wúlò fún ìwádìí ìjìnlè yìí nikan. Kìí ṣe dandan kí ẹ kọ orúkọ yín sí ibi ìbéèrè tó wà nísàlè wọ̀nyí, gẹ́gẹ́ bí ìbèérè wọ̀nyìí bá ti rí sí yín gan-an ni kí ẹ sọ láti lè jé ki ìwádìí ìjìnlè yìí kẹ́ṣ ẹ járí

Léy ìn náà, ìkópa yìí kìí ṣe dandan gbòṇ -òṇ , ẹ lè fà sẹ́yìn lásìkò tó bá wù yín.

(1) N jé ẹ nífẹ̀ẹ́ láti kópa nínú ìwádìí yìí?

Béẹ̀ṇi( )

Béẹ̀kọ́ ( )

Abala Kìíní (Section A) Àkójopo Iwadii Lati Inu Awujo.

Alaye; e jowo e ba wa dahun awon ibeere to nipa fifowo si inu amin akamo () eyi ti o ba ba ero yin mu.

1`Ki ni ojo ori yin ni ojo ibi yin to koja----------(ojo ori yin gan-an)

2.Eya wo ni yin ? (1) Yoruba { } (2) Hausa { } (3) Igbo { } (4) omiran, ko o sibi----

3.Esin; (1) omo leyin Jeesu (2) Elesin Isilaamu (3) Elesin ibile (4) omiran, koo sibi-----

4.Iwe ti e ka (1) N ko kawe { } (2) Ileewe A lakoobere{ } (3)Ekose owo{ } (4)Iwe mewaa{ mo pari} { } (5) Iwe mewaa{ n ko pari} { } (6) Ileewe giga { }

(1) Olukoni agba (NCE) { }

(2) Ileewe Gbogbonse ipele Akoko (OND) { }

(3) Gbogbonse ipele keji { HND] { }

(4)Ileewe Yunifasiti { }

5. Ise ise re : (1) Onisowo{ } (2) Onise owo{ } (3)Iyawo ile { } (4) Osise ijoba { } (5) Onise Aladaani{ }

6. Ipo Lawujo: (1) Mo ti loko{ } ,Mo ti feyawo{ } (2) Opo { } , (3) A ti kora sile { } (4) N ko tii se igbeyawo rara { } (5) igbeyawo wa ti tuka{ }

(Dahun ibeere keje to o ba ti se igbeyawo) {Fun awon to ba ti se igbeyawo nikan),

7. iru igbeyawo wo ni? (a) oniyawo kan{ } (b) olopo iyawo { }

8. Bi owo se n wole (1) ko to egberun marun-un (N5,000) ni osu { } 2. Egberun marun-un (N5,000) ni osu { } 3. Oju egberun marun-un (N5,000) lo ni osu { }

9. N je o n mu siga tabi

10. Nje o ma n mu oti lile? Beeni { } Beeko {

11. Ojo ori omo: (1) Osu kan si osu karun {] (2) Osu kefa si osu kewa { } , (3) Osu kanla si osu medogun {}, (4) osu merindinlogun si ogun { }

Abala Keji: Osunwon Edinboogi (Edinburgh) fun Ayewo Ajemo-Irewesi Aboyun Leyin Ibimọ.

(Ijeyo Irewesi), gegebiosejepeaboyunniyin,tabi esesebimo,afemobiarayintinri.Ejowo,e wo idahun to ba sun mo bo se n se yin gan-an.

Ni BI OJO MEJE SEYIN, kii se bo se n se yin ni oni nikan.

11.	Mo n ni anfaani lati rerin- in ti mo si n ri adun oro • Bee ni • Bee ko
12.	Mo maa n wa idunnu si nnkan • Bee ko • Bee ni
13.	Mo n bara mi wi lasan ti nnkan ba polukurumusu • Bee ni • Bee ko
14.	Mo maa n ni idaamu okan lainidii kan pato • Bee ni • Bee ko
15.	Ijaya ati iberu maan mu mi lainidii kan pato • Bee ni • Bee ko
16.	Nnkan maa n kami laya pupo ju

	• Bee ni • Bee ko
17.	Inu mi ko dun wipe n ko roorun sun • Bee ni • Bee ko
18.	Inu mi kii dun, tabi fokanbale • Bee ni • Bee ko
19.	Inu mi ko dun notori pe mo maa n sunkun • Bee ni • Bee Ko
20.	Erongba lati se ara mi nijamba ti wa sokan mi • Bee ni • Bee ko

ABALA KETA: Ilera Iya Olomo

1= ko te mi lorun rara 2= ote mi login gan

Bawo lo se te e lorun si:

S/N	Variables	1	2		
1	Ile ra re?				
2	I ro ra?				
3	A gbara lati sise?				
4	A ye to ni fun rare?				
5	Lati toju a rare lai si iran lowo?				
6	Bo se ri?				
7	Eye orun to ma n sun?				
8	O yan re?				
9	A be ti won da fun o?				
10	E ba lopo re?				
11	E fokan bale re?				
12	E gbeke le olorun?				
13	E dun nu re?				
14	Aye re?				
15	E ronu re?				

Abala Kerin: Ijielewon Awon Ewu To Ro Mo Koko Irewesi

S/N	Variables	Bee ni	Bee ko
1	Nje ibasepo iwo pelu awon obi re dara ati awon molebi yooku?		
2	Nje ibasepo iwo pelu ololufe re dan moran?		
3	Nje oko re maa n ran e lowo nipa ise ile lati toju awon omo?		
4	Nje e fe oyun yi?		
5	Nje o ni isoro lati ni oyun?		
6	Nje iwo ati ololufe re ni ajoso ati eto pataki nipa ibimo/ojo ikunle?		
7	Nje o maa fun e ni iwuri lati wa iranlowo lodo awon akosemose lasiko to ba oyun ti wale lara re ri bi omo aipe-ojo?		
8	Nje o ti ni isoro ibimo ri seyin ni ojo ikunle?		
9	Nje o gbara le oogun, oti lile tabi awon nnkan miran lati gbe igbese?		
10	Nje o ni isoro ailera ninu oyun yii?		
11	Nje o ti gbe igbe – aye ainifayabale ri laipe ojo (iku eni to sunmo, tabi ore, isoro ile gbigbe, tabi airowona ati bee bee lo)		

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Profile

A self-motivated and hardworking public health enthusiast seeking a job that utilizes my excellent skills and past work experience in the healthcare field and to work in an environment which encourages me to succeed and grow professionally where I can utilize my skills and knowledge appropriately. Vast knowledge in analytical techniques, microbial assays as well as physical and mechanical tests on a wide range of consumer goods.

Educational Qualifications with date

- Leadcity University 2020 - till date

Masters of Public Health (MPH)

- Alhikmah University Ilorin. 2014-2019

Biochemistry (BSc)

Professional Experience

- Kazlat public analyst laboratory, Jan 2020 - Nov 2020 11 months. Ado-Odo/Ota, Ogun, Nigeria

Make use of a host of analytical techniques, microbial assays as well as physical and mechanical tests on a wide range of consumer goods that may have an effect on human health or the environment.

- Research Intern at Institute for Advanced Medical Research and Training (IAMRAT) UCH Ibadan, Jun 2018 - Aug 2018 3 months. Oyo State, Nigeria,

Assisting staff with research tasks, helping with information management, drafting documents, and completing other tasks as required by supervisors.

- Quality Control Assistant at Quality foods Nig ltd, Jun 2017 - Aug 2017 3 months. Oyo State, Nigeria.

I assist in the collection and grading of food samples, record and input data into system, notify the operator on food standard. Monitor processes, materials and surroundings Help in the development and continuous improvement of the quality control program.

Skills and Expertise

- Laboratory skills
- Quality Control
- Laboratory Safety
- Database/Data entry management
- Monitoring and evaluation of health commodities
- Critical Thinking
- Excellent communication Skills
- Team Player

- Proficiency in Microsoft Word, Excel, PowerPoint etc.
- Ability to thrive/adapt in a fast paced and entrepreneurial environment

Reference

Available upon request

University Compliance Certificate

This is to certify that this thesis by Mariam Abiodun AMUDA with Matric No. LCU/PG/001944 in the Department of Public Health, Faculty of Basic Medical and Applied Sciences, Lead City University, Ibadan is in full compliance with the approved university format.

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Signature Date