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Intimate Partner Violence During Pregnancy and Prenatal Care Attendance in Abuja, Nigeria.

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Walden University

College of Health Sciences

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Dorothy Ezekwe-Anya

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Walden University
2017

Abstract

Intimate Partner Violence During Pregnancy and Prenatal Care Attendance

in Abuja, Nigeria

by

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MPH, Walden University, 2011

BSc Health System Management, University of Baltimore, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Intimate partner violence (IPV) among women poses a significant threat to maternal mortality during pregnancy in Nigeria with a prevalence rate of 14% in the southern region versus 43% in the northern region. Early and adequate prenatal care is essential for improving pregnancy outcomes and the reduction of the maternal mortality rate. Previous studies in several countries have demonstrated a unique barrier to healthcare access among women exposed to IPV. This study assessed the association between IPV during pregnancy and prenatal clinic attendance, using a cross-sectional quantitative study design guided by the social learning theory. The modified Conflict Tactile Scale module and the Adequacy of Prenatal Care Utilization index were used to assess 467 pregnant women attending prenatal care at two government hospitals in Abuja, Nigeria. Results showed a 55.2% IPV prevalence among studied pregnant women in Abuja. A significant relationship was not established between IPV and prenatal clinic visits and its early initiation. However, media exposure ($p = .016$) was positively associated with prenatal clinic visits, while parity ($p < .001$) and wealth index ($p = .017$) had significant associations with prenatal clinic initiation using a chi-square test of association analysis. Multiple logistic regression analysis further showed that pregnant women who were exposed to IPV were less likely to have inadequate prenatal visits; however, this was not statistically significant ($OR = 0.795$, $CI = 0.491-1.287$, $p = .351$). Women in the lower wealth index ($OR = 2.297$, $CI = 1.101-4.794$, $p = .027$) and those with inadequate media exposure ($OR = 1.999$, $CI = 1.020-3.916$, $p = .043$) were more likely to have inadequate prenatal clinic visits. The impact of the study on positive social change will guide discussions on the need for standardized IPV abuse screening and evaluation at all levels of healthcare entry for Abuja women.

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Chapter 1: Introduction to the Study

Background

The role intimate partner violence (IPV) plays in prenatal care attendance and maternal healthcare-seeking behavior is not well understood in most Sub-Saharan African countries. This is particularly true in Nigeria, according to the Nigeria Demographic and Health Survey conducted by the National Population Commission Nigeria & ICF Macro (National Population Commission [NPC], 2009), where the total fertility rate of 5.7 births per woman and the IPV rate of 46% are considerably high, respectively. IPV is a shameful human rights violation that cuts across the globe, regardless of ethnicity, culture, or socioeconomic status. These forms of degradation and deprivation can happen any time and in any location, from home to the workplace (Adebayo & Kolawole, 2013). IPV is a form of gender-based violence and is used synonymously with domestic violence in the context of this study.

IPV, according to World Health Organization's (WHO) definition, is the most common form of violence against women. It includes physical, sexual, and emotional abuse, and controlling behaviors by an intimate partner (WHO, 2012). The act of physical violence includes slapping, kicking, pushing, and beating, whereas sexual IPV encompasses forced sexual intercourse and other forms of sexual coercion. Psychological abuse involves insults, belittling, constant humiliation, threats of harm, or controlling behaviors that consist of isolating a person from friends and families; monitoring their movements; and restricting access to financial resources, employment, education, or medical care (Krug, Mercy, Dahlberg, & Zwi, 2002; WHO, 2012).

A review of studies in Sub-Saharan African and Asian countries showed the IPV rate ranging from 28% in Madagascar to 74% in Ethiopia and 57% in India to 87% in Jordan (Uthman, Lawoko, & Moradi, 2009). In a multicountry study by Garcia-Moreno Jansen, Ellsberg, Heise, and Watts (2006) on the extent of physical and sexual IPV against women in 10 different countries, they reported a rate ranging from 18.5% to 75.8%. In their study, domestic violence by an intimate partner alone had a rate of 15.5% to 70.9%, while violence by nonpartners recorded a range between 5.1% and 64.6% within the study participants (Garcia-Moreno et al., 2006).

In 2010, the United States recorded a lifetime IPV rate of 36.6% among women ever being victimized by an intimate partner (Black et al., 2011) compared to a rate of 25% in 1998 (Tjaden & Thoennes, 2000a). Although several studies have shown women to be at a high risk of IPV (Breiding, Black, & Ryan, 2008), IPV during pregnancy constitutes a more global concern because of the adverse health consequences on both the mother and the unborn child (WHO, 2005). IPV magnitude and risk factors during pregnancy vary from country to country; however, the main predictors are known to be (a) history of prepregnancy violence, (b) cultural variations that influence IPV acceptance and disclosure, (c) population demographics such as developed or developing regions, and (d) degree of gender inequality within the society (Taillieu & Brownridge, 2010). In the United States, IPV during pregnancy, according to experts, appears to be more common than most obstetric conditions such as preeclampsia, placenta praevia, gestational diabetes, or twin pregnancy (Devries et al., 2010; Khan, Wojdyla, & Say, 2006).

The economic cost of pregnancy-related IPV is not well documented in Nigeria, but in the United States, an estimated direct and indirect cost of IPV exceeds \$5.8 billion annually (Gerberding, Binder, Hammond, & Arias, 2003). Also in the United States, pregnancy-related IPV was implicated for high perinatal and neonatal mortality risks among exposed women (*AOR* 2.59 95%; *CI* 1.35-4.95) compared to unexposed pregnant women (*AOR* 2.37 95%; *CI* 1.21-4.62; Ahmed, Koenig, & Stephenson, 2006). IPV is also noted to be a leading cause of maternal mortality in the United States and the United Kingdom (Lewis, 2007). In Nigeria, study results from a nationally representative sample of mothers aged 15 to 49 years showed that women who are not exposed to IPV were 0.69 times less likely to lose a child under 5 years old compared to exposed women (*OR* 0.69 95%; *CI* 0.62-0.78),). In the same study, having no decision autonomy in family issues showed a significant 1.5 times likelihood of losing a child under 5 years among exposed women compared to unexposed women (Osuorah, Antai, Ezeudu, & Chukwujekwu, 2012).

According to a World Bank (2013) report, the maternal mortality ratio for 2012 for Nigeria was 630 per 100,000 live births; while the 2013 National Population Commission (NPC) report of perinatal mortality were 41 per 1,000 pregnancies. In 2008, 36% of surveyed women in Nigeria did not receive or attempt to receive any prenatal care (NPC, 2009). As a developing country, Nigeria experiences many direct and indirect factors that influence high maternal and perinatal mortality rates. However, what is globally known is the importance of adequate maternal preventive health care, proper prenatal care during pregnancy and professional assistance during delivery (NPC, 2013).

Early and adequate prenatal care is a widely accepted major determinant of maternal and child health and is one of the objectives of Healthy People 2020 Initiatives, which called for an increase in the proportion of pregnant women who receive early and adequate prenatal care (Centers for Disease Control and Prevention [CDC], 2011; NPC, 2008; Partridge, Balaya, Holcroft, & Abenhaim, 2012). The relevance of this objective to the present study concerns the area of physical and emotional violence during pregnancy that may affect care received during pregnancy. The pregnancy period is a critical time that creates an opportunity to identify existing health risks in women as well as prevent future health problems for mothers and children (CDC, 2011).

Routinely, antenatal care consists of an initial visit in early pregnancy and subsequent monthly attendance, followed by biweekly visits after 30 weeks, and a final weekly visit for the last 6 weeks of pregnancy. However, four focused visits are recommended by WHO, for a normal noncomplicated pregnancy, and consist of a first visit around or before the 12th week of gestation, a second visit at the 26th week, a third visit between 32 and 38 weeks, and a fourth visit between 38 weeks and 40 weeks (WHO, 2002). Currently in Nigeria, the median duration of pregnancy at first antenatal clinic (ANC) visit is late into the pregnancy between 5 and 6 months (NPC, 2008, 2013).

Prenatal care visits promote good health through the gestation period, as they increase the chances of early screening, classification of care based on an underlining of medical conditions, medication regime, and possible use of a skilled and professional attendant at birth. In 2013, the World Health Global Health Observatory data showed that globally, 289, 000 women died in pregnancy and child birth related causes; and daily,

approximately 800 women die in such preventable causes with low-resource settings bearing the most burdens (WHO, 2015). Their study further indicated that in developing countries such as in Nigeria, a lifetime risk of a woman dying from maternal-related causes is 23 times higher compared to women in developed countries (WHO, 2015). However, studies that addressed IPV and use of maternal preventive health services had shown that women who experienced IPV are known to have a unique barrier to preventive healthcare access, including prenatal care visits (Wilson, Silberberg, Brown, & Yaggy, 2007).

McCloskey et al. (2007) pinned down intimate partner interference with reproductive healthcare visits among women as well as a delay in seeking prenatal care. IPV was also found to limit a victim's education and employment potential (Adams, Greeson, Kennedy, & Tolman, 2013; Meisel, Chandler, & Rienze, 2003). Women who are exposed to IPV, especially in adolescence, are at a higher risk for attaining less education (Adams et al.) and are negatively associated with losing jobs during the year, having lower wages, and working fewer weeks in a year (Meisel et al.). IPV cuts across culture and socioeconomic status, and a society with a deep-rooted sociocultural attitude towards IPV is a known major predictor of IPV against women and a barrier for its mitigation (Garcia-Moreno, Campbell, & Sharps, 2004; Garcia-Moreno et al., 2006). Nigeria still remains patriarchal in nature, where men are regarded as gods of the household, controlling every affair, including the women's right to reproductive capabilities (Makama, 2013). The majority of IPV cases are still unreported to the law because of the inadequate policies that trivialize IPV as family affairs and never care to

prosecute offenders (Linos, Slopen, Subramanian, Berkman, & Kawachi, 2013).

Substantial ethnic groups still justify physical violence as a love symbol that should not be reported or as punitive for perceived wrong doing (Uthman et al., 2009).

To compound the issue, there is no routine standardized screening tool for IPV in most hospitals and health centers in Nigeria for women seeking preventive health. Healthcare providers may not ask pregnant women about specific acts that occur commonly in violent relationships at any point of care during prenatal care visits. This results in about 97.2% or more unreported incidences seen in several studies (Adebayo & Kolawole, 2013; Linos et al., 2013; Makama, 2013). Based on this culture of tolerance and high prevalence of IPV during pregnancy, there is an urgent need for proper and accurate assessment and measurement of IPV during pregnancy in order to mitigate possible associated interference with prenatal care and assistance during delivery in the Nigerian healthcare delivery system. The understanding of the diverse sociocultural influence of IPV within the Nigerian society will assist researchers to better measure associations of IPV in the context of other variables that seem to confound its effects on prenatal attendance and compliance with regimes as well as healthcare-seeking behavior of women who are exposed to IPV. With early screening and identification of IPV exposure among women during the prenatal period, most of the maternal and neonatal health consequences would be ameliorated if not avoided in Abuja, Nigeria.

Previous studies on IPV have centered on prevalence rates, social or situational characteristics, and maternal and neonatal complications. Some have debated the theoretical underpinning of childhood violence exposure on adult violence. Bandura

(1977) expanded on the work of Tarde, a French theorist who conceptualized learning and development. Bandura's social learning theory holds that no one is born a criminal or a violence perpetrator; rather, individual behaviors come from watching and imitating other people's behavior. This concept was linked to a theory of domestic violence through modeling behavior because studies have shown that intimate partner perpetrators became what they were from observed childhood role models.

Murrell, Christoff, and Henning (2007) studied 1,099 domestic offender inmates serving jail terms in a correctional facility to investigate the association between childhood exposure of IPV and an act of violence later in life. They showed a significant link between childhood IPV witness or exposure and adult intimate relationship violence. Participants who were exposed as children were found to have more likelihood of committing more frequent domestic violence crimes as adults ($F [3, 1094] = 26.90, p < .001$; eta-squared was .069). They were also found to have committed more severe forms of domestic violence ($F [3, 1095] = 14.95, p < .001$); eta-squared was .039 compared to those with no childhood exposure history. In a different study with a female population, Afitie et al. (2009) found that women who were victims of childhood physical or sexual abuse were in their adult life found to have increased risk for IPV ($AOR = 2.01, 95\%$; CI 1.16, 3.48) compared to women who were not exposed to childhood physical or sexual abuse ($AOR = 2.27, 95\%$; CI 1.27- 5.76).

Different dimensions of IPV afflictions on women have been studied. Some research was done on abuse patterns (Olagbuji, Ezeanochie, Ande, & Ekaete, 2010), while several were done on risk factors and complications (Romero-Gutierrez, Cruz-

Arvizu, Regalado-Cedillo, & Ponce-Ponce de Leon, 2011). A few focused on IPV interference with female reproductive healthcare seeking, including early prenatal care (Koski, Stephenson, & Koenig, 2011). Several risk factors have been linked to IPV exposure on women, such as smoking, alcohol and drug abuse, depression, low self-esteem, suicidal ideations, and other medical conditions (Black & Breiding, 2008). Afifie et al. (2009) suggested that women who were exposed to IPV are almost twice at higher odds of having anxiety disorder ($AOR = 1.90$, 95%; CI 1.17-3.11), five and half times higher odds of abusing drugs [$AOR = 5.50$, 95%; CI 1.57-19.25], almost three times higher odds of exhibiting disruptive behavior disorders ($AOR = 2.95$, 95% CI 1.24-7.02), and almost eight times higher odds of having suicidal ideation ($AOR = 7.72$, 95%; CI 2.52-23.66), compared to unexposed women. Women who are victims of domestic violence are at a higher risk to suffer from reproductive health disorders, such as sexually transmitted diseases and chronic pelvic pain, as well as physical trauma to mother and unborn child (Koski et al., 2011). Other complications include unwanted pregnancy, bleeding, pregnancy termination, preterm labor, low birth weight of infants, still born babies, miscarriages, and abortions (Iliyasu, Abubakar, Galadanci, Hayatu, & Aliyu, 2013).

Other researchers have argued that IPV behaviors are socially patterned and their effect varies contextually, based on cultural diversity among demographic locations, which inversely affects how victims respond to IPV behaviors. In Nigerian society, gender inequality from a deep-rooted patriarchal system and cultural influence impacts IPV justification and disclosure despite obvious maternal and neonatal complications

(Linos et al., 2013; Makama, 2013). Equally in Kenya, gender inequality was found to be a strong barrier against women's and girls' self-protection against HIV/AIDS transmission. In their study, Ghanotakis, Peacock, and Wilcher (2012) emphasized the role gender inequality played in limiting the progress of the Prevention of Mother-to-Child Transmission of HIV program in Kenya. Similarly, in Abuja, Nigeria, the administrative capital of the country, centrally located in the northern part of the country, domestic violence has been found to be consistently high (Arulogun & Jidda, 2011; Efetie & Salami, 2007), and research on the health seeking behavioral effects of IPV represents a gap in the literature and a cause for concern. Therefore, in this study, I evaluated the experiences of IPV and their possible association with prenatal care attendance among pregnant women visiting selected hospitals in Abuja, Nigeria.

Statement of the Problem

The research issue of focus is the global nature of IPV and its physical, emotional, and reproductive health consequences (Bonomi, Anderson, Rivara, & Thompson, 2007; Devries et al., 2010; Uthman et al., 2009). Pregnancy-related violence is a public health issue because it is more common in the population than several other maternal health conditions that are routinely screened in prenatal clinics (Devries et al., 2010). IPV devastates individuals, families, and societies, and overwhelms healthcare systems, social services, law enforcement, and judicial systems with great fiscal burden (Wathen et al., 2007).

Besides pregnancy-related IPV being a public health issue, it has also been noted that pregnancy itself is a major risk factor for violence, as IPV prevalence and patterns

tend to start or intensify during pregnancy and the perinatal period (Diaz-Olavarrieta et al., 2007; Garcia-Moreno, Heise, Jansen, Ellsberg, & Watts, 2005; Olagbuji et al., 2010). Pregnancy-related IPV was implicated for high perinatal and neonatal mortality risk among exposed women (*AOR* 2.59 95%; *CI* 1.35-4.95) compared to unexposed pregnant women (*AOR* 2.37 95%; *CI* 1.21-4.62; Ahmed et al., 2006). Neonatal complications include intrauterine growth retardation (Coker, Reeder, Fadden, & Smith, 2004), preterm delivery, and low birth weight with extended intensive hospitalization (Kaye, Mirembe, Bantebya, Johansson, & Ekstrom, 2004; Silverman, Decker, Reed, Raj, 2006;). Maternal consequences associated with IPV during pregnancy include but are not limited to abortions, miscarriages, preeclampsia, gestational diabetes, and placental abruption (Sanchez et al., 2008; Silverman, Decker, Reed, & Raj, (2006).

Women who are exposed to IPV during pregnancy were likely to be depressed, and disclosed anxiety (Jundt et al., 2009; Rodriguez, Heilemann, Fielder, Ang, & Mangione, 2008) and expressed suicidal ideations and/or attempts (Martin, Taft, & Resick, 2007) compared to unexposed pregnant women. Risky health behaviors such as cigarette smoking and alcohol and drug abuse are associated with IPV exposure during pregnancy (Bailey & Daugherty, 2007; Shurman & Rodriguez, 2006). Studies have also shown that women who are exposed to IPV during pregnancy (a) exhibit strained relationships with healthcare providers (Plichta, 2004), (b) have limited access to healthcare (Weinbaum et al., 2001), (c) show less adherence to prenatal care regime and visits (Moraes, Amorim, & Reichenheim, 2006), and (d) greatly express signs of social isolation (Hadeed & El-Bassel, 2006).

In Sub-Saharan Africa, several efforts and resources have gone forth to reduce maternal mortality, with substantial progress. Although slow steady progress has been made, Nigeria's maternal mortality ratio is still among the highest rate in the region with 560 per 100,000 live births. In 2013, lifetime risk of maternal death in Nigeria was 1 in 31. In addition, Nigeria, with 40,000 maternal deaths (14%), and India, with 50,000 maternal deaths (17%), alone accounted for one third of all global maternal deaths reported in 2013 (WHO, 2014). According to research, inadequate use of prenatal care services, preventive health, and trained health providers at delivery contribute significantly to the increased risk of poor pregnancy outcomes and the maternal mortality rate in Nigeria (Doctors, 2011).

Currently, in the Nigerian health system, initial IPV screening is lacking at the point of care for vulnerable pregnant women, and as such, the prevalence and the part IPV plays on prenatal care attendance is understudied. In addition, studies have shown that women who are exposed to IPV during pregnancy are more likely to experience poor health with higher rates of mortality compared to unexposed women (Kaye et al., 2005; Krantz & Garcia-Moreno, 2005). Proper prenatal screening and intervention of IPV is essential in preventing several obstetrical complications that increase the risk of neonatal mortality in both acute care and community health settings. This research, therefore, is aimed at assessing the associations between IPV during pregnancy and prenatal clinic attendance among exposed women in selected hospitals in Abuja, Nigeria.

Research Questions and Hypotheses

Research Question 1: To what extent is maternal experience of IPV during pregnancy associated with prenatal care attendance?

Null Hypothesis 1: Maternal experience of IPV during pregnancy is not associated with prenatal care attendance.

Alternative Hypothesis 1: Maternal experience of IPV during pregnancy is associated with prenatal care attendance.

Research Question 2: To what extent is maternal experience of IPV during pregnancy associated with prenatal clinic commencement within the first trimester?

Null Hypothesis 2: Maternal experience of IPV is not associated with prenatal clinic commencement within the first trimester.

Alternative Hypothesis 2: Maternal experience of IPV during pregnancy is associated with commencement within the first trimester.

Purpose of Study

The identification of an association between IPV experience and lack or late prenatal initiation would be a significant literature contribution to what is already known about IPV health consequences on both the mother and unborn child. In this study, I examined IPV exposure experiences and limitations on obtaining basic reproductive health care, including prenatal care during pregnancy. I also examined whether women who were not exposed to IPV display any negative attitudes in seeking prenatal care services. The cultural impact of IPV acceptance and disclosure in the northern region in which Abuja, the site of the study is located, was also evaluated. I further examined the

influence of IPV exposure in accessing basic maternal preventive health services such as knowledge and use of contraceptives, well-woman checkups, and tests. I also looked at possible independent influence of some maternal variables such as maternal education, age, decision making ability, media and wealth quintile on prenatal care attendance, and compliance with regime.

Theoretical Framework

Several theorists have argued explanations concerning human violent behaviors in bonding relationships as seen over the years in marital relationships. Bandura's (1977) social learning theory explained human behavior as a cyclic reciprocal interaction between cognitive, behavioral, and environmental interference. The key premises of the social learning theory lay major emphasis on the external environment that becomes an individual source of observational learning (Schiavo, 2007). According to Schiavo, the social learning theory takes the environment as a place for an individual to observe an action, understand its consequence, and as a result of personal and interpersonal influences, get motivated to repeat and adopt what was learned (p. 39). This theory indicates that individuals adopt modeled behavior if (a) the result is what they really value, (b) the model is similar to the observer, and (c) he or she has admired the behavior as a functional valued behavior (Bandura, 1969, 1977). This theory explains the influence exposure has in a male dominant environment as boys have witnessed repeated domestic violence and then have grown into adulthood with the impression that this is a normal and accepted behavior to replicate. IPV incidence, acceptance, and disclosure are greatly influenced by societal culture, which is the case in a Nigerian environment. IPV impact is

greatly influenced by its acceptance, which further affects disclosure and prevalence rate in a population (Linos et al., 2013).

The social learning theory was challenged by the loss of control theory presented by Klein, Campbell, Soler, and Ghez (1997). The loss of control theory stipulates that men act out violence as a result of uncontrolled and unexpressed anger that has built up due to gendered societal expectations. However, this theory contradicts itself, as the abuser never hits untargeted victims. According to Klein et al., attacks are always targeted towards specific individuals (intimate partners) at specific places and times. In the loss of control theory, the batterer hits the specific target at specific times and at specific sites.

Women in general, and specifically during pregnancy, are vulnerable and helpless, hence easily become the victims of such abuse and frustration. On the other hand, other theorists have attempted to explain why women remain in abusive relationships. In his early 60s theory of “learned helplessness,” Seligman and Maier (1967) argued that prior learning in life can result in real life behavioral changes that can be very drastic and can result in individuals accepting and remaining resilient and passive in negative situations, despite their ability to change such situations. Seligman (1975) further argued that due to such negative expectations, other factors such as shame, low self-esteem, children’s welfare, stigmatization of divorce, or physical illness may influence victims’ (women’s) unwillingness to leave or change the negative situations in their relationships.

Based on my reviews, the social learning theory remains a viable explanation of partner violence and guided me to examine partner violence during pregnancy and healthcare seeking. The social learning theory takes on “the environment” as a focus for observational learning (Schiavo, 2007, p. 39). The patriarchal Nigerian environment (culture) sees men as gods and women as owned properties in a relationship (Linos et al., 2013), and as such, can engage and control all rights of the counterpart within that relationship and can victimize women for any perceived wrongdoing (Makama, 2013). The conceptual framework of this research, which is discussed in Chapter 2, further explains the connectivity between the physical, sexual, and emotional impact of IPV on exposed women and the associated influence on reproductive healthcare seeking, especially prenatal care initiation and compliance during pregnancy.

Nature of the Study

In this research, I used a quantitative cross-sectional study design in examining the association between IPV during pregnancy and prenatal care attendance, preventive care seeking, and its impact birth outcomes in Abuja, Nigeria. Inclusion criteria for the participants were (a) pregnant women aged 19 to 49 years, (b) residents of Abuja, (c) fluent in English language, able to read and write at a sixth grade level, and (d) seeking prenatal care at the selected public hospitals in Abuja.

My knowledge of the importance of the participants’ informed consent and their confidentiality guided the study’s objective to be valid. Participants were introduced to the intent of the study and their rights as study participants.

The survey instrument (see Appendix A) was a structured questionnaire with different sections on demographic information including socioeconomic status, fertility behaviors, family planning practices, IPV exposure, and knowledge of prenatal care and delivery services available in their locality. Data were entered using the Epi-info 6 statistical package and analyzed with SPSS (version 21). Univariate analysis was done for the preliminary descriptive statistics of the study group, which includes frequency, means, standard deviation, percentages, kurtosis, and histogram to show the normality of the variables and respondents' characteristics. IPV prevalence among covariate subgroups was described using a bivariate contingency table; chi-square was used as a test of significance. Because the study outcome measures were dichotomous variables, binary logistic regression models were used to examine associations between IPV during pregnancy and prenatal care visits adequacy and maternal healthcare-seeking behavior. Level of significance was set at $p < .05$, with a confidence interval of 95% to be able to answer research questions.

Operational Terms and Definitions

Adequacy of prenatal care utilization (APNCU): The APNCU consists of indices to measure prenatal care adequacy (Kotelchuck, 1994; Trinh, Dibley, & Byles, 2006). Several scientists have developed or advanced the work of others in order to assess and measure prenatal care received during pregnancy to prevent adverse birth outcomes. What APNCU entails is a measurement of (a) adequacy of initiation of prenatal visits and (b) adequacy of the percentage of recommended visits received during pregnancy (Kotelchuck, 1994). My study was operationally defined as a measurement of Abuja

pregnant women's duration of pregnancy at their first prenatal care visit and the number of subsequent visits during the index pregnancy (Trinh et al., 2006). A response of *Yes* or *No* to questions and the number of subsequent visits were used to determine an adequate or inadequate use in the study.

IPV exposure: In this study, IPV exposure was operationally defined as an Abuja pregnant woman's experiences of physical or emotional violence that occurred during the index pregnancy by an intimate partner such as current husband, ex-husband, boyfriend, or ex-boyfriend.

Marital status: Marital status is a condition of being married or unmarried. The marital status of a woman is a significant risk factor for domestic violence, especially in Sub-Saharan African countries where the union between man and woman is seen as a cultural covering. However, pregnancy outside marriage is often seen as a cultural taboo and can precipitate ostracism and social isolation in some cases (Makama, 2013).

Maternal age: Maternal age is the mother's age during pregnancy and at birth. It is a vital variable that links IPV exposure and use of prenatal care services (Rahman, Nakamura, Seino, & Kizuki, 2012). Age acts as a proxy in knowledge accumulation that enlightens a woman's decision-making ability in health-related issues (NPC, 2008).

Maternal decision-making autonomy: A woman's decision-making autonomy is operationally defined as a participant's decision-making in her own health issues, including well-woman check-ups. This autonomy is assessed by whether the woman makes healthcare decisions alone or jointly with the partner, boyfriend, or husband, or

whether the decisions are made by her partner alone or by other people regarding her own healthcare issues.

Maternal education: Education enhances confidence and autonomy in decision making towards one's life issues, including those pertaining to health. In studies relating IPV to healthcare usage among pregnant women, maternal education was found to directly link to the increased use of prenatal care and other reproductive healthcare services by trained medical professionals (Rahman et al., 2012).

Maternal healthcare-seeking behavior: Maternal healthcare-seeking behavior in this study was operationally defined as Abuja women's responses and receipt of reproductive health care needs sought from a trained healthcare professional within the previous 12 months prior to and during the current pregnancy.

Prenatal care attendance: Prenatal care attendance in this study is operationally defined as Abuja pregnant women's reception of pregnancy-related services provided by trained health professionals to monitor, maintain, and support the quality health status of the woman and the fetus from conception until the onset of labor. This was measured in this study by the number of prenatal care visits and the gestational age at the first prenatal visit. Prenatal care is the care given to pregnant women to ensure healthy pregnancy outcomes for mother and newborns (WHO, 2002). It offers a wide range of preventive health services consisting of health promotions, health screening, and teaching on nutritional support during pregnancy. It also involves surveillance, detection, and treatment of some medical conditions that pose barriers for normal pregnancy and

delivery and the prevention of sexually transmitted diseases, including HIV/AIDs and mother to child transmission facts and information (WHO, 2002).

Wealth index: Wealth index is a background characteristic that serves as a proxy for one's standard of living over time. It is constructed based on measured asset scores that are weighted and divided into five quintiles from lowest, which is represented by 1, to the highest, which is represented by 5 (NPC, 2013).

Assumptions

The aim of this research was to explore the experience of IPV among pregnant women who attended prenatal clinics in selected hospitals in Abuja, Nigeria within the study period. As a cross-sectional study, several assumptions inherent to the design are considered. For the data to be valid, it was assumed that participants comprehended the questions and responded accurately to the best of their ability. However, I do not claim that all responses by participants are truthful; rather, in order to obtain more reliable responses, the questions were framed at a sixth grade level of standard English to minimize the misunderstanding of words leading to wrong analysis and interpretations. I also assumed that since IPV is so sensitive and stigmatized, participants may have responded to survey questions with the belief that their answers would aid in finding solutions to mitigate IPV among women during pregnancy in Abuja, and Nigeria as a whole, as well as sensitize the society on IPV perception and tolerance. To this end, I reinforced confidentiality and anonymity of participants' identity; hence, study instruments have special coding instead of names so participant identity cannot be traced to the questionnaires.

Scope and Delimitations

Many ethical issues surround research involving humans. Even more sensitive is a study on IPV and a vulnerable population (pregnant women). Therefore, the scope of this research was to discuss the challenges that were specifically particular to IPV during pregnancy and healthcare seeking. The safety and welfare of the research participants are also of paramount importance. Therefore, it was my duty to recommend local support services, shelter, or protection where necessary during data collection to the women who are identified as victims and/or were in imminent danger during the study period by consulting the city social services. Since some women may not seek help because of fear, I identified and contacted a local organization to request assistance for participants. In such cases, follow-up by the researcher is also very important to maintain trust and encourage participants. The researcher's safety is also paramount in an environment where violence, abuse, and domestic issues involving women are common.

Limitations of the Study

The study was expected to have some limitations. The study addressed the participants visiting prenatal clinics in selected hospitals in Abuja, Nigeria. Findings may not be generalized to all the pregnant women in Nigeria. Women who seek prenatal care services during pregnancy may have different exposures to IPV, as compared to those who do not receive any kind of prenatal service. Potential study participants may have been missed as a result of circumstances that prevented them from seeking prenatal care. Rabin, Jennings, Campbell, and Bair-Merritt (2009) reported that women who are abused are less likely to seek medical assistance due to the controlling behavior from the

perpetrator, as compared to women who have been abused. Thus, in an attempt to better understand the impact of IPV on women's health-seeking behavior, there is a possibility of not capturing some pregnant women who have experienced or are experiencing IPV.

As a cross-sectional design, the study is limited in tracking time variations and can only be used to draw casual relationships between the variables of interest because the study participants were pregnant women only, excluding women who were not currently pregnant or have never been pregnant. This study also excludes men whose input could possibly support my understanding of men's view of IPV as it relates to prenatal care-seeking behavior as well as their understanding of gender equality, domestic issues, and other sexual risk factors.

Another limitation is my reliance on self-reporting, which has a risk of underreporting as well as over-reporting IPV exposure. The levels or degree of violence were not validated, and incidents varied among individuals, thus further limiting the study result. Finally, participants were drawn from selected government hospitals, thus excluding opinions of potential candidates who attend private clinics, stay at home, or use birthing centers for delivery. Therefore, results of this study may not be a true representation of prevalence and cannot be generalized for the entire country or other states in Nigeria. However, it is possible to generalize result inferences and conclusions to aid in IPV intervention strategies and deep-rooted gender inequality that breeds IPV in Nigerian society.

Social Change Implication

Positive social change of this study is that knowledge gained could inform discussions on the need to implement standardized IPV abuse screening during pregnancy to identify and manage at-risk women before complications occur. The study outcome may also inform social change on sensitizing healthcare workers on the existence and consequences of pregnancy related IPV. This research adds to the body of literature by highlighting a deeper understanding of societal patriarchy and sexual inequality that play significant roles in intimate relational violence (Makama, 2013). The social change implication of this study may look at transformation through proactive movements that create public awareness and discussion of IPV prevalence and consequences in order to reduce adverse birth outcomes in Nigeria (WHO, 2002). Social change may also look at educational campaigns to reeducate and treat perpetrators as well as establish programs for child victims of intimate relation violence in the home (Poor & Chinnoy, 2005).

Significance of the Study

The majority of published work on IPV focuses on the nature and patterns of violence against pregnant women, but not much is known about the effect IPV has on routine prenatal care attendance and preventive health-service seeking. Adequate prenatal care has been linked to reduction in maternal and infant mortality, specifically, in low-resource settings (WHO, 2002). In this study, I examined the association between IPV during pregnancy and prenatal care attendance by looking at pregnant women's

attendance at two socioeconomically different area hospitals within the federal capital territories of Abuja, Nigeria.

As public health research, the study result intends to promote health by highlighting the importance of data to support the design of health policies and interventions. With a deeper understanding of risks and effects of IPV during pregnancy, healthcare providers are able to screen and identify potential victims early during prenatal visits to provide necessary assistance and minimize health consequences for the mother and unborn child. At the societal level, interventions implemented as a result of this study will aid in massive public campaigns and awareness of the consequences of the present patriarchal system and the high IPV tolerance in Nigeria and other Sub-Saharan African countries as well.

Summary

The prevalence of IPV is considerably high in African countries. More significant is the prevalence of IPV during pregnancy among women living in Africa. These, in most studies, have not been analyzed to their full potential. In Nigeria, gender-based ideas leading to IPV is one of the leading causes of harm to pregnant mothers as well as to their unborn children. Previous IPV research in Nigeria has focused on the prevalence of the issues and health complications. Works on the influence IPV has on prenatal clinic attendance, healthcare-service seeking, and overall maternal mortality is still understudied in Nigeria, especially in the north central region, which has higher fertility and domestic violence rates than other regions of the country. The National Demographic Health Survey of 2008 confirmed an IPV rate of 31% for the north central region, in

which Abuja is located. The need for intervention in IPV screening, mitigation, and protection of victims is a major public health challenge in Nigeria. In this dissertation, therefore, I present a quantitative study approach to examine and analyze data from women in prenatal attendance at selected hospitals in Abuja, Nigeria, on their experiences of IPV and its effects on limiting basic reproductive healthcare seeking.

Chapter 2 is a literature review of previous scholarly works on IPV and their role on pregnancy outcomes globally, with special attention to African countries, and Nigerian settings in particular. I examine the cultural perception of IPV tolerance as well as the healthcare-seeking behavior of women who are exposed.

Chapter 2: Literature Review

In this chapter, I review existing literature on IPV during pregnancy and its possible association with prenatal clinic commencement time and overall attendance among exposed women in Abuja, Nigeria. I examine IPV in Nigeria and attitudes influencing its acceptance and disclosure in the culture. In addition, I examine IPV association with preventive medical services such as routine checkups, knowledge or use of contraceptives, and other reproductive healthcare service use like prenatal care attendance. Also reviewed are selected maternal characteristics found to have a significant association with the incidence of IPV during pregnancy such as age, parity, marital status, education, and wealth quintile (Devries et al., 2010; Dietz et al., 1997; Gass, Stein, Williams, & Seedat, 2010; McCloskey et al., 2007; NPC, 2008, 2013; Obi & Ozumba, 2007; Shamu, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2011; Umoh, Abah, Ugege, & Inyangetoh, 2012). IPV is defined as a self-reported experience of one or more episodes of physical, emotional, and/or sexual violence by current or former partner since age 15 (WHO, 2013). It also includes nonphysical behaviors that restrict women's freedom such as intimidation, deprivation, and isolation (McCloskey et al., 2007). IPV results in physical injuries, sexual coercion and assault, intimidation, and control of daily activities, all of which may negatively affect victims' autonomy in seeking preventive health care services like initiating prenatal care and other assistance within the community (Dietz et al., 1997; McCloskey et al., 2007; WHO, 2013). In 2010 alone, researchers recorded IPV-related rape, stalking, or physical abuse among 35.6% of study

participants in a National Intimate Partner and Sexual Violence Survey done in the United States (Black et al., 2011).

A review of Sub-Saharan African and Asian studies showed the IPV rate at 28% in Madagascar, 74% in Ethiopia, 57% in India, and 87% in Jordan (Uthman et al., 2009). Nigeria is among the countries in Sub-Saharan Africa with both a high fertility rate of 5.7 births per woman and an IPV rate of 46% (NPC, 2008). Nigeria has been a state party to the United Nations Convention on the Elimination of All Forms of Discrimination Against Women since 1985, yet the domestication and provision of the United Nations Convention on the Elimination of All Forms of Discrimination Against Women in Nigerian society has been a mere paper status quo issue. Within the country are piecemeal activist actions from different civil societies working towards actualization of form of women rights in the near future (Linos et al., 2013; Makama, 2013). Meanwhile, pregnant women and their unborn children are left to face the adverse effects of IPV in homes and communities all over the country. Studies done in several regions of Nigeria revealed staggering high pregnancy-related IPV rates. Results revealed a 13.6% rate in the southeastern region (Umeora, Dimejesi, Ejikeme, & Egwuatu, 2008), 28.3% in the southern region (Olagbuji et al., 2010), 28% in the northwestern region (Ameh & Abdul, 2004), 31.8% in the north central region (Envuladu et al., 2012), and 43% in Abuja, the nation's capital and the location of the current study (Arulogun & Jidda, 2011).

Sociocultural, religious, and demograhic differences in Nigeria have accounted for variations seen in IPV prevalence, perceptions, risk factors, and health consequences noted within the regions (Onyediran & Isiugo-Abanihe, 2005). Although the economic

burden of pregnancy-related IPV is not well documented and known in Nigeria, the United States has estimated direct and indirect costs of IPV to exceed \$5.8 billion annually (Gerberding et al., 2003). Pregnancy-related IPV was implicated for high perinatal and neonatal mortality risk among exposed participants (*AOR* 2.59 95%; *CI* 1.35-4.95) compared to unexposed participants (*AOR* 2.37 95%; *CI* 1.21-4.62; Ahmed et al., 2006). IPV is also noted to be a major cause of maternal mortality in the United States and the United Kingdom (Lewis, 2007). Subsequently, in different settings, IPV has been associated with delays in prenatal care initiation (Devries et al., 2010; Dietz et al., 1997; Koski et al., 2011; McFarlane, Parker, Soeken, & Bullock, 1992; Parker, McFarlane, & Soeken, 1994; Rahman et al., 2012; Taggart & Mattson, 1996). In other studies, regarding preventive care use among exposed women, IPV has been shown to be a factor in healthcare-seeking patterns such as routine checkups and tests, contraceptive use, and visits to a medical doctor or taking precautions in preventing HIV/AIDs or other sexually transmitted diseases (Gass et al., 2010; Lemon, Verhoek-Oftedahl, & Donnelly, 2002). IPV during pregnancy, according to experts, appears to be more common than most obstetric conditions as preeclampsia, placenta praevia, gestational diabetes, or twin pregnancy (Devries et al., 2010; Khan et al., 2006).

Routinely, prenatal care consists of an initial visit in early pregnancy, and subsequent monthly attendance, followed by visits every 2 weeks after 30 weeks, and a final weekly visit for the last 6 weeks of pregnancy. However, four focused visits are recommended by WHO and consist of a first visit between the 6th and 12th week of gestation, a second visit between 24 and 26 weeks, a third at 32 weeks, and a fourth

between 36 and 38 weeks (WHO, 2002). Currently, the median duration of pregnancy at the first ANC visit in Nigeria is 5 months (NPC, 2008, 2013). Early and subsequent prenatal care visits promote good health through the life cycle, as they increase the chances of early screening and possible detection of medical issues, early medication regime, and preventive healthcare services. Lack of literature on these issues suggests research in these areas is understudied. The purpose of this study is to examine the association of IPV during pregnancy with reproductive healthcare use such as prenatal care attendance and maternal healthcare-seeking behaviors in Abuja, Nigeria.

Literature Search Strategy

My literature search followed the keyword search strategy; I used online databases like Google Scholar, CINHALL, PubMed Central, and ProQuest. Journals and online libraries from WHO, CDC, Academic Search Premier, PsychoINFO, EBSCO Host, and Nigerian Government Agencies were reviewed. Keyword searches were made through online full text articles related to *IPV, domestic violence, women abuse, IPV acceptance and disclosure, delay in prenatal entry, ANC utilization adequacy index, women health, IPV and African population, and domestic violence and Nigeria, Abuja*. The publication time frame selected initially was from year 2009 through 2014, but most of the articles were abstracts, which were not sufficient to cover the whole research. Therefore, the publication time period was increased to a 10-year period. The majority of the primary articles reviewed relating to IPV helped in gaining a detailed insight of IPV's prevalence, characteristics, and risk factors, but lacked data on IPV and prenatal care entry or healthcare-seeking behavior, so the scope of search was extended back to 1992,

in which a few articles on research conducted in the United States were retrieved and reviewed. Hence, the justification of the current study was evidenced by this lack of literature relating IPV to prenatal care attendance, routine regime compliance, and health-seeking behavior among exposed women in Nigeria.

Theoretical Foundation

The theoretical foundation of the current research was based on the social learning theory given by Bandura (1977). He found that behavior is a learned process from the environment in which an individual lives, and this learned process goes through the process of observational learning. The models could be parents, siblings, cartoon characters on television, friends, peer groups, or teachers at school. These models provide the child with various behaviors and attitudes to observe and emulate. It is at the sole discretion of the child to pay attention to some of the models and start encoding them in his or her own behaviors. This may happen immediately or at a later stage in life. This behavior may be acted out regardless of the consequences or whether the behavior is appropriate to imitate. There are many processes that increase the child's likelihood of reproducing the behaviors most appropriate for his or her gender while living in the society (Murrell, Christoff, & Henning, 2007).

In the social learning theory, behavior is a learned process from the environment in which an individual lives, and this learned process goes through the process of observational learning (Bandura, 1977; Schiavo, 2007). It is also a belief that human beings act like active processors of information. Observational learning in social learning theory is not possible, posit Bandura and Schiavo, unless the cognitive behavior is at

work, and the individuals observed are referred to as models in one's life. This theory of modeling was hypothesized and tested for its correlation to IPV later in real life applications by Murrell et al. (2007). They investigated the relationship between childhood exposure to domestic violence and the characteristics of violence exhibited later in adult life by evaluating 1,099 inmates serving jail terms in a correctional facility for domestic violence offenders (Murrell et al., 2007).

Results from the study showed that participants who witnessed domestic violence as children committed the most frequent domestic violence; whereas, those who were victims of abuse as children were more likely to commit more general violence and to abuse children as well (Murrell et al., 2007). This study supported the modeling theory of Bandura (1977), but as a retrospective self-report study, there is the possibility of recall bias as the adult males may not remember vividly the level of such early exposures. There is also the possibility of over-reporting childhood violence exposure as participants may find it easier to blame family background or environments for their unacceptable violent acts (Creswell, 2009). Murrell's et al. study could not be generalized, as the sampling frame showed uneven racial mix (59% White, 29.5% Hispanic, and 9.5% Black males), with no comparison groups (Murrell et al., 2007).

Another important aspect in Bandura's (1977) behavioral learning is the level of family or community influence therein. Family or community social norm influence can actually constrain individual behaviors based on the acceptance, enforcement, or implied consequences of not complying with accepted norms within the unit (Linos et al., 2013). If the child is imitating a rewarding model, then it is more likely for him to continue;

however, where the modeled behavior is not acceptable, and leads to punishment, the child will be forced to give up such behaviors (Bandura, Ross, & Ross, 1961).

Although Bandura's et al. (1961) social learning theory did not explain why some children never grew up to be IPV perpetrators despite childhood exposures, it still remains the most widely used theory in underpinning domestic violence because of the correlation between experiencing and witnessing violence as a child and later life violence.

Conceptual Framework

The conceptual framework in this study explains the main concepts, factors, and variables to be used in the research, and the relationships among them (Miles, Miles, & Huberman, 1994) and shows my perceived ideas and beliefs in the phenomena studied, based on the culture in which I grew up in Nigeria. Theory in the study begins with the theoretical concepts discussed in the previous section, which directly or indirectly link to the vulnerability of Nigerian women involved in intimate relation violence during pregnancy. The concept begins with the Bandura's (1977) theory of social learning and the conceptual framework that shows the interconnectivity between the application of the theory and how it is considered in this research. In a traditional Sub-Saharan African society, subordination of women is not just due to financial dependency on partners; rather, it comes from a deep-rooted patriarchal system that reduces womanhood to second-class citizenship (Makama, 2013). Women are regarded symbolically as their spouse's property, resulting from the exchange of the bride price (Makama, 2013). The cultural justification of physical violence by her partner further confirms Bandura's social

learning theory (Linos et al., 2013). At the societal and community level, gender inequality, domestic violence norms and values, as well as intergenerational or childhood exposure to domestic violence lead to household or individual factors of women's subordination and lack of autonomy in issues concerning one's life, including healthcare access. These in turn lead to experiences of IPV, especially during pregnancy, which further predispose women to negative health risk behaviors such as late entry and inadequate prenatal care services, as well as not having enough interest or accepting hindrances in seeking other reproductive healthcare services pertaining to women's health (see Figure 1).

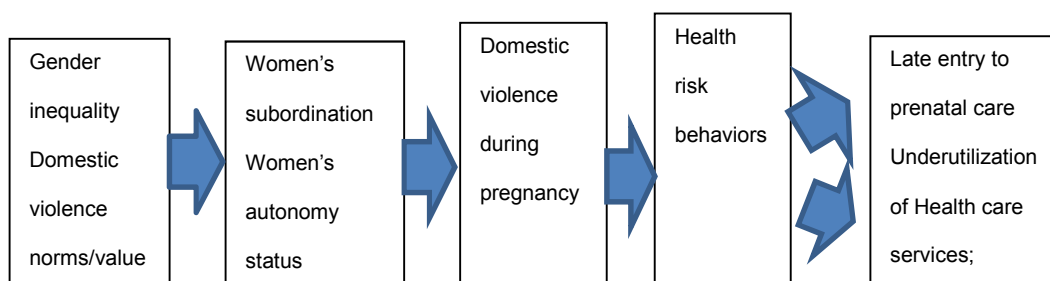


Figure 1. Conceptual framework of IPV during pregnancy and prenatal care attendance and health seeking behaviors.

A woman's subordination to her partner, shown by not acting out or disclosing recurrent abuse, can be due to fear of reprisal and shame. In most situations peculiar to resource-limited settings as in Nigeria, poverty and the need to stay and raise one's children has been implicated as an influence in enduring abuse (Sikweyiya & Jewkes, 2011). In several IPV environments, women were found to seek prenatal services only

when certain obstetrical emergencies have set in, which increases the likelihood of maternal or infant morbidity and mortality in Nigeria.

Society

Nigerian society is patriarchal in nature, where men are regarded as gods of the household, controlling every affair, including the woman's right to reproductive capabilities. The exchange of bride price in a marriage ceremony symbolizes the exchange of ownership and control of the bride from the father to the new spouse (Linos, 2013). A patriarchal society sees a woman as a man's property, and as such, he can engage her as he deems fit. These rights include the right to beat her for any perceived wrong doing or insubordination (Makama, 2013). Despite the increased awareness of democracy, Nigerian society is still masked with gender-insensitive laws and policies passed down from the military regime 3 decades ago, delaying women's rights policies its adequate priority (Eze-Anaba, 2006). IPV among Nigerian women cuts across political, educational, and economical underpinning, and as a result, about 97.2% of cases go unreported due to inadequate laws that regard IPV as a "family affair" or often trivialize it (Adebayo & Kolawole, 2013; Linos, et al., 2013; Makama, 2013). Rape is stigmatized to the point that a victim never wants it to be public knowledge; marital rape is not regarded as an offense. In the 1998 New York United Nations session, Nigerian's former minister for Women and Social Development, Mrs. Hajo Sani, lamented on the state of domestic violence in Nigeria, as quoted by Makama (2013):

There is no record of the prevalence of violence against women especially within the home. This is because women hardly report violence to the police for fear of

retaliation and more violence from the husband and wider family. In addition, the law enforcement agents do not readily entertain complaints of domestic violence. They treat such complaints as a minor offence of “two people fighting” or laugh it off as “husband and wife problem”... (p. 125)

Attitudes Influencing IPV Acceptance and Disclosure in Nigeria

Like in most Sub-Saharan African countries, violence against women's rights in Nigeria is easily played off under sociocultural practices or religious tenets (Uthman et al., 2009). The deep-rooted sociocultural attitude towards IPV is a known major predictor of IPV against women and a barrier for its mitigation in the society (Garcia-Moreno et al., 2004; Garcia-Moreno et al., 2006). With over 168.8 million people and about 374 ethnic groups, Nigeria is often referred as the most populous country in Africa (NPC, 2013). The country is made up of 36 states and Abuja, the administrative capital. Each state, including Abuja, enforces its legal codes with diverse religious practices. Sharia law is practiced and enforced in the northern region, which is predominantly Muslim, while civil and customary law is enforced in the southern, western, and eastern regions, where most indigenes and dwellers are Christians (Linos, 2013).

With such diversity in sociodemographics, perceptions, and attitudes, IPV against women is most likely to vary from state to state, and inevitably effects IPV disclosure and prevalence rate. The attitude of women towards IPV against women in Nigeria was investigated by Antai and Antai (2008). They presumed that if abused women perceive IPV as a natural part of the marriage experience, where it is normal for a man to demonstrate male supremacy, then disclosure of IPV to healthcare personnel and law

enforcement agents will be underreported and will affect the prevalence rate and program interventions in the community. They used data from 7,620 participants in the nation's health survey conducted between March and August 2003. Respondents were all women, aged 15 to 49, with almost half of the participants from rural areas (Antai & Antai, 2008).

The questionnaires were standardized and structured with questions in numbered scenarios for the respondents to indicate if they would justify partner abuse in each or all scenarios. Result of analysis indicated that 42% of the rural women justified IPV with at least one of the reasons mentioned in the questionnaires. Results showed that the majority of rural women who justified partner abuse belonged to the Hausa/Fulani/Kanuri ethnic group who were currently married, Muslims, without education, and resided in the northeastern region of the country. On the other hand, participants in the southwestern region were found to have a lower rate of justifying IPV (Antai & Antai, 2008).

Their study is significant and relates to the current research because it highlights the effects of socio-demographic influence on IPV disclosure and prevalence, as well as helps in implementing programs that will have social change within the community for IPV prevention. Uthman et al. (2009) used data from a national health survey of 17 Sub-Saharan African countries to assess socio-demographic attitudes of people towards IPV against Women (IPVAW). The researchers based their study on the presumption that if IPVAW is so widely accepted among Sub-Saharan African countries, domestic violence will persist and it will be difficult to create a socially effective environment in controlling IPVAW. Participants were men and women, ages 15-49 for women and 15-59 for men, based on multi-stage cluster sampling using strata. Countries with available data on

IPVAW were selected for the study, and the respondents were asked questions to elicit the degree of acceptance of IPVAW by answering yes or no in certain circumstances they felt justified of physical violence.

Uthman's et al. (2009) result provided evidence that IPVAW was widely accepted among most Sub-Saharan Africans as punitive for doing things beyond the socially accepted norms such as burning the food or going out without notifying the husband. Results also showed that women were more likely to justify abuse with rate as high as 74% in Ethiopia.

A study conducted by Antai and Antai (2009) and Uthman et al. (2009) highlighted the existence and the degree of IPV acceptance based on socio-demographic factors by using a cross-sectional quantitative survey from 17 different demographic health surveys from several countries. Their results also indicated that an environment of such high social tolerance of IPVAW would need a high level of public awareness campaigns to lower society's tolerance to IPVAW. Uthman et al. covered more diverse socio-demographics areas than Antai and Antai, which represents a good benchmark for each study region. It also elicits responses from both men and women compared to Antai and Antai, who surveyed only women. However, as a cross-sectional study, the result is limited in assessing causal relationships (Creswell, 2009). However, Creswell found that being national survey data with a large sample size, their result is generalizable across the 17 nations studied. Both reviews are very significant to the current study because of the similarity in design as a cross-sectional survey with demographic population characteristics similar to the current study.

IPV Among Pregnant Women in Nigeria

National Prevalence

Unlike concern for the general female population, IPV during pregnancy is of great public health concern due to its implication for safe motherhood and child health (Olagbuji et al., 2010; WHO, 2002). According to Olagbuji et al., pregnancy is a well-known risk factor for domestic violence, as the prevalence and patterns tend to start or intensify during pregnancy and the perinatal period (Diaz-Olavarrieta et al., 2007; Garcia-Moreno et al., 2005). It has also been reported that history of past abuse is a strong predictor of IPV in the index pregnancy. The global prevalence and pattern of IPV during pregnancy varies and a systematic review showed that African countries bear the greatest burden and rate ranging from 2.3% to 57.1% (Shamu et al., 2011).

At the national level, IPV prevalence in Nigeria was reviewed using the NDHS (2008), a national representative sample by NPC to gather background characteristics, including module questions on domestic violence (NPC[NDHS], 2008). Survey results showed a 30% lifetime prevalence of physical violence since age 15, and 16% a year preceding the survey among never-married respondents. Sexual violence prevalence was also noted to be 7% and 9% among ages 30 to 49, and ages 20 to 24, respectively. The results also showed that women who were employed but not paid in cash had an IPV rate of 38.4%, while the IPV rate among divorced, separated, or widowed women was 44.0%.

Demographic location was also a factor in the survey results. Being in an urban area and belonging to the higher wealth quintile negatively influenced the domestic violence prevalence rate (30.2% and 33.7%, respectively) (NPC, [NDHS]2008). Results

indicated that having little or no education and living in the rural area as well as being poor seemed to have a protective effect on domestic violence (14.9%, 26.3%, and 18.8%, respectively) (NPC [NDHS]2008; 2013). Another important finding of the survey was 45% of the violence committed was from a current partner or husband as compared to 7% that was from an ex-partner or ex-husband (NPC,[NDHS] 2008). Data results also showed that 45% of women exposed to physical or sexual violence never seek help or bother to disclose the incident to anyone for fear of reprisals or shame. The NPC survey results are very significant to the current study because it is a national representative sample that is generalizable across the country and can be useful in policy formation toward IPV elimination. However, as a cross-sectional study, it is quite difficult to ascertain causality in Nigerian context, as culture or personal experience could have influenced participants' responses on the justification of IPV.

Clinical Prevalence

Clinical studies in Nigeria have highlighted prevalence, pattern, determinants, and consequences of IPV during pregnancy with 13.6% rate in the southeastern region and 43% in the north, especially in Abuja, the site of current study (Umeora et al., 2008; Arulogun & Jidda, 2011). Umeora et al. analyzed cross-sectional questionnaire data to assess factors precipitating IPV during pregnancy among 500 pregnant women attending a prenatal clinic in the eastern part of Nigeria. Their participants were randomly selected, and the survey questionnaires were carefully administered by trained research assistants. For optimum understanding and response, the questions were framed in local dialects.

Umeora's et al. (2008) analysis showed a 13.6% prevalence of IPV in the index pregnancy among the group. Among the exposed women, verbal abuse in the form of insults and humiliations was most common, with a rate of 48.5%, followed by marital rape that was 26.5%. Patterns of violence found in this study were 76% recurrent by the perpetrator, followed by issues surrounding the "other women" especially in polygamous homes. Their study also revealed education and socioeconomic status to be a risk factor, as 22% of women with no formal education suffered the most violence and the intensity of the violence lessened as the woman's educational and economic status improved. Results also highlighted the socio-cultural influence on IPV disclosure as 83% of surveyed participants believe IPV should not be reported. This finding supports the previous study of IPV disclosure, which is strongly influenced by culture and ethnicity (Antai & Antai, 2008).

The significance of Umeora's et al. (2008) study is its confirmation of IPV among pregnant women in the southeastern region of Nigeria. It strongly points out the policy implication for women's empowerment, and their need to lessen economic dependence on abusive partners. As a cross-sectional questionnaire survey, no causal relationship could be drawn, and there is the likelihood of under-reporting of IPV as the study excluded exposed women who never attend a facility-care for prenatal assistance.

In a comparative study, Olagbuji et al. (2010) analyzed data from women visiting the clinic for their six-week postpartum care in an urban tertiary referral center of the southern region of Nigeria. The objective of the study was to examine association of IPV before pregnancy; its pattern during pregnancy; and its pattern during the postnatal

period. A total of 502 women visiting for postpartum care were recruited between December, 2008 and April, 2009. It was a cross-sectional semi-structured study that used participants' female medical doctors only, who are fluent in the local dialect to administer the questionnaires.

Data analysis showed that 28.3% of the respondents reported experiencing IPV in the index pregnancy, and the other 48.8% stated exposure before, during, and in the postpartum period. Significantly, 66.9% of pre-pregnancy exposed participants also experienced IPV during their index pregnancy as well as in the puerperium (Olagbuji et al., 2010). This result confirmed the findings of previous study that history of previous abuse is a strong predictor of abuse in the index pregnancy (Shamu et al., 2011).

Olagbuji's et al. result showed a classical abuse pattern as 15.5% of abuse was reported during the first trimester; 16.3% in the second, and 17.1% during the third trimester.

Another significant finding that was comparable with other Nigerian studies was the rate of verbal abuse and humiliating remarks, which signifies a society engulfed in widespread gender inequality (Antai & Antai., 2008; Linos, 2013; Makama, 2013; Eze-Anaba, 2006). However, reliance on self-reported recalls of past abuse by the participants gives the study some degree of limitation and cannot be generalized (Creswell, 2009).

In a multi-ethnic group study, Envuladu et al. (2012) examined pregnant women, made up of predominantly Hausa (11.8%), followed by Igbo (10.4%) and Beron (8.9%), attending an antenatal clinic in the north central part of Nigeria to assess IPV prevalence, abuse patterns, and risk factors. Their sample size was 201 pregnant women, ages 19 to

41 years. The results showed an IPV rate of 31.8% in the index pregnancy, while 28.9% of the respondents acknowledged IPV with previous pregnancies. Results also noted that forced sexual violence by partner ranked the highest among exposed women (60.9%), followed by physical violence (20.3%), and threats (18.8%). Contrary to other regions, the main predictor variable in this study was women and spouses with multiple sex partners. The study results indicated that being legally married and the only wife was a protection from IPV among the study participants (*OR* 6.7 and *OR* 4.9, respectively).

In general, regional studies in Nigeria have shown similarities in IPV prevalence, pattern, and characteristics. However, in Abuja studies, overall prevalence tends to be higher and calls for a greater public health concern, as it is the administrative capital of Nigeria. Arulogun and Jidda (2011) evaluated IPV experiences, help-seeking patterns, and coping strategies of 300 pregnant women attending antenatal care in six different hospitals in Abuja. It was a cross-sectional design with a three-stage sampling technique in selecting study location and participants. Using a semi-structured questionnaire, data analysis indicated a 43% IPV prevalence with psychological violence being the most common (38%), followed by physical violence (36.4%) with a recurrence rate of 44.7%, and sexual violence (13.2%). Their analysis indicated that among the exposed women who were physically abused, being kicked in the stomach ranked the most common, with 38.9%, followed by kicks to the legs, 38.3%, and other body parts 22.2%. With all forms of violence reported, partners' alcohol consumption and occupation tend to be the major predisposing factors [95%, $p < 0.05$], unlike Envuladu et al. (2012) results, whose study

ranked was women and spouses with multiple sex partners as the major predisposing factor.

The major coping strategy reported in Arulogun and Jidda's (2011) group was dialoguing with partner (46.5%), followed by forgetting about the incident (30.2%), or making up with sex (16.7%). Surprisingly, none of the victims ever reported their experiences to the police or law enforcement for litigation; rather, they sought to dialogue it out, signifying the Nigerian societal attitude towards IPV as husband and wife problem, leaving the woman with the options of dialoguing or making up with sex as the only means to keep her home (Makama, 2013). This study is very significant to the current study in that it confirmed high IPV prevalence in Abuja, confirmed by an earlier study done by Efetie & Salami (2007).

Although Efetie and Salami's (2007) report was an abstracted result, they stated an IPV rate of 37.4% among pregnant women attending a prenatal care clinic in a national hospital in Abuja. Psychological violence ranked as high as 66.4% in the study, followed by physical violence (23.4%), and sexual violence (10.2%). The study also noted that 21.2% of the victims were medically treated for their injuries. The strength of Arulogun and Jidda's (2011) study was in their wider scope of selecting the study population and location, as they picked six hospitals in three local government areas of the municipal council, unlike previous studies in other regions that focused on one site (Umeora et al., 2008; Olagbuji et al., 2010; Envuladu et al., 2012).

Women's Reproductive Health and Intimate Partner Interference

The state of the reproductive health of women in a society is a predictor of the maternal mortality status of the population. Their wellbeing encompasses access to general health services, family planning, care received during pregnancy, delivery, and care following delivery. Challenges in obtaining these services include lack of autonomy and the need to obtain permission from partner or husband, especially in an abusive relationship (NPC, 2013; McCloskey et al., 2007). In a cross-sectional study, McCloskey et al. examined outpatient females across various hospital departments in several metropolitan hospitals in Boston, Massachusetts. Their study objective was to determine if abused women report healthcare interference by their partner. They sampled 2,027 women with ages ranging from 18 to 80. Respondents were asked about partner interference in the past year.

Interference with health care-seeking was found among the study group that disclosed most recent, past year, and life-time exposure to IPV (14%, 54.4%, and 75%) respectively. Partner interference with health care was also found to occur more frequently with women who had their partners at the time of filling the survey [OR 1.9, 95% CI 1.2-3.3]. Interference was found to be even higher if the respondent was pregnant, compared to non-pregnant respondents (20.7% and 11.5%, respectively). When some maternal characteristics were assessed, women with partner interference were reported to be more likely to have lower income (less than \$20,000 per annum), and to have had less than high school education. The overall report showed that the odds of

having poor health are raised by partner interference with health care [OR 1.8, 95% CI 1.0-3.2] among exposed women.

The McCloskey et al. (2007) study is very important to the current study for being the first to examine the impact of IPV on women's health-seeking behavior and poor health even before pregnancy. Their study result also confirmed marital control and interference reported by other researchers in education and employment (Meisel et al., 2003). However, as a cross-sectional study design, it lacked temporal relationship between poor health and IPV. Also being offered in the waiting rooms of emergency departments and outpatient clinics, it lacked privacy of thoughts and opinion, especially among those with their partner present during such visits. There is the likelihood of low response rate due to the poor setting. The study done by McCloskey et al. is very relevant to the current research, as it highlights the possibility of partner's influence on women's health-seeking behavior, including prenatal care seeking.

IPV and Prenatal Care Attendance

The ANC model in Nigeria is a focused antenatal care that has an integrated maternal, newborn, and child health strategy that reinforces a continuum of care through a health policy roadmap (FMOH, 2007). Their recommendation involves an initial visit within the first 16 weeks of gestation, followed by second visit between 24 and 28 weeks, a third one at 32 weeks, and the fourth at 36 weeks(FMOH, 2007). However, according to the (NPC[NDHS] 2013), only 18% of pregnant women in Nigeria were able to make the first ANC visit in the first trimester; rather, about 51% initiated their first ANC visit during the second trimester.

The median number of months of pregnancy at the first ANC visit is five months in Nigeria, with 36% of women not receiving any form of ANC (NPC, 2008; 2013). Delay or postponement of ANC is known to be a contributory factor for adverse pregnancy outcomes such as low birth weight, pre-eclampsia, and stillbirth (Taggart & Mattson, 1996; McFarlane et al., 1992). IPV during pregnancy is strongly implicated with delay or low use of maternal health services (McFarlane et al., 1992; Taggart & Mattson, 1996; Dietz et al., 1997; McCloskey et al., 2007; Koski et al., 2011; Rahman et al., 2012). This area is grossly understudied in Abuja. The purpose of my study, therefore, was to examine the association of IPV during pregnancy with delay in prenatal attendance, and health seeking behavior of exposed women living in Abuja.

McFarlane et al. (1992) used 691 pregnant women attending public prenatal clinics in Baltimore, Maryland and Houston, Texas to assess frequency and severity of abuse and its associated entry into antenatal care. It was a stratified prospective cohort study. Participants (White, Black, and Hispanic) were followed up from their first prenatal visit until delivery. Their study design measured frequency and severity as well as homicidal ideations during their first, second, and third trimester routine screening. All information gathered was self-reported, and languages of choice were English and Spanish. The majority of the women's ages ranged from 20 to 29 years. However, 31% of the entire study participants were teens, ages 13 to 19 years old.

Data results from McFarlane's et al. (1992) study reported 17% abuse prevalence among the participants, and the exposed women were twice as likely to initiate antenatal care in the third trimester than the non-exposed (21% and 11%, respectively). Sixty

percent of the abused women reported two or more occurrences of abuse during the study period, regardless of ethnic group. This study is very important to the current research because it buttressed the influence of IPV on prenatal attendance, and also confirmed the cross-cultural nature of IPV among women. The strength of the study lies in the design of the questionnaire administered by participants' primary care physician, with whom participants felt safe and comfortable.

As a prospective study, McFarlane's et al. (1992) study yielded more reliable and accurate results as abuse incidents were reported as they occurred throughout the duration of the prenatal period. Women who did not report abuse initially later reported abuse. The study also revealed the power and controlling behavior of the perpetrators to influence women's prenatal entry to ANC. However, the information, being self-reported with their familiar clinicians, presented the possibility of over-reporting of incidences of abuse. On the other hand, fear of reprisal presented the possibility of under-reporting. This study is important and relevant to my study because the researchers were able to elicit significant information on the influence of IPV on prenatal care-seeking among abused women within the group studied.

In a similar study, Taggart and Mattson (1996) investigated pregnant women who presented for care at the Women, Infants, and Children (WIC) program in California state public health clinics. Their objective was to evaluate incidences of violence during pregnancy and its association with delay in seeking prenatal care among the three main ethnic groups (Black, Hispanic, and White) in the state. They utilized a convenience sample of a cross-section of 502 WIC women with seventh-grade literacy level as an

inclusion criterion. Their median age was 23.9 years old, and the instruments used were validated. They used McFarlane's original questionnaires modified by pilot study questions.

Taggart and Mattson's (1996) study results indicated a 43.8% rate of IPV prevalence among the women studied, with 26.1% of them disclosing abuse 12 months prior, and another 20% complained of IPV with the index pregnancy. Data results also reported that 13.7% of abused women stated that their delay to prenatal initiation was because of physical injuries, and the mean duration of pregnancy at their first prenatal care initiation was found to be 25.8 weeks among the exposed. The study also found that the Hispanic women were the group with the most delay into prenatal care (41.4%), followed by the White Americans (32.3%), and the Black Americans (26.3%). The study is very significant in revealing specifically, the impact of IPV; however, being a convenience sample, it is not representative of the general population. Hence its result is not generalizable (Creswell, 2009).

The studies done by McFarlane (1992) and Taggart and Mattson (1996) strongly implicated IPV with late prenatal care initiation as well as some adverse pregnancy outcomes for both the mother and infant. Their studies showed a high response rate because they utilized responders' primary clinicians in eliciting pertinent information as domestic issues. Both study results showed similarities in prenatal care delay among three main ethnic groups studied (Whites, Hispanics, and Blacks), and affirmed the global nature of IPV among pregnant women cutting across ethnicity, socio-economic, educational, or cultural background (WHO, 2005).

In a population-based study, Dietz et al. (1997) used the Pregnancy Risk Assessment Monitoring System (PRAMS) to survey 27,836 women who delivered live infants between 1993 and 1994. Their objective was to assess prenatal care delay from past abuse 12 months prior to delivery. Mothers were investigated two to six months after delivery. The study defined early entry as the ability of pregnant women to initiate prenatal care within the first trimester, whereas, delayed entry was defined as initiation of prenatal care during second and third trimester.

Dietz's et al. (1997) data results showed that women exposed to IPV 12 months prior to delivery were 1.8 times more likely to initiate prenatal care at a later stage – during second and third trimester [95% CI 1.5, 2.1] – compared to those who were not abused. Results also showed that 0.8% of study women did not receive prenatal care. They also showed that women who delayed their ANC care were more likely to have been abused compared to non-abused women (8.1% and 4.0%, respectively). Some other maternal characteristics, such as being young, having less education, low income, and being unmarried, were also associated with delayed care entry.

A stratified result further showed that women 35 years and older experienced the highest risk of IPV with a ratio of 4.7, 95% CI 1.8, 12.1 (Dietz et al., 1997). Being educated and belonging to the middle class or living in crowded housing also had significant associations. The strength of this study was based on using large population-based data to examine violence and prenatal care initiation as well as assessing some maternal characteristics. With a large sample size, it was possible to assess effect modifiers and confounders, and make the results generalizable within the population.

However, the study is limited for not being able to assess temporal sequences between prenatal initiation and the physical violence. Dietz's et al. result did not differ from Taggart and Mattson's (1996) study, which found younger, divorced, and single women to be at a higher risk of abuse and late entry to prenatal care initiation.

Koski et al. (2011) used the Indian National Family Health Survey (NFHS), a population-based sample, to assess the impact of physical IPV on prenatal care seeking. Their final sample size was 2,877 women who were 15 to 39 years old at the time of the original survey in 1998/1999. Inclusion criteria required a participant to be a household resident and have had at least one live birth since the 1998/1999 national family survey and the 2002/2003 follow-up survey. The study also captured premarital pregnancy planning, pregnancy status and outcomes, and the child immunization information.

In their design, Koski et al. (2011) used receipt of ANC and number of visits, receipt of professional home visits, and the trimester in which ANC care was initiated to elicit associations. They used logistic regression analysis on the binary outcome variables and multinomial regression on the categorical outcome variables. Data results showed that women with the most recent history of pregnancy-related violence were less likely to have received any form of prenatal care visit [OR 0.80, 95% CI 0.68, 0.95]. Exposed women were also less likely to have received home visits for prenatal checkups by a trained professional [OR 0.45, 95% CI 0.33-0.56], and less likely to have received three or more prenatal clinic visits [OR = 0.66, 95% CI 0.52-0.84]. Results also showed that women who experienced one or more violent incidents during their most recent

pregnancy were more likely to initiate prenatal care at the third trimester [RR 1.62, 95% CI 1.08-2.45].

The result of the Koski et al. (2011) study is very important to my research because of the similarity in population characteristics between India and Nigeria. India and Nigeria are both developing countries with similar cultural views on IPV acceptance and disclosure (NPC, 2013). Their study indicated a strong association between IPV during pregnancy and restricted maternal health-seeking behavior in that a single exposure of IPV during the most recent pregnancy resulted in a 20% risk of not attending prenatal visits, and 60% risk of not receiving home prenatal visits by trained professionals.

The study limitations as a cross-sectional survey included its inability to assess a temporal sequence between occurrence of violence and initiation of prenatal care. Secondly, there is the possibility of under-reporting of IPV due to cultural influence on IPV acceptance and disclosure in the population studied (Koski et al., 2011).

In a similar study, Rahman et al. (2012) used data from the 2007 Bangladesh Demographic Health Survey (BDHS) to evaluate associations between IPV and use of prenatal and delivery assistance among Bangladesh women. Out of 11,178 eligible participants, 2,001 women were finally recruited for the survey, with ages ranging from 15 to 49 years. The original questionnaire was translated into the Bangla dialect, the national language, for optimum response. Their instrument measured and categorized prenatal visits in dichotomous variables as (1) having sufficient care if a woman attends four or more visits, (2) insufficient if she attends three or fewer visits, and (3) for no visit.

Delivery assistance was assessed by respondents' answers to the questions whether they obtained treatment or advice from a medically trained provider or non-medically trained provider. They also created several binary variables that assessed and measured type of IPV as physical, sexual, or both. Some socioeconomic and demographic variables were also measured.

They used descriptive statistics in analyzing socio-demographic variables, service use characteristics, and multiple regressions for all the covariates. Their significant level was set at $p < 0.05$ (Rahman et al., 2012). Their analysis result revealed that 48.2% of women disclosed exposure to physical IPV, 18.7% to sexual IPV, and 14.1% to both physical and sexual IPV. Multivariate analysis showed a strong association between IPV during pregnancy and low prenatal attendance [AOR = 0.69, 95% CI 0.49, 0.96]. Poor prenatal attendance was even lower with severe physical IPV exposure [AOR = 0.48, 95% CI 0.28, 0.80], as well as lower usage of trained medical professional for prenatal care services and delivery [AOR = 0.69, 95% CI 0.53, 0.89 and AOR = 0.54, 95% CI 0.37, 0.78, respectively].

Results also indicated that women with secondary or higher education were found to have received sufficient prenatal care and utilized trained medical professional assistance during delivery compared to women with primary or no education at all (Rahman et al., 2012). Sufficient prenatal care attendance and delivery assistance by trained professionals were found to be linked with maternal age. Younger women, aged 15 to 24 years, were less likely to attend sufficient prenatal care or seek professional help during delivery compared to older women. Among the study group, results showed that

women with more children were less likely to attend sufficient prenatal care visits or seek trained medical professional delivery. Exposure to media was also noted to be linked with healthcare use, as women who were exposed to mass media were more likely to attend sufficient prenatal care visits and seek professional assistance during labor.

As a cross-sectional population study, limitations include inability to assess temporal sequence of events among occurrences of IPV, prenatal care attendance, and assistance during delivery (Rahman et al., 2012). There is also strong possibility of under-reporting of IPV with an exclusion of emotional abuse in the survey questionnaire. However, because they used a large national population survey sample, their methodology in eliciting answers from the responders was found to be a source of accurate and valid data. Results of the Rahman et al. (2012) study are very important to my research, as it added a different dimension in measuring effects of IPV, and as it elicited answers on healthcare use and type during delivery. Instruments used in the Rahman et al. study are more detailed, compared to those of Koski et al. (2011).

In a recent population-based study, Rurangirwa, Mogren, and Ntaganira (2016) investigated IPV during pregnancy in association with sociodemographic and psychosocial factors and their relationship to ANC service use among 921 women within a 13-month post-partum period in Rwanda. The study was a cross-sectional design with a multistage random sampling technique. Associations were assessed using a bivariable and multivariable logic regression model. Data results indicated that there is no statistical significant association between physical, psychological, and sexual violence during pregnancy and ANC use (Rurangirwa et al. (2016). However, use of ANC services was

less common among women who reported controlling behavior (OR = 1.93; 95% CI 1.34-2.79). Results also showed that low socioeconomic status was a significant predictor of physical violence exposure during pregnancy (OR = 2.27; 95% CI 1.29-3.98). Poor social support, younger age, and urban living were also found to have significant association with violence during pregnancy among studied postpartum women in Rwanda.

This study is significantly interesting in the sense that it is the only study I reviewed with a result contrary to several others on IPV and its association with prenatal care attendance during pregnancy. Unlike studies by Dietz et al. (1997), Koski et al. (2011), McFarlane et al. (1992), McCloskey et al. (2007), Rahman et al. (2012), and Taggart and Mattson (1996) that showed significant association between IPV during pregnancy and prenatal care visit and commencement, the Rurangirwa et al. (2016) study did not reveal any statistical significant association. A noted limitation highlighted with this study was that data was collected from women retrospectively in postpartum; thus results may be affected by recall bias. The Rurangirwa et al. study was reported to be the first IPV study in Rwanda investigating all forms of IPV during pregnancy and ANC use. Under-reporting may not be ruled out; however, its strength stems from the fact that the study instrument used was internationally recognized and has been successful in similar settings.

IPV and Healthcare-Seeking Behaviors

Healthcare-seeking behavior of IPV victims in developing countries like Nigeria has been disproportionately unstudied, with available studies showing discordant results

on the overall healthcare use pattern. Despite this lack, IPV has been shown to have a unique barrier to healthcare access in several studies (Wilson et al., 2007). However, previous studies have shown that women who are exposed to IPV in general show an increased use of emergency medical services for injuries such as bruises, concussions, or broken bones (Rhodes et al., 2011), and to some degree, ambulatory healthcare services for other chronic injuries (Lemon et al., 2002). Gass et al. (2010) conducted a study in South Africa that examined the association between IPV and health-seeking behavior, health-risk behavior, and chronic physical illness. These researchers used a national representative sample of 1,229 women aged 18 years or older, married or in co-habiting relationships. For health-seeking behaviors, they measured the following outcomes: (a) participants' visits to a medical doctor or traditional healer, (b) taking precaution in sexual intercourse to prevent HIV/AIDS and STD, (c) recent or lifetime HIV tests, and (d) seeking stability in sexual relationships. For health-risk behaviors they measured smoking, alcohol consumption, and use of over-the-counter sedatives and analgesics. For chronic illness, they measured heart disease, digestive disorders, joint and back problems, asthma, STDs, and vaginal infections.

The Gass et al. (2010) study used the Taylor linearization method to calculate prevalence of healthcare outcomes and behavior, stratified by IPV exposure, and chi-square for the test of significance. For the covariates such as age, education, geographical location, cohabitation, income, race, and employment, they used the logistic regression method. Their results showed a 31% IPV prevalence among studied population, and IPV exposed women were 1.5 times more likely to have visited a medical doctor or traditional

healer. They were also more likely to seek sexual relationship stability, taking precautions to prevent HIV/AIDs, and more likely to seek for HIV/se tests, compared to non-abused women. IPV was significantly associated with chronic physical illnesses in this study.

Results also showed exposed women to be 1.9 times more likely to report current smoking habits, and 1.7 times more likely to report they ever smoked compared to non-exposed women. Abused women were also found to be 2.4 times more likely to regularly consume alcohol, and nearly twice as likely to have a history of alcohol consumption compared to unexposed women. IPV exposed women in the study were also found to be 2.4 times more likely to use non-medical sedatives and analgesics, 48 times more likely to be using cannabis in the previous 12 months prior to index pregnancy, and 3.8 times more likely to have experienced lifetime use compared to unexposed women in the study.

The study done by Gass et al. (2010) was significant to the present study, as it assessed and measured similar outcome variables, thus giving the present study ideas of suitable statistical instruments. However, as a cross-sectional survey, it did not allow the result to infer causal relationships between the outcome variables and IPV. It was also prone to possible underreporting of IPV due to the retrospective nature of the data. In an older but similar study in the U.S., Lemon et al. (2002) analyzed the Rhode Island 1999 Behavioral Risk Factor Surveillance System to examine the association between current emotional and physical IPV and preventive healthcare use, alcohol use, and smoking among studied women aged 18 to 54 years.

Lemon et al. (2002) used a binary “yes” or “no” variable to study participants who gave a history of being kicked, slapped, hit, choked, punched, or shaken to denote physical violence. For sexual violence exposure, they used a report of being forced to a sexual act, and for emotional violence exposure, they used a report of being frightened, or having a feeling of being controlled in her daily activities by a current partner, husband, or boyfriend. They also examined their outcome variable of preventive healthcare use by measuring yes or no answers to a current check-up with primary physician, pap smear screening done within 12 month period, and a clinical breast examination by a professional provider within the past 12 months. Alcohol consumption of three or more drinks at least one time a week, lifetime smoking of 100 cigarettes, or current smoker were used to measure health risk behaviors among the study group.

Univariate analysis was used to describe their study population, while IPV prevalence among the covariates was described using bivariate analysis, and logistic regression analysis was used to assess associations (Lemon et al., 2002). Their study analysis showed that women exposed to IPV were 2.3 times more likely to have received pap smear screening, twice more likely to smoke cigarettes, and 4.8 times more likely to be high-risk alcohol users. Lemon’s et al. study is very significant to the present study because it was an early study that examined IPV and healthcare use among abused women. Its statistical tool provides a sound knowledge of what was deemed fit for this present study. However, it has its limitations of not being able to assess causality as a cross-sectional quantitative study. Study results from both Gass et al. (2010) and Lemon et al. are very conclusive and significant in the increased healthcare use and high-risk

health behaviors found among IPV exposed women. However, among pregnant women who were equally exposed to IPV, the results vary among researchers such as Dietz et al. (1997), Koski et al. (2011), Rahman et al. (2012), and Taggart and Mattson (1996). In my study, in which I used pregnant women attending ANC in selected hospitals in Abuja, prenatal care adequacy and healthcare-seeking behavior were assessed by measuring prenatal visits and time of initiation as captured in the questionnaires and their health records, as well as visits to a doctor for health checks, and knowledge or use of contraceptives.

Several maternal characteristics were found to be significant in influencing both IPV occurrence and use of healthcare services during pregnancy (Dietz et al., 1997; Koski et al., 2011; Rahman et al., 2012). Based on the participants' independent association with exposure of IPV during pregnancy and their use of prenatal care services, the researcher considered and reviewed the following characteristics:

- Maternal age
- Maternal education
- Marital status
- Maternal decision-making autonomy
- Wealth index

Maternal Age

The mother's age during pregnancy and at delivery is a vital variable that linked IPV exposure and use of prenatal care services (Rahman et al., 2012). Age acts as a proxy in knowledge accumulation that enlightens a woman's decision-making ability in health

related issues (NPC, 2008). Across studies, there have been similar and consistent IPV exposure trends in age, as well as age-related trends in healthcare-seeking behaviors among studied women (Koski et al., 2011; McCloskey et al., 2007; NPC, 2008, 2013; Rahman et al., 2012). In a 19-country study of IPV exposure during pregnancy across age groups, prevalence rates tended to follow consistent increase among younger women age 15 to 35 years, and decline slightly beyond 35 years of age among studied women (Devries et al., 2010).

A significant relationship between experience of violence during pregnancy and age was also reported in a systematic review of African studies on IPV against pregnant women by Shamu et al. (2011). Results of their study revealed that being adolescent under 20 years of age is strongly associated with abuse ($p = 0.000$) compared with pregnant women over 20 years of age (Shamu et al., 2011). Similarly, in a clinical article that assessed pregnancy-related IPV trends among pregnant women in Nigeria, the age category affected the most were the younger women, 20 to 34 years [76.7%, $p = 0.34$], and then the prevalence rate tapered down to 23.3% among women 35 years and older (Olabuji et al., 2009). In a Poland IPV study, age-related significant correlation was also detected as 100% of women age 18 to 20 years were found to be affected most [$\chi^2 = 11.683$, $p = .008$] compared to 34.8% of women 30 years and older (Makara-Studzinska, Lewicka, Sulima, & Urbanska, 2013).

In a hospital study of pregnant women attending a prenatal care clinic in southeastern Nigeria, Onoh et al. (2013) reported an IPV prevalence of 52.2% among women less than 20 years of age, compared to 21.1% rate among pregnant women aged

35 to 39 years. Using a national population study of 21,468 women exposed to IPV in Nigeria, experiences of IPV increased up to 30% among women between 15 and 29 years of age and then declined down to about 25% from ages 30 to 49 (NPC, 2008). Among the same group, 50% of women younger than 20 years did not receive prenatal care, compared to 38% of their counterparts aged 35 to 49 years (NPC, 2008). A repeated national study with the same population five years later showed a similar trend in age prevalence: 46% for younger women less than 20 years of age, compared to 31% for women from 20 years and beyond who did not receive prenatal care services with their most recent pregnancy (NPC, 2013).

In an older study to evaluate effects of IPV-related pregnancy complications on adults and teenage women, rates among teen and adult mothers were 20.6% and 14.2%, respectively, and both were found to be more likely to enter prenatal care late in their third trimester, compared to women who were not exposed to IPV (Parker et al., 1994). The relationship between physical violence and receipt of prenatal care was also evaluated using a multinomial regression model that showed teenage mothers and those 20 to 24 years old to initiate prenatal care in their third trimester [0.53, 95% CI 0.13-2.15] (Koski et al., 2011). The rate of late entry into prenatal care decreased with increase in maternal age to [0.26, 95% CI 0.03-2.35] among women 40 years and older who were exposed (Koski et al., 2011).

Similarly, McCloskey et al. (2007) found in their study that mothers 18 to 23 years of age were most likely to report partner interference with reproductive healthcare seeking, including prenatal care initiation [28.7, χ^2 4.4, $p = .6284$], compared to older

women 40 to 49 years old. A study by Dietz et al. (1997) showed that women who delayed prenatal care entry were more likely to report physical violence and be of younger age compared to women who initiated prenatal care services early in their the first trimester [31.2% and 54.1%, respectively]. Concerning the age difference pattern in IPV prevalence throughout diverse settings, Devries et al. (2010) suggested that such different results could be due to cohort effect, fertility trends, or recall bias among younger and older women.

Maternal Education

Education enhances confidence and autonomy in decision-making towards one's life issues. Although the role IPV plays in education and employment among exposed women is understudied in Nigeria, studies in the western world have depicted IPV as limiting victims' education and employment potentials (Meisel et al., 2003; Adams et al., 2013). According to Adams et al., women who are exposed to IPV, especially in adolescence, are at a higher risk for attaining less education, and, according to Meisel et al., are negatively associated with losing jobs during the year, having lower wages, and working fewer weeks in a year. McCloskey et al. (2007) pinned down intimate partner interference with reproductive healthcare visits among women. In studies relating IPV to healthcare use among pregnant women, maternal education was found to directly link to increased use of prenatal care and other reproductive healthcare services of trained medical professional (NPC, 2008; Rahman et al., 2012). In Nigeria, 97% of women with more than secondary school education sought prenatal care services from trained professionals, compared to 36% of women with no education (NPC, 2013). Dietz et al.

(1997) hypothesized that women who delay prenatal care services due to IPV exposure were more likely to be less educated [OR 1.1, 95% CI 0.8-1.66], compared to women who entered prenatal care early in their first trimester. In another population study, results suggest that women with higher education were found to have received sufficient prenatal care and delivery assistance from trained medical personnel [AOR 3.0, 95% CI 1.03-2.36], compared to those with only primary education [AOR 1.35 95% CI 0.76-2.40] (Rahman et al., 2012).

Marital Status

A woman's marital status is a significant risk factor for domestic violence, especially in Sub-Saharan African countries where the union between man and woman is seen as a cultural covering, and pregnancy outside marriage is seen as a cultural taboo (Makama et al., 2013). In a national population survey, Nigerian women who are separated, divorced, or widowed are the most likely group to experience IPV by a current or ex-partner (44%, 33%, and 25%, respectively), compared to currently married or never married women (NPC, 2008). Studies that have assessed marital status and reproductive healthcare uptake have also shown that women with no current partner bear the risk of fair or poorer health [AOR 2.1 95% CI 1.3-3.2] compared to women with a dating partner [AOR 1.1 95% CI 0.7-1.7] (McCloskey et al., 2007).

Dietz et al. (1997) used marital status to assess prenatal care entry and discovered that unmarried women were more likely to be abused and initiate prenatal care late into the third trimester compared to abused married counterparts (55.1% and 44.9%, respectively). Divorced women or those in polygamous marriages were significantly

more likely to report IPV (Linos et al., 2013). This was similar to Envuladu's et al. (2012) study, conducted in the northeastern region of Nigeria, that showed that being legally married [OR 0.4 95% CI 0.17, 0.79], or being in a single-wife marriage [OR 0.9 95% CI 0.36, 2.18] has a protective effect on pregnancy-related IPV. Similarly, in the southeastern region, Onoh et al. (2013) conducted a study that also showed that women in polygamous marriages had the highest IPV rate (68.4%), compared to women in monogamous marriages (43.0%). A study in Poland also indicated that 68.7% of unmarried women disclosed IPV, compared to 40.8% of married women in the studied population (Makara-Studzinska et al., 2013).

Maternal Decision-Making Autonomy

A woman's decision-making autonomy is operationally defined as the participant's decision-making in her own health issues, including well-woman check-ups. This autonomy was assessed by whether the woman makes decisions regarding her own health care issues alone or jointly with the partner, boyfriend, or husband, or whether decisions are made by her partner alone or by other people.

Wealth Index

Wealth index is a background characteristic that serves as a proxy for one's standard of living over time. It is constructed based on measured asset scores that are weighted and divided into five quintiles from 1, which represents the lowest, to 5, which represents the highest (NPC [NDHS], 2013). In Nigeria, IPV rates were found to increase as wealth index rises. A national study result showed that 18.8% of women in the lowest wealth quintile disclosed IPV, compared to those in the second, middle, and fourth

quintiles (21.3%, 29.3%, and 34.1%, respectively) (NPC[NDHS], 2008). Inversely, the NPC found that women in the higher wealth quintiles tend to seek prenatal care services earlier in their first trimester than their counterparts in the lower wealth index (93.8% and 23.5%, respectively).

Wealth index was also implicated in a study done by Koski et al. (2011). Their data results showed that women who were exposed to IPV during pregnancy and were in the higher standard of living group were less likely to enter their first prenatal care visit late [0.39 95% CI 0.14-1.09], compared to exposed women in the middle class [1.25 95% CI 0.80-1.95]. IPV and the use of reproductive health services among married women were examined using the Bangladesh national health survey sample. The results showed that exposed women in the highest wealth band were more likely to obtain sufficient prenatal care services earlier and sought delivery assistance from trained medical professionals [AOR 1.62 95% CI 1.01-2.64; AOR 1.98 95% CI 1.34-2.91], compared to exposed women in the middle class [0.89 95% CI 0.52-1.53; 1.12 95% CI 0.79-1.60] (Rahman et al., 2012).

Summary

Throughout the chapter, most reviewed articles, journals, and research work depicted important inferences, ideas, perceptions, and attitudes towards IPV and its interference with women's reproductive health seeking, including most needed prenatal care services for women and their unborn children, which no doubt supports my study. In the course of the review there also emerged several survey methodologies and instruments, with the majority being cross-sectional surveys with questionnaires similar

to the methods and instruments for my study, except for a few that were longitudinal. However, in each study reviewed, the design used was found to be suited and appropriate for measuring the researcher's desired outcome variable of interest. Privacy of respondents was maintained for optimum response rates seen in most studies reviewed. In most cases, survey questionnaires were administered by clinicians known to the respondents, which further fostered ease of disclosure and comfort helpful in obtaining unbiased responses in private issues such as domestic violence.

Reviewed theories were compared carefully with theoretical foundation of this research and were found to be congruent with the theoretical construct and conceptual framework of my study. Murrell et al. (2007) hypothesized and tested the theory of modeling and its correlation with IPV later in adult life and the results supported the modeling theory in that participants who witnessed domestic violence as children were discovered to have committed the most frequent domestic violence; while those who were victims of abuse as children were more likely to commit more general violence and abuse children as well in their adult life.

A study by Linos et al. (2013) is very significant to my research because it helped in forming the foundational framework for understanding IPV in the Nigerian context. It was conducted in Nigeria, using the same cross-sectional design intended for my investigation. Using data from the Nigerian Demographic and Health Survey, Linos' et al. (2013) study showed gross state-wide level permissive social norms towards domestic violence by partner. The study provided an important hint on society's wife-beating justification, especially women with certain demographic upbringing. Valuable lessons

from this study include the influence social norms have on IPV acceptance and disclosures, even among women suffering the abuse. Studies done by Umeora et al. (2008) and Antai and Antai (2008) also highlighted the intensity of socio-cultural influence on IPV disclosure, and as a result, showed that 83% of survey participants believed IPV should not be reported.

The studies done by Arulogun and Jidda (2011), Olagbuji et al. (2010), Shamu et al. (2011), and Umeora (2008) indicated that regional prevalence of IPV during pregnancy in Nigeria showed similarities both in pattern and characteristics. Their investigations also indicated a high prevalence of IPV on average. Onoh et al. (2013) reported a prevalence of 52.2% IPV incident rate among pregnant women less than 20 years of age, compared to 21.1% rate among pregnant women aged 35 to 39 years. Results of these studies also confirmed what previous experts had hypothesized about pregnancy being a major risk factor for domestic violence, because abuse rates and patterns tend to start or escalate during pregnancy and perinatal period. In addition, history of past abuse is a strong predictor of IPV in the index pregnancy. According to a study done by Olagbuji et al. (2010), 66.9% of pre-pregnancy exposed participants also experienced IPV during their index pregnancy as well as in the puerperium. IPV patterns of perpetrators in Nigeria are mostly recurrent, up to 76% in a particular study. Many issues surround the “other woman,” especially in most polygamous marriages or mistress issues outside the marriage. These studies are very significant to the current research in that their designs are all cross-sectional surveys, mostly population-based with questionnaires that have proven validity through pre-testing. These studies also give solid

inside background information on how deep-rooted IPV during pregnancy exists in Nigerian society.

McCloskey et al. (2007) conducted a study that showed partner interference in female reproductive health issues. They were able to significantly associate IPV with women's health-seeking behavior and its correlation with poor health among exposed women. Their study is very important to the current research because it is the first to significantly show the possibility of partners' influence on women's health-seeking behavior, including prenatal care attendance in the United States.

Findings of McFarlane et al. (1992) strongly implicated IPV with delays into prenatal care initiation and low use of other maternal care services. Their study showed that women who were exposed to IPV during pregnancy were twice as likely to enter prenatal care services late in their third trimester as non-abused women. It was also interesting to note that abuse seen in this group was recurrent, as more than half of abused women reported two or more occurrences during the study period, and the pattern is the same among the three ethnic groups studied.

Koski et al. (2011) used four outcome characteristics and elicited associations between recent exposure to physical IPV during pregnancy and restricted health-seeking behavior. Their results showed that women who were exposed to violence in their most recent pregnancy were less likely to have received any form of prenatal care visit, less likely to receive prenatal home-visit checkups by trained health professionals, and less likely to receive three or more prenatal clinic visits. It also showed that women who experienced one or more violent incidents during their most recent pregnancy are more

likely to initiate prenatal care at the third trimester. The result of Koski's et al. (2011) study is very important to the current research because of the similarity in population characteristics between India and Nigeria. Though of different continents, both are developing countries with similarities in cultural views on perception and disclosure of IPV.

IPV against women and during pregnancy is endemic and cuts across nations, regardless of race, ethnicity, or socio-economic background, and it is a most pervasive and shameful human rights violation. Its occurrence is believed to be more frequent than other recognized obstetrics problems such as gestational diabetes, pre-eclampsia, or placenta praevia, which are routinely screened for during pregnancy. Its effects not only exert adverse health complications on the mother, but also on her unborn child. Yet in Nigeria's routine prenatal screening checklist, there is no single question asked to elicit abuse issues, even in cases with obvious physical signs. Nigeria is among the countries with high fertility and domestic violence rates as well as high maternal and infant mortality rates. However, reviews referenced in this chapter indicated no literature on IPV during pregnancy and its association with prenatal care attendance and health-seeking behavior among exposed women in Nigeria. It is this lack in literature that prompted my study in Nigeria.

Fundamental to the success of this research is the methodology presented in Chapter 3. Chapter 3 highlights in detail the research method and sampling procedure, including design justifications. It depicts survey strategies and plans, sampling size and sampling frame, study locations, and approach. It also highlights demographic

characteristics used and their definitions, including some independent maternal variables tested. It describes data collection management and analysis, questionnaire validation, and pre-test and instrument design.

Chapter 3: Research Methods

In the previous chapters, I reviewed and analyzed several research works on IPV and its health consequences, including poor pregnancy outcomes in both developed and resource-limited nations of Sub-Saharan Africa (WHO, 2002). IPV during pregnancy was found to occur more frequently and found to be more common than several maternal conditions that clinicians routinely check during prenatal care clinics (Devries et al., 2010). However, in most settings, especially in developing countries such as Nigeria, IPV is never asked about or screened for during routine prenatal care. Other research work has implicated IPV in women's delay in seeking, low use of, and/or lack of prenatal care (Devries et al., 2010; Koski et al., 2011; McCloskey et al., 2007; Rahman et al., 2012), which immensely increases the risk of infant and maternal mortality (Uthman et al., 2011; World Bank, 2013). In Nigeria, IPV prevalence rates vary with regions between 17% and 34% (NPC, 2008), greatly due to variations in deep-rooted gender inequality as well as perceptions and social acceptability of IPV and wife beating in the homes (Linos et al., 2013). Over time, Nigeria has sustained a relatively high maternal mortality and currently is still among the few countries that contribute to the highest maternal mortality ratio in Sub-Saharan Africa, with a rate of 630 per 100,000 live births in 2012 (World Bank, 2013).

This chapter depicts the design and approach I used to examine the association of IPV with prenatal care attendance among exposed pregnant women attending prenatal care clinics in selected hospitals in Abuja, Nigeria. I describe the study settings, sample

size and its determination, sampling frame, choice of data management and analytical instrument used, participants' eligibility criteria, and privacy protection procedures.

Research Design and Approach

Abuja, the administrative capital of Nigeria, was the site for the study. The cross-sectional quantitative study design used two general hospitals in two different districts (Nyanya and Gwarinpa) out of 12 districts in Abuja Municipal Area Council (AMAC). Researcher-assisted questionnaires (see Appendix A) were designed to cover sections with participants' sociodemographic information; reproductive health questions, including family planning choice, if used; experience of, and perception and attitudes towards IPV; assessment of prenatal adequacy use; and attitudes towards seeking health care. The choice of a cross-sectional quantitative design is based on the research problem, research questions, and nature of participants involved in the study. For a comparative analysis, and to avoid misrepresentation of the population of the study, two large and busy government hospitals with well-established and accessible ANCs were chosen. A large enough data sample was obtained by extrapolating the history of IPV during the index pregnancy (Crosby, DiClemente, & Salizar, 2006).

I collected data from study participants. I am also a licensed nurse in Nigeria and in the United States. The nature, purpose, and benefits of the study were explained to eligible participants, and they gave their permission by acknowledging the informed consent form to participate (for the recruitment letter, see Appendix B). Due to the sensitive nature of IPV, the women were consistently reminded of the voluntary nature of the study and that they could withdraw at any time without penalty. To ensure

confidentiality and maintain anonymity, participants' personal information and responses were coded with special numbers known only to me.

I distributed survey packages. The questionnaire contained close-ended questions in sections organized in logical groups with uniform response options to encourage a sense of order and reliable responses. Another advantage of a cross-sectional survey instrument is that it is a snap-shot of the population, is less expensive, and is a good means of targeting large sample data with no loss to follow up (Aschengrau & Seage, 2007). Although pigeon English is vastly used and understood by all in Nigeria and in Abuja, the English language, which is the official language of the country, was the language of the study, at a Grade 6 level for better understanding.

Population

Abuja is the name of an area covering about 275.3 square miles (713 km²), carved out of three north central states, Nasarawa, Niger, and Kogi, and became the new administrative capital of Nigeria on December 12, 1991. It is centrally located and well planned and houses many domestic and international establishments including embassies, headquarters of Economic Community of West African States, and the regional headquarters for the Organization of the Petroleum Exporting Countries. According to the 2006 country census, the Abuja population was 1,406,239 with 733,173 males and 673,067 females living in the city (National Population Commission, 2006). Recently, Abuja has experienced a heavy influx of dwellers from the middle and far northern states due to the current ethnic and religious crisis involving the Islamic sect called Boko

Haram, resulting in an estimated population figure of 2.153 million and a population growth rate of 2.47% (Campbell & Bunche, 2014).

Despite massive structural and economic expansion, Abuja is still not completely built up. With a guinea forest-savanna mosaic zone, it has patches of rain forest with two seasons of rain and is dusty-dry the rest of the year. Its dwellers are relatively young and middle-aged working class citizens and foreign expatriates. Despite the multiethnic presence with over 250 languages, the official language in Abuja is English, which is also the language of the study.

Abuja is considered perfect for the study because of its multicultural and ethnic diversity comprised of popular Hausa, Fulani, Yoruba, Ibo, Ibibio, and Efik, unlike previous studies that focused on single ethnic regions with mostly one culture. This diversity gave the study result a more generalizable inference for the entire country.

Since its inception, Abuja has experienced a high prevalence of IPV among other north central regions. IPV in Abuja was 37.4% in a study by Efetie and Salami (2007), 31% in a study by NPC (2008), and 43% in a study by Arulogun and Jidda (2011). However, there is no readily available preexisting data or screening on IPV during prenatal visits in Abuja.

There are six local government areas (LGAs) in Abuja. Each of the LGAs has one general hospital and several private hospitals and clinics that are well established, with accessible and well-attended antenatal clinics, but public general hospitals were selected for this study because they offer equal healthcare access to all members of the public irrespective of their individual economic means. The high tendency for equal access to

health care has encouraged their high use among Abuja residents. Moreover, in these hospitals, procedures and attendances are well recorded and archived, a condition that makes an empirical study like this very feasible. Also, the patient socioeconomic differences in the two hospitals provided an effective comparative response and analysis. Nyanya General Hospital and Gwarinpa General Hospital were the two sites selected for the study.

Nyanya hospital is the largest and busiest secondary hospital in the area partly due to its location. It is situated in the midst of densely populated poor and low income dwellers of Nyanya. It serves other surrounding districts such as Karu, Maraba, Jikwoyi, Kurudu, Kpwegi, Kugbo, and Orozo. Nyanya General Hospital provides both outpatient and inpatient services 24 hours a day, 7 days a week, with an emergency room department and lots of referrals for prenatal cases from neighboring health centers and private clinics. According to records, the hospital treats about 100 to 200 pregnant women daily and manages most complicated obstetrical conditions. The antenatal clinic opens Monday through Friday. There is no pre-booking for the prenatal clinic; however, women who walk in for antenatal care are scheduled to be seen per assigned consultants' days among the staff physicians.

Gwarinpa General Hospital is also a busy, big, and upscale hospital, serving middle to high class dwellers of Abuja city. The hospital is located inside the city and serves Gwarinpa district, known to be the single largest estate in Africa and its environment. Gwarinpa General Hospital also provides prenatal clinic Monday through Friday and treats 50 to 100 pregnant women daily.

Sampling Frame and Size Determination

Pregnant women who attend prenatal clinics at Nyanya and Gwarinpa general hospitals and meet the eligibility criteria were invited to enroll in the study. The aim of this study frame was to maximize the generalizability of the sample participants to the population (Crosby et al., 2006), by avoiding bias (Gordis, 2009). Care was taken not to isolate differences that do not exist (alpha error) and to detect significant differences that actually exist in the result (Munro & Connell, 2005). In order to determine adequate sample size, I considered the estimated population size, the amount of error the sample data can allow, how much confidence I had on the actual mean to fall within the confident interval, and lastly, the amount of variance expected from participants' responses (see Crosby et al., 2006). As a clinic related study, there is a generated list of the population (pregnant women from their first through third trimester), so my choice of simple random sampling was the most appropriate and feasible to gain a scientific, scholarly approval.

Calculation of Sample Size

Sample size for this study was determined with a sample size determination formula $n = z^2pq/d^2$ where n represents the sample size, d represents the level of accuracy of the sample size required and is 0.05; a 95% confidence interval is represented with z , which has 1.96 as its value, p represents the prevalence of IPV that recent research stated as 43% in Abuja, Nigeria (Arulogun & Jidda, 2011), and q represents (1-p). Arulogun and Jidda employed this formula to determine their sample size in a similar research in Nigeria. Transforming this formula will give $n = (1.96)^2(0.4)^2(0.6)^2/(0.05)^2 =$

369. In accordance with the practice I used, the actual sample size for the present study was arrived at by increasing the above value of n by 23%, resulting in 460. This size is the total collected from both study sites, with each site collecting 230 completed respondents' questionnaires.

Sampling Method

Sampling is the act of obtaining a sample from a given population that is a truly representative of the target population (Trochim, 2000; WHO, 2005). Probability and nonprobability methods are the two main sampling methods that are widely used. In a probability sampling method, every element of the population stands an equal chance of being selected through a random sampling procedure. However, in a nonprobability method, selections are made independent of the probability theory rationale. Current research sampling was based on probability methods because every pregnant woman who meets the criteria stands an equal chance of being selected, making the sample a true representative of the population and the findings very generalizable.

Sampling Procedure

I employed a three-stage sampling technique, randomly selecting 230 women from each site to participate in the study. The first stage involved a random selection of one LGA out of the six in Abuja (AMAC, Abaji, Kwali, Bwari, Kuje, and Gwagwalada), by the throwing of dice. AMAC was selected for the study. This random selection accommodated my time and financial constraints.

In the second stage, a sampling frame of the six government general hospitals in AMAC was listed: Nyanya, Karshi, Asokoro, Wuse, Maitama, and Gwarinpa. A simple

random sampling of throwing of dice was used to select Nyanya and Gwarinpa general hospitals out of the six. Random sampling was necessary because it would not be feasible to base the study in all six well-dispersed general hospitals in Abuja.

The third stage involved a systematic random sampling procedure. It is a kind of probability method in which elements from the larger population are picked from a random starting point and subsequently selected in a periodic interval (Trochim, 2000). The women were selected within a predetermined interval. If the predetermined interval was K_{th} , once the first element was determined, which was the starting point number, then at every K_{th} interval, the corresponding element would be selected until the required samples are met. The sampling method has the advantage of ensuring that samples are randomly selected from all segments of the list of antenatal clinic attendees (WHO, 2005). The sample size needed to test the study hypothesis ranged from 369 and 460. From the hospital records of attending to about 100 to 200 pregnant women daily, 500 women from each site who meet inclusion criteria were sampled.

In each facility, a comprehensive list of all clinic attendees was compiled; then a number was assigned to each attendee in the list. The sum of all listed attendees was divided with the required sample size for the facility to get the appropriate K_{th} . First, I calculated the sampling fraction by dividing the total population (1,000) by the number of women to be sampled (460). The sampling interval was 2.7391304, which was rounded to 3. Then, a starting point number was randomly chosen. The selected attendee formed the first selected sample. From the corresponding number to the first selection, every

element matching the third interval was selected progressively until the required sample size was met.

Participants' Compensation and Eligibility

For encouragement and to enhance participants' response rate, I offered incentives in the form of healthy drinks (5-alive) and crackers to participants.

Inclusion criteria for the participants were as follows:

- Pregnant women living in Abuja city and receiving care at Nyanya General Hospital and Gwarinpa General Hospital prenatal clinic between November 30th, 2016 and February, 2017.
- Must be in the second trimester (13 to 40 weeks), when pregnancy is getting well advanced. I chose the trimester criteria to gather as much information as possible on possible IPV exposure, since the exposure of interest is one that occurred during the index pregnancy.
- Childbearing age from 19 to 49 years old. Although most of the reviewed studies surveyed pregnant women from age 15 years and above, which, according to NPC (2008), is based on the international reproductive age as well as Nigerian country-specific fertility index age rate, in the present study, I surveyed pregnant women from 19 to 49 years of age.
- Able to understand, read, and/or write English language at a standard sixth grade level.

The exclusion criteria for participants were as follows:

- Pregnant women receiving prenatal care from other facilities or living outside Abuja city.
- Pregnant women receiving care from selected hospitals but in their first or second trimester.
- Pregnant women under the age of 19 years or over 49 years.
- Pregnant women who did not speak the English language.
- Pregnant women with any form of mental or developmental disability.

Instrument Description

I used close-ended questionnaires to assess the association between IPV during pregnancy and prenatal clinic attendance. IPV, being the only explanatory/exposure variable, was measured as an experience of physical or emotional violence by Abuja pregnant woman from her current or former husband, boyfriend, or intimate partner during the index pregnancy. In this study, IPV was measured using a shortened and modified version of Conflict Tactic scale CTS approach used in the Nigerian DHS domestic violence module. This instrument was designed according to the WHO recommendation to guarantee constructive validity and high reliability for population-based IPV surveillance (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The instrument has been used by several countries and other researchers in IPV and gender-based violence situations. CTS-2 was also used to measure IPV in a recent study titled *Intimate Partner Violence and the Utilization of Maternal Health Care Services in Nigeria* (Ononokpono & Azfredrick, 2014). Physical and emotional violence were assessed in the present study; CTS module consisted of eight questions for physical

violence, three psychological violence questions, and six spousal control questions to assess physical and emotional violence by current or former husband, boyfriend, or intimate partner.

To measure prenatal care visit adequacy use and timing of prenatal care initiation among the participants, the study used single indicator indices called Adequacy of Prenatal Care Utilization (APNCU) developed and proposed by Kotelchuck (1994). APNCU is very appropriate and suitable for developing countries such as Nigeria. It is an improvement on the 1985 American College of Obstetricians and Gynecologists prenatal care recommendation and characterizes the prenatal care use index in two distinctive and independent dimensions. First, it assesses the adequacy of prenatal initiation, and secondly, the adequacy of subsequent visits until delivery. It does not measure the quality or content of care visits. I considered the critical need in measuring both prenatal care use and timing of initiation for accurate and appropriate measurement of attendance of prenatal care (Kotelchuck, 1994). The APNCU Index has been validated and used by several studies with high reliability (Trinh et al., 2006; Ajayi, & Osakinle, 2013; Ononokpono & Azfredrick, 2014). According to the WHO recommendation, four or more prenatal care visits during the course of pregnancy for uncomplicated cases is considered adequate or sufficient. However, the first visit should be within the first four months of gestation (WHO, 2002). The APNCU index classified prenatal care visits in categories of “inadequate,” “intermittent,” “adequate,” and “adequate plus,” based on a number of visits score during a 40-week period, with 14 clinic visits recommended by the American College of Obstetricians and Gynecologists, ACOG (Kotelchuck, 1994).

However, in my study, based on the WHO recommended four-focused-visit approach, prenatal care visit use was classified in either “adequate” or “inadequate” categories, where the adequate category in this study corresponds to adequate and adequate plus categories of the APNCU index, and the inadequate category corresponds to the inadequate and intermittent categories (Ononokpono & Azfredrick, 2014). A pregnant Abuja woman who has attended four or more visits, with her first visit within the fourth, fifth, or sixth month, is considered “adequate;” whereas, attendance of fewer than four visits, with the first prenatal visit during her seventh month or later, will be categorized as “inadequate.” Maternal health-seeking behaviors were assessed by the Abuja pregnant women’s use or knowledge of contraceptive methods available as well as their visits to a clinician for routine annual physicals that include clinical breast examination, pap smear, and STD/HIV screening. The questions prompted a “yes” or “no” answer, which were graded later as “high” or “low” use. Questions from the IPV exposure and APNCU instruments, as well as some maternal extraneous variables, constituted the entire structured questionnaire used in the study. A Likert scale question in the instrument that measures maternal media exposure by assessing reading of newspapers, listening to radio, or watching TV as (a) almost every day, (b) at least once a week, (c) less than once a week, and (d) not at all was grouped into categories “Yes” and “No” by combining answers for (a) and (b) as Yes, and answers to (c) and (d) as No.

Instrument Validation

To measure the variables in this study, I used the modified version of Conflict Tactics Scale (CTS) approach as embodied in the Nigeria Demographic and Health

Surface domestic violence module (NPC, 2008) with some modifications to fit the present population and study questions. This instrument has been used in several studies relating to gender violence prevalence and health outcomes in Nigeria and beyond. CTS questions have gone through several validation processes to maintain their internal consistency by measuring item construct. CTS questions were used by the WHO in their multi-country survey on women's health and domestic violence (Garcia-Moreno et al., 2005).

The instrument was tested in a pilot study within the population of study after IRB approval. Cronbach's alpha reliability score of > 0.7 was considered acceptable for my study (Cronbach, 1951), so a score of 0.80 with an error variance of 0.36 (Tavakol & Dennick (2011) was used for the altered instrument. To enhance the respondents' understanding, the questionnaire items were framed without any ambiguity, and worded simply and clearly (Crosby et al., 2006).

Research Questions

Research Question 1: To what extent is maternal experience of IPV during pregnancy associated with prenatal care attendance?

Null Hypothesis 1: Maternal experience of IPV during pregnancy is not associated with prenatal care attendance.

Alternative Hypothesis 1: Maternal experience of IPV during pregnancy is associated with prenatal care attendance.

Research Question 2: To what extent is maternal experience of IPV during pregnancy associated with prenatal clinic commencement within the first trimester?

Null Hypothesis 2: Maternal experience of IPV is not associated with prenatal clinic commencement within the first trimester.

Alternative Hypothesis 2: Maternal experience of IPV during pregnancy is associated with commencement within the first trimester.

Concepts Measured

Questionnaire data were used to measure the association of IPV during pregnancy with prenatal clinic attendance. Creswell (2009) informed that “variables are measurable or observed attributes or characteristics of an individual, organization, or population, which varies among the study group” (p. 49). This study measured the independent and dependent variables as well as the extraneous variables that have the potential of influencing the dependent variable. Another important point in this study was measuring the operational definition of the variables that describe how the variable is defined and measured in the study (Singleton, Straits, & Straits, 2005).

Independent Variable

The independent variable measured in this study is the exposure of IPV during pregnancy. It is the predictor variable presumed to cause the observed phenomena, as it is what causes another to change (Singleton et al., 2005). In this study, IPV is operationally defined as an Abuja pregnant woman’s experiences of physical and emotional violence that occurred during the index pregnancy, perpetrated by an intimate partner such as current husband, ex-husband, boyfriend, ex-boyfriend. The participants’ scores on physical and emotional violence were used to measure exposure of IPV. The questionnaire is a shortened and modified version of CTS, adopted by the NPC (2008).

The questions ask for experience of specific acts of violence peculiar to partnership violence rather than asking about general violence. According to Garcia-Moreno et al. (2005), “This approach encourages cooperation and greater disclosure of violence, compared to methods that specifically ask or require participants to identify themselves as battered or abused women” (p. 1262).

For physical violence, each respondent was asked whether her current husband, intimate partner, boyfriend, ex-husband, or ex-boyfriend has perpetrated the following acts: (a) pushed her, shook her, or threw something at her, (b) slapped her, (c) twisted her arm or pulled her hair, (d) punched her with his fist or with something that could hurt her, (e) kicked her, dragged her, or beat her up, (f) tried to choke her or burn her on purpose, (g) threatened her or attacked her with a knife, gun, or any other weapon (NPC[NDHS] 2008). Question (h) in the NDHS IPV module was omitted because it assesses sexual violence, which is not a measured variable in this study. The responses are categorized as “yes” or “no.” One or two “yes” responses to any item from (a) to (g) constitutes physical IPV exposure (NPC [NDHS], 2008). Emotional violence exposure was assessed using a binary variable. In this study, each participant was asked whether her current husband, intimate partner, boyfriend, ex-husband, or ex-boyfriend has done or said something to humiliate her in front of others, threatened to hurt or harm her or someone close to her, or insulted her or made her feel bad about herself (NPC,[NDHS] 2008). These yes and no responses, measured in questions 30, 31, and 32 of the instrument, were assigned a score of 1 for a “yes” response and 0 for a “no” response. The measurement of physical and emotional intimate violence was also based on pregnant Abuja women’s scores.

Dependent Variables

The outcome variables measured in this research were prenatal care attendance and the commencement time among the study participants. Prenatal care attendance in this study is operationally defined as Abuja pregnant women's reception of pregnancy-related prenatal care services provided by trained health professionals to monitor, maintain, and support the quality health status of the woman and the fetus from conception until onset of labor. Low use of both reproductive health services and prenatal care has been widely implicated for adverse reproductive health outcomes resulting in a high prenatal and maternal mortality rate in Nigeria (World Bank, 2013). The critical issue in this study was to examine and determine if any association exists between the independent and dependent variables. The study measured the dependent variable by assessing the number of prenatal care visits and the duration of pregnancy at first prenatal care visit (Kotelchuck, 1994).

The APNCU Index proposed by Kotelchuck (1994) classified prenatal care visit categories as inadequate, intermittent, adequate, and adequate plus. However, in my study, prenatal care visit use was classified as categories of either "adequate" or "inadequate," where the adequate category in this study corresponds to the "adequate and adequate plus" categories of the APNCU Adequacy Utilization Index, while the inadequate category corresponds to the "inadequate and intermittent" categories (Ononokpono & Azfredrick, 2014). The WHO's prenatal adequacy recommendation includes at least four prenatal care visits during the course of pregnancy for uncomplicated cases, with the first visit occurring within the first four months of

gestation (WHO, 2002). In my study, a participant's prenatal visits were classified as "adequate" if she had four or more visits and the first visit was within the first four, five, or six months of gestation. Visits were classified "inadequate" if she had fewer than four visits and initiated prenatal care visit at the seventh month or later (Ononokpono & Azfredrick, 2014). This variable was measured through respondents' answers to questions 18 through 25 in the instrument. Their responses to adequacy were scored 1, and inadequacy scored 0.

Extraneous Variables

Previously, some covariates have been theoretically and empirically shown to mediate the effects of an independent variable on a dependent variable considered in the analysis (Creswell, 2009). They are often referred to as moderating variables because they identify the conditions under which the relationship between independent and dependent variables may be stronger or weaker (Crosby et al., 2006). In my survey instrument, maternal age, maternal education, marital status, media exposure, woman's decision-making autonomy, and wealth index were taken into consideration for their mediating effects on IPV and prenatal clinic attendance (NPC, 2008; Ononokpono & Azfredrick, 2014).

Maternal age is categorized in ranges of 20 to 29, 30 to 39, and 40 to 49 years of age. It was measured in question 1.

Marital status is grouped into three categories: never married; married or living together; divorced, separated, or widowed. It was measured in question 2.

Maternal education is categorized as primary, secondary, or higher education and no education categories. It was measured in question 3 (NPC, 2008).

Woman's decision-making autonomy is operationally defined as participant's decision-making in her own health issues, including well-woman check-ups. This variable is assessed by whether the women makes decisions alone or jointly with the partner, boyfriend or husband, or whether decisions are made by her partner alone or by other people regarding her own health care issues. It was measured in question 29.

Maternal parity is number of children, categorized as 0, 1-2, 3-4, or 5+ (NPC, 2008). It was measured in question 21.

Wealth index, adopted from NPC (2008), is categorized into lowest, second, middle, fourth, or highest quintiles, based on household assets determined from principle component analysis by the NPC. It was measured in questions 12 through 17.

Demographic and Pregnancy History

Demographic information was collected, including pregnancy history relevant to the study, such as maternal age, marital status, education, and ethnic group (Igbo, Yoruba, Fulani, and Hausa). Other information included woman's decision-making autonomy, media exposure, wealth index, parity, pregnancy status – planned or unplanned, expected date of delivery, and how many weeks pregnant at first prenatal visit. Questions from the independent and dependent variables and demographic data constitute the entire structured questionnaire for the study. The NPC's modified version of CTS and APNCU Index instrument used in this study was considered due to its use in similar populations of women with IPV exposure, and because their reliability and

validity have been tested several times. However, a few changes were made to some of the DHS questions to enable me to capture needed data to answer research questions, and were pre-tested in a pilot study.

Data Collection

The simplicity in the process of this data collection, which included the language used, was instrumental in minimizing errors as well as optimizing responses. With the exception of new walk-ins, the prenatal clinics had structured clinic days, giving me an estimate of the number of participants to expect each clinic day. After IRB approval, the matron introduced me to the entire staff in order to obtain maximum cooperation. I was present every study day to collect data. To ensure participants' confidentiality, information on eligible participants was not disclosed to nursing or allied staff of the hospital. The study locations see approximately 50 to 200 pregnant women daily at each site. Because there was no prior IPV screening or history on participants' medical records, I used a random selection technique to collect data among a list of eligible patients until the desired sample size was reached.

The recruitment letter approved by the Walden University IRB (see Appendix B) was distributed individually to participants during their routine clinic visits days, two weeks prior to commencement of the study to give participants time to think through their decision. I assigned a unique ID to the name of each woman who was invited to the study. The questionnaire was a pencil and paper, in-person survey. The study was conducted in the examination room before or after their clinician consultation. To avoid stigmatization, the study was not be labeled as an IPV study; rather, participants were

told that it is about women's health, including any experience of IPV. Inside the privacy of the examination room, enrolled participants were given the study information and instruction sheet. Informed consent was obtained, and I entertained questions or clarifications from participants. If a participant was not educated or could not read due to issues such as forgetting her reading glasses, I read the questions and recorded the participant's response. I scanned through the questionnaire to ensure completeness of all questions before the participant left the room.

The questionnaire took approximately 45-60 minutes to complete. A compensatory snack and drink were offered to each participant upon completion of the survey. Because the study was done in two different locations, each location was visited twice a week. The fifth day of the week was devoted to equalizing sample numbers unmet from any of the locations. I needed a large population to survey. During the course of the survey, should any participant become emotional, resources for support services were made available. I continued data collection until the desired sample size was met.

Location of Raw Data

When all paper-based questionnaires had been completed, I coded them and placed them in a locked, password-protected home office cabinet. Data were also stored on an encrypted USB key and personal laptop with password protection.

Data Cleaning

Checking the data for logical inconsistencies was very significant in the statistical analysis that answers the research questions in my study (Crosby et al., 2006). The original data was checked against the computerized data for accuracy of data entry. The

values of all measures were also checked for plausibility, including the frequency at which each variable occurred in the data file. For data management and analysis, the Statistical Package for Social Science (SPSS/PC 21.0) was used.

Data Analysis and Reporting

Univariate analysis was used to describe frequencies, means, standard deviation, percentages, kurtosis, and to show normality of the variables as well as explain respondents' characteristics. IPV prevalence among covariate subgroups are described using a bivariate contingency table. Chi-square was used to examine hypothesized associations. Because the study outcome measures were dichotomous variables, I used binary logistic regression models to examine relationships or associations between IPV and prenatal care adequacy and other maternal healthcare outcomes. The level of significance was set at $p < .05$ and a confidence interval of 95%. Table 1 depicts the research questions and the variable summary.

Research Questions, Statistical Test, and Variable Summary

Based on the percentage and means score obtained in the analysis, the following research questions were answered:

Research Question 1: To what extent is maternal experience of IPV during pregnancy associated with prenatal care attendance?

To examine research question 1, logistic regression was conducted to assess if IPV predicts whether a woman has had adequate prenatal care visits during the course of pregnancy until onset of labor. It was appropriate to use the logistic regression model, as the goal was to investigate if a single independent variable (IPV) can predict a

dichotomous outcome variable. Exposure of IPV among Abuja pregnant women was assigned integer 1 to a “yes” response, and 0 to a “no” response. The number of the “yes” responses measured in questions 30 through 31, with 32 sub-questions automatically indicating an exposure, was tallied to estimate IPV prevalence. Later, this tally was used to compare with participants’ clinic attendance records. Prenatal care visits were measured by participants’ responses of “yes” or “no” to question 30 with sub-questions A through H, and question 32 with sub-questions I through R. To validate their answers, participants’ hospital records were also used to verify gestational age at first visit as well as subsequent visits. To investigate whether IPV exposure precipitated delay in prenatal care attendance, mean scores were compared. I used *t*-tests to test if results obtained were not by chance. This was achieved by using the probability of $p < 0.05$ equal or less than .05.

Research Question 2: To what extent is maternal experience of IPV associated with clinic commencement within the first trimester?

To examine research question 2, a logistic regression model was fitted to assess if IPV is associated with prenatal care commencement within the first four months as recommended. The logistic regression model is the appropriate statistical tool because it is useful when predicting dichotomous outcome variables from a single independent variable. IPV exposure is the independent variable in the model. The dichotomous outcome of interest was to investigate whether IPV exposure precipitated late entry into prenatal care by assessing the gestational age of the first prenatal visit measured in question 23. Mean scores were compared and *t*-tests were used to test if results obtained

were not by chance. This was achieved by using the probability of $p < 0.05$ equal or less than .05. It is expected that the analysis will provide substantial evidence to support or refute the hypothesis stated in research question 2.

Table 1

Research Questions and Variable Summary

Research question	Analysis	Independent variable	Independent variable coding	Dependent variable	Dependent variable coding
1	Logistic	IPV exposure	Push, slap, kick, or punch	Clinic attendance	1 = Adequate
	Regression	(ordinal)	Drag or try to choke, hurt or burned you on purpose, threatened or attacked you with a knife, gun or any other weapon; said or did something to humiliate you in front of others, insulted or made you feel bad about yourself; jealous or angry if you talk to other men, limit or does or did not permit you to meet families, friends, or access healthcare services or insists on knowing where you are at all times	(dichotomous)	0 = Inadequate
2	Logistic	IPV exposure	Enrollment of care within the first 4 months of pregnancy	Clinic commencement	1 = Adequate
	Regression	(ordinal)	Number of women who started prenatal care during their first trimester	(dichotomous)	0 = Inadequate

Ethical Considerations

Participants' Rights Protection

The researcher adhered to Walden University IRB protocol (Walden University IRB Approval # 2016.08.15 16:21:01-05) for maintaining participants' confidentiality and minimization of risk of harm. Several ethical issues are mired in social science research involving humans, as well as a code of professional conduct for researchers. However, as pertaining to my study, great concern and sensitivity was taken in obtaining informed consent and maintaining privacy, confidentiality, trust, respect, and honesty to promote study integrity.

Informed Consent

Individually, participants received information about the nature of the study, its objective and benefits, selection criteria, guarantee of privacy, potential risk involved, and their rights to withdraw at any time without penalty. Informed consent was obtained from participants who were willing to participate. Participants read and acknowledged their consent before proceeding to the survey questionnaire. To prevent disclosure of participants' true identity, unique identifiers were used on the questionnaires instead of their names. As the only covered entity, I am the only person with pass code access to the data storage location.

Respect, Trust, and Honesty

The relationship between the researcher and participants in a social science study is very crucial to the success of the research, and must be based on mutual respect, trust, and honesty. It is equally essential for participants to have a feeling of autonomy to

respond or not to respond to the questionnaires, and to avoid being coerced to participate. Care was taken to seal participants' responses in individual envelopes, after checking for question completeness, before they left the room. Finally, survey instruments were coded in unique identifiers so that they cannot be traced to participants' names or identities.

Summary

This chapter presented the comprehensive methods that I used in obtaining study data from participants to investigate whether IPV exposure during pregnancy is associated with late entry and/or inadequate prenatal visits, as well as maternal healthcare-seeking behaviors. Due to the nature of the study, I used both descriptive and inferential statistics to analyze data that addressed research questions. Based on the high prevalence of IPV in Nigeria, especially in the north eastern region, Abuja was considered to be the study location. The chapter also considered the design, approach, choice of on-site distribution and retrieval of questionnaires at two locations, and finally, the sample size determination of 470 participants. Eligibility criteria, sampling procedures, instrument validation, and use of appropriate analytical tools were all taken into critical consideration.

Chapter 4 presents the data results and study findings that tested the hypotheses and answered research questions mentioned in this chapter. Chapter 4 also reviewed the research purposes, questions, and hypotheses.

Chapter 4: Results

Introduction

The purpose of this study was to assess the association between IPV during pregnancy and prenatal clinic attendance and commencement among IPV-exposed women in selected hospitals in Abuja, Nigeria. I also examined whether women who did not experience IPV display any negative attitudes in seeking prenatal care services. For this study, I sampled 467 pregnant women attending the prenatal clinics in Nyanya General Hospital and Gwarinpa General Hospital in Abuja, Nigeria. I measured prenatal visit initiation adequacy by recording the week of gestation at which participants first entered care management, while I measured prenatal care attendance by the total number of visits before delivery. I also reviewed the respondents' healthcare-seeking behavior by measuring participants' prior doctor's visits for annual health checks as well as knowledge of family planning location near their place of residence and family planning methods to avoid unwanted pregnancies. I also looked at the possible independent influence from other variables such as maternal education, age, parity, decision autonomy, media exposure, and wealth quintile on prenatal care attendance and adequacy of clinic initiation.

Research Questions

Research Question 1: To what extent is maternal experience of IPV during pregnancy associated with prenatal care attendance?

Null Hypothesis 1: Maternal experience of IPV during pregnancy is not associated with prenatal care attendance.

Alternative Hypothesis 1: Maternal experience of IPV during pregnancy is associated with prenatal care attendance.

Research Question 2: To what extent is maternal experience of IPV during pregnancy associated with prenatal clinic commencement within the first trimester?

Null Hypothesis 2: Maternal experience of IPV is not associated with prenatal clinic commencement within the first trimester.

Alternative Hypothesis 2: Maternal experience of IPV during pregnancy is associated with commencement within the first trimester.

Pilot Study Analysis

I conducted a pilot study on the study instrument because of added questions to the original instruments to answer specific research questions peculiar to the study population. I used 31 eligible respondents to the main study with similar characteristics and environment. The site was the Jikwoyi Health Center, a location about 5 miles from one of the main study sites, Nyanya General Hospital in Abuja. Awareness for the pilot study was created by posting invitation flyers (see Appendix B) within the health center's prenatal clinic a week prior to study date. Participants' consent was obtained after eligibility criteria were met. It was a test-retest study design. The respondents commented on the difficulty, ambiguity, and consistencies of the questions and response items. Their overall comments were favorable. I computed test-retest and internal consistency (Cronbach's Alpha) reliability tests from the responses of the 31 pilot study participants.

For the computation of the test-retest reliability, responses of each participant in both test and retest sessions were scored to a maximum of 100%. The test (first test) had

an $m = 56.5$ and $SD = 6.40$ while the retest (second test) had an $m = 57.90$ and $SD = 5.84$. Consequently, the Pearson correlation coefficient (r) based on paired scores of the respondents was computed. The test-retest reliability value was .895 (see Table 2).

Three questions in the survey form tested the levels of the participant's likelihood to seek information on issues concerning IPV. The questions are Questions 8, 9, and 10. Question 8 had a $m = 3.16$ and $SD = 1.07$. Question 9 had an $m = 1.55$ and $SD = .89$. While Question 10 had an $m = 1.39$ and $SD = .76$. The Cronbach's α internal consistency of the questions was .789. Indications from the pilot study informed that the survey form was adequate and reliable; however, participants' responses prompted the addition of Question 6, which asked participants, "If yes to Question 5, what kind of work do you do?" then Question 7, which asked, "If no to Question 5, why have you not worked in the last one year?" Also, Question 27 was added to adequately measure family planning methods used by participants. I proceeded with the main data collection process as planned.

Table 2

Pearson Correlation Result – Pilot Study

Test	Result
Test 1	
Pearson Correlation	0.895**
Significance	0.000
N	31
Test 2	
Pearson Correlation	0.895**
Significance	0.000
N	31
Cronbach's Alpha	0.789
N	19

Study Population

The respondents in this cross-sectional study were pregnant women attending prenatal care at Study Site 1 (Nyanya General Hospital) and Site 2 (Gwarinpa General Hospital), both in Abuja, the capital city of Nigeria, who met study eligibility and consented to participate. The instrument was a 32-question, open-ended questionnaire adapted from the 2008 NPC. I raised awareness about the study by posting flyers in the prenatal clinics of the hospitals, inviting patients to participate.

The study duration was from November 2016 to February 2017. After obtaining IRB approval from Walden University and country cooperation approval from the Federal Capital Territory, Health Research Ethics Committee Abuja, Nigeria, I handed out 235 questionnaires to eligible pregnant women in each hospital, making a total 470 survey instruments disseminated. I received 234 completed surveys from Nyanya General Hospital and 233 completed surveys from Gwarinpa General Hospital for a total of 467 completed surveys; a response rate of 97%.

Descriptive Statistics

I adopted the modified version of the CTS embodied in the NPC domestic violence module (NPC, 2008) in addition to the APCU developed and proposed by Kotelchuck (1994). It was a cross-sectional, quantitative design with 32 open-ended questions. Table 3 shows that 41% of the respondents ($n = 190$) were within the 25 to 29 age group, followed by 37% ($n = 173$) from ages 30 to 34 years, 10.3% ($n = 48$) from

Table 3

Descriptive Statistics of Respondents

Variables (N = 467)	Frequency (N)	Percentage (%)
Age		
19-24 years	48	10.3
25-29 years	190	40.7
30-34 years	173	37.0
35-39 years	34	7.3
40-44 years	22	4.7
Marital status		
Single/living together	19	4.1
Married/living together	442	94.6
Divorced/separated	4	0.9
Never married/never lived together	2	0.4
Education		
Primary	17	3.6
Secondary	152	32.5
Higher	298	63.8
Wealth Index		
Poorest	95	20.3
Second	92	19.7
Middle	87	18.6
Fourth	90	19.3
Richest	103	22.1
Parity		
0	158	33.8
1-2	229	49.0
3-4	67	14.3
5+	13	2.8
Occupation		
Business woman	170	36.4
Artisan	12	2.6
Paid job	212	45.4
No job	73	15.6
Religion		
Catholic	130	27.8
Other Christian	274	58.7
Islam	62	13.3
Traditionalist	1	0.2
Ethnicity		
Igbo	178	38.1
Yoruba	57	12.2
Hausa	41	8.8
Fulani	6	1.3
Others	185	39.6

ages 19 to 24 years, 7.3% ($n = 34$) from ages 35 to 39 years, and finally 4.7% ($n = 22$) from ages 40 to 44 years. The survey results also indicated that the majority (94.6%, $n = 442$) of respondents were married and living together, while 4.1% ($n = 19$) were single/living together, followed by 0.9% ($n = 9$) who were divorced/separated, and finally, 0.4% ($n = 2$) who had never married and never lived together.

Most of the women (63.8%, $n = 298$) I surveyed had a college degree, followed by 32.5% ($n = 152$) with a secondary-school education degree, and 3.6% ($n = 17$) with only a primary-school education degree. Almost half (45.4%, $n = 212$) had paid jobs, 36.4% ($n = 170$) managed and ran their own businesses, and 2.6% ($n = 12$) were artisans, while 15.6% ($n = 73$) did not have jobs or any other form of income. More than a quarter of the respondents fell into the richest wealth quintiles at 22.1% ($n = 103$), compared to respondents who fell into the poorest wealth quintile (20.3%, $n = 95$), while the remaining respondents fell between the second and fourth quintiles of wealth based on household items, living conditions, and the landed property the respondent or family owned. The analysis also showed that more than half of women surveyed were other Christians (58.7%, $n = 274$) with 27.8% ($n = 130$) being Catholics, 13.3% ($n = 62$) being Muslims, and a lone respondent 0.2% ($n = 1$) who is a traditionalist. When I assessed respondents' ethnicity, 39.6% ($n = 185$) of the women surveyed were from the Gbagi, Igala, and Idoma tribes that are indigenous to Abuja, followed by the Igbos (38.1%, $n = 178$), Yoruba (12.2%, $n = 57$), Hausa (8.8%, $n = 41$), and Fulani (1.3%, $n = 6$).

Tables 4 and 5 show that the analysis also revealed that more than half (88.7%, $n = 414$) of surveyed women had adequate exposure to media; however, only 11.3% ($n =$

53) had inadequate media exposure from reading newspapers/magazines, listening to radio, and watching TV. When I assessed women's decision-making autonomy, the survey analysis indicated that 49.9% ($n = 233$) of respondents made conscious decisions as to when to seek medical help compared to 21.2% ($n = 99$), who depended on their partner/husband or boyfriend to make healthcare decisions for them.

The data also revealed that 86.3% ($n = 403$) of study participants indicated some knowledge of family planning sites within their reach, while 13.7% ($n = 64$) had no knowledge of where to obtain family planning services. Most women surveyed (44.6%, $n = 164$) also indicated the option of using a condom as the family planning method of choice, followed by no sex (abstinence; 20.1%, $n = 74$); the least likely method was an IUD (7.1%, $n = 26$).

Table 4

Respondents' Media Exposure, Abuja, Nigeria, 2016

Variable	Frequency (N)	Percentage (%)
Read newspaper or magazine		
Almost every day	94	20.1
At least once a week	162	34.7
Less than once a week	97	20.8
Not at all	114	24.4
Listened to the radio		
Almost every day	306	65.5
At least once a week	92	19.7
Less than once a week	55	11.8
Not at all	14	3.0
Watched TV		
Almost every day	390	83.5
At least once a week	55	11.8
Less than once a week	18	3.9
Not at all	4	0.9
Media exposure adequacy		
Inadequate	53	11.3
Adequate	414	88.7

Table 5

Respondents' Health Seeking, Decision Autonomy, and Contraceptive Use

Variable	Frequency (N)	Percentage (%)
Had medical check-up (breast examination, pap smear, HIV/AIDs, or STDs) test within the past year?		
Yes	325	30.4
No	142	69.6
Who helps you decide when to go to the hospital to see a doctor?		
Myself	233	49.9
My husband/partner	99	21.2
Myself, husband/partner jointly	129	27.6
Someone else	6	1.3
Knowledge of where to get family planning		
Yes	403	86.3
No	64	13.7
Contraceptive method		
Abstinence	74	20.1
Pills	45	12.2
Intrauterine device	26	7.1
Breastfeeding	59	16.0
Condom	164	44.6

Table 6 shows the descriptive results of respondents' pregnancy experiences, prenatal clinic attendance, and clinic initiation time, as well as IPV exposures including types and onset of exposure. The analysis revealed that 45% ($n = 210$) of the respondents were within 28 to 32 weeks of gestation, followed by 35.8% ($n = 167$) within 36 to 40 weeks of gestation, and finally 19.3% ($n = 90$) from 13 to 27 weeks of gestation. The data also showed that 24.8% ($n = 116$) of the women were on their third prenatal clinic visit at time of the survey, followed by those with more than four visits (21.4%, $n = 100$), and then those on their second visits (19.5%, $n = 91$), those on their fourth visits (18.6%, $n = 87$), and finally 15.6% ($n = 7$) on their first prenatal clinic visit. Analysis also showed that among the pregnant women surveyed, 52.5% ($n = 245$) initiated prenatal clinic visits early within 16 weeks of gestation, compared to 47.5% ($n = 222$) of those who initiated prenatal clinic visits beyond 16 weeks of gestation. When I assessed parity, 33.8% ($n =$

158) of women have had multiple pregnancies, while most them (65.3%, $n = 305$) had a history of lost pregnancies.

Table 6

Respondents' Pregnancy Experiences, Abuja, 2016

Variable	Frequency (N)	Percentage (%)
Number of times being pregnant		
Once	128	27.4
2 times	158	33.8
3 times	98	21.0
4 times	58	12.4
5 times or more	25	5.4
Loss of pregnancy		
Yes	305	65.3
No	162	34.7
Parity		
0	158	33.8
1-2	229	49.0
3-4	67	14.3
5+	13	2.8
Gestation in weeks		
13-27 weeks	91	19.5
28-32 weeks	210	45.0
36-40 weeks	166	35.5
Prenatal visit frequency		
First visit	73	15.6
Second visit	91	19.5
Third visit	116	24.8
Fourth	87	18.6
More than four visits	100	21.4
Prenatal visits		
Inadequate (< 4)	99	21.2
Adequate (≥ 4)	368	78.8
Gestation week at first visit		
Within 16 weeks	245	52.5
After 16 weeks	222	47.5
Initial visit within 16 weeks of gestation		
Inadequate (> 16 weeks)	228	48.8
Adequate (≤ 16 weeks)	239	51.2

Tables 7 and 8 show that the IPV exposure rate among study participants was 55.2% ($n = 258$), while 43.3% ($n = 202$) of participants were unexposed to IPV during the index pregnancy. Among IPV exposed women, 51.8 % ($n = 242$) experienced

emotional IPV, whereas physical IPV exposure was 26.1% ($n = 122$) among the exposed. (Note the multi-response effect.) When asked about the onset of IPV exposure, most women recorded that the onset was after marriage/after living together for 23.3% ($n = 109$), followed by those whose onset started at the index pregnancy (17.8%, $n = 83$); the fewest reported onset before marriage/before living together (15.6%, $n = 73$). However, all exposed groups still indicated an ongoing exposure with the index pregnancy, despite onset before the current pregnancy or before marriage.

Table 7

Respondents' IPV Exposure

Variable	Number of Cases	Percentage
Emotional IPV	242	51.8
Physical IPV rate	122	26.1
IPV prevalence of all forms (emotional and physical combined)	258	55.2

Table 8

IPV Exposure by Onset

Variable	Frequency (N)	Percentage (%)
Since this pregnancy	83	17.8
Before marriage or before living together	73	15.6
After marriage or after living together	109	23.3
Not applicable	202	43.3
Total	467	100.0

When I examined forms of both physical and emotional IPV (see Table 9), the majority of those who reported physical abuse exposure recorded “yes” to the following: “Slap you,” 32.3% ($n = 64$); “Push you,” “shake you,” or “throw something at you,” 22.2% ($n = 44$); “Kick you,” “drag you,” or “beat you up,” 16.7% ($n = 33$); “Twist your arm” or “pull your hair,” 10.6% ($n = 21$); “Punch you with his hand” or “with something that could hurt you,” 10.6% ($n = 21$); “Threaten or attack you with a knife, gun, or any

other weapon,” 5.1% ($n = 10$), and finally “Try to choke you or burn you on purpose,” 2.5% ($n = 5$). Equally, those who reported exposure to emotional IPV recorded “yes” to “He insists/insisted on knowing where you are at all times,” 27.2% ($n = 135$); “He (is/was) jealous or angry if you (talk/talked) to other men,” 17.3% ($n = 86$); “Insulted you or made you feel bad about yourself,” 15.1% ($n = 75$); “Said or did something to humiliate you in front of others,” 13.9% ($n = 69$); “He (does/did) not permit you to meet your family/friends,” 6.9% ($n = 34$); “He (tries/tried) to limit your contact with your

Table 9

IPV Exposure by Partner, Abuja, Nigeria, 2016

Physical IPV	Frequency (N)	Percentage (%)	Percentage of cases
Push you, shake you or throw something at you	44	22.2	36.1
Slap you	64	32.3	52.5
Twist your arm or pull your hair	21	10.6	17.2
Punch you with his hand or with something that could hurt you	21	10.6	17.2
Kick you, drag you, or beat you up	33	16.7	27.0
Try to choke you or burn you on purpose	5	2.5	4.1
Threaten or attack you with a knife, gun, or any other weapon	10	5.1	8.2
Total	198	100.0	162.3
Psychological IPV	Frequency (N)	Percentage (%)	Percentage of cases
Said or did something to humiliate you in front of others	69	13.9	28.5
Threatened to hurt or harm you or someone close to you?	22	4.4	9.1
Insulted you or made you feel bad about yourself?	75	15.1	31.0
He (is/was) jealous or angry if you (talk/talked) to other men	86	17.3	35.5
He frequently (accuses/accused) you of being unfaithful	27	5.4	11.2
He (does/did) not permit you to meet your family/friends.	34	6.9	14.0
He (does/did) not permit you to go to the doctor.	16	3.2	6.6
He (tries/tried) to limit your contact with your family.	32	6.5	13.2
He (insists/insisted) on knowing where you are at all times.	135	27.2	55.8
Total	496	100.0	205.0

family,” 6.5% ($n = 32$); “He frequently (accuses/accused) you of being unfaithful,” 5.4% ($n = 27$); “Threatened to hurt or harm you or someone close to you,” 4.4% ($n = 22$); and finally, “He (does/did) not permit you to go to the doctor,” 3.2% ($n = 16$).

Factors Affecting the Frequency of Prenatal Care Visits During Pregnancy

I assessed the associations between frequency of prenatal care visits and some selected maternal variables such as parity, media exposure, wealth index, age, education, marital status, education, and IPV exposure during pregnancy using the chi-square test of association. Table 10 shows the chi-square test reports. I set the level of significance at $p < 0.05$. I measured the adequacy of prenatal care visits based on WHO-focused visits approach recommendations (WHO, 2002). Following these recommendations, attending four or more visits during the course of a pregnancy, with the first clinic visit within the first four months (16 weeks) of gestation is adequate, whereas, attending fewer than four visits, with the first prenatal visit after the fourth month is inadequate (WHO, 2002).

Table 10 indicates that 47.5 % ($n = 176$) of the women who had fewer (1-2 parity) children were more likely to have adequate prenatal care visits than those who had five or more (> 5 parity) children at 2.4% ($n = 9$) attendance. There was a significant relationship between maternal parity and prenatal clinic visit adequacy ($p < .01$).

The analysis also indicated that adequacy in prenatal clinic visits increases with increase in wealth quartiles, and that the number of clinic visits decreases with a decrease in wealth index. Women who are in the richest quartile (23.1%, $n = 86$) have adequate prenatal care visits, compared to 17.4% ($n = 64$) of women in the second quartile who had adequate visits.

Table 10

Relationships Between Selected Variables and Frequency of Prenatal Visits

Variable	Frequency of prenatal visits		χ^2	p-value
	Inadequate	Adequate		
Parity				
None	21 (21.2)	137 (37.2)	11.273	.010
1-2	53 (53.5)	176 (47.5)		
3-4	21 (21.2)	46 (12.5)		
5+	4 (4.0)	9 (2.4)		
Wealth index				
Poorest	24 (24.2)	71 (19.3)	11.996	.017
Second	28 (28.3)	64 (17.4)		
Middle	19 (19.2)	68 (18.5)		
Fourth	10 (10.1)	80 (21.7)		
Richest	18 (18.2)	85 (23.1)		
Media exposure				
Inadequately exposed	18 (18.2)	35 (9.5)	5.830	.016
Adequately exposed	81 (81.8)	333 (90.5)		
Women's autonomy				
Myself	46 (46.5)	187 (50.0)	2.600	.458
My husband/partner	26 (26.3)	73 (19.8)		
Myself and partner jointly	25 (25.3)	104 (28.3)		
Someone else	2 (2.0)	4 (1.1)		
IPV exposure				
No	45 (45.5)	157 (42.7)	0.248	.648**
Yes	54 (54.5)	211 (57.3)		
Age				
19-24	9 (9.1)	39 (10.6)	6.609	.251
25-29	34 (34.3)	156 (42.4)		
30-34	43 (43.4)	130 (35.3)		
35-39	7 (7.1)	27 (7.3)		
40-44	5 (5.1)	16 (4.3)		
45-49	1 (1.0)	0 (0.0)		
Maternal education				
Primary level	6 (6.1)	11 (3.0)	5.521	.063
Secondary level	39 (39.4)	113 (30.7)		
Higher	54 (54.5)	244 (66.3)		
Marital status				
Single/living together	3 (3.0)	16 (4.3)	1.362	.715
Married and living together	94 (94.9)	348 (94.6)		
Divorced/separated	1 (1.0)	3 (0.8)		
Widowed	0 (0.0)	0 (0.0)		
Never married/never lived together	1 (1.0)	1 (0.3)		

Note. Fisher exact test * adequate (≥ 4 visits) inadequate (< 4 visits)

The results showed that inadequacy in prenatal clinic visits occurred more among women in the second (28.3%, $n = 28$) and poorest (24.2%, $n = 24$) wealth quintiles. The association between wealth index and prenatal clinic visit adequacy was statistically significant ($p < .017$). Maternal media (newspaper, radio, and TV) exposure had a significant association with prenatal visit adequacy ($p < .016$). About 90.5% ($n = 333$) of respondents who were adequately exposed to media were more likely to have adequate prenatal clinic visits compared to 9.5% ($n = 35$) of those who did not have adequate exposure to media and who also had adequate prenatal clinic visits. One hundred eighty-seven women who reportedly made their own decisions regarding seeing a medical doctor for routine examinations or care had adequate prenatal care visits, and the same group was also likely to be inadequate in attending prenatal clinic visits at a higher rate (46.5%).

There was therefore no significant association between women's decision autonomy and prenatal clinic visit adequacy ($p = .458$). Among 265 surveyed women who reported exposure to IPV, 57.3% attended prenatal clinic visits adequately. Similarly, 42.7% of those who did not experience IPV attended prenatal clinic visits adequately as well; hence, there was no significant association between IPV exposure and prenatal clinic visit attendance among the Abuja pregnant women surveyed.

About 42.4% ($n = 156$) of mothers within the 25 to 29 age group were more likely to have adequate prenatal attendance, while 4.3 % ($n = 16$) of those 40 to 44 years were less likely to attend adequate prenatal clinic visits. Maternal age had no significant relationship to clinic visit attendance adequacy ($p = .251$). I grouped maternal education

into primary, secondary, and higher (college degree). The data results showed that the higher the educational level, the more the likelihood of attending adequate prenatal clinic visits. Some 66.3% of surveyed women who were likely to have adequate prenatal clinic visits were among those with higher (college) degrees, while only 3.0% ($n = 11$) had only primary-school certificates. However, maternal education was not a significant predictor of prenatal clinic visit adequacy ($p = .063$). When I assessed marital status, the results showed that 94.6% of participants who were married and living together had adequate prenatal clinic visits compared to 4.3% ($n = 16$) of those who were single/living together, 0.8% ($n = 3$) of those who were divorced/separated, and 0.3% ($n = 1$) who were never married/never lived together. The association between marital status and prenatal clinic visit adequacy was not significant ($p = .715$).

I further assessed for any independent association between the IPV types (physical and psychological), the frequency of prenatal care visits, and gestational age at first prenatal care visit (see Table 11). A chi-square test of association showed that respondents who reported no to “He is/was jealous or angry if you (talk/talked) to (other men),” which is a form of psychological IPV, was statistically significant at $p < .043$.

Table 11

Some Forms of IPV and Prenatal Clinic Visits

Physical IPV	Frequency of Prenatal Visits		p-value
	Inadequate	Adequate	
Push you, shake you or throw something at you			
No	90 (21.3)	333 (78.7)	.539
Yes	9 (20.5)	35 (79.5)	
Slap you			
No	83 (20.6)	320 (79.4)	.258
Yes	16 (25.0)	48 (75.0)	
Kick you, drag you, or beat you up			
No	93 (21.4)	341 (78.6)	.428
Yes	6 (18.2)	27 (81.8)	
Punch you with his hand or with something that could hurt you			
No	92 (20.6)	354 (79.4)	.133
Yes	7 (33.3)	14 (66.7)	
Emotional IPV			
Said or did something to humiliate you in front of others			
No	84 (21.1)	314 (78.9)	.507
Yes	15 (21.7)	54 (78.3)	
Insulted you or made you feel bad about yourself			
No	84 (21.4)	308 (78.6)	.459
Yes	15(20.0)	60(80.0)	
He frequently (accuses/accused) you of being unfaithful			
No	94 (21.4)	346 (78.6)	.474
Yes	5 (18.5)	22 (81.5)	
He (is/was) jealous or angry if you (talk/talked) to other men.			
No	87 (22.8)	294 (77.2)	.043***
Yes	12 (14.0)	74 (86.0)	

Table 12 shows the multiple logistic regression model analysis results between prenatal clinic visit adequacy and selected maternal variables (parity, wealth index, media exposure, women's decision autonomy, IPV exposure, maternal age, marital status, and education) that was previously significant and not so significant with chi-square statistics test of association. The overall percentage of correct classification for Block 0 was 78.8% while the Step 1 (Block 1) model showed 80.5%.

Table 12

Prenatal Care Visit Adequacy and Selected Predictor Variables

Variable	OR	P-value	Confidence Interval
Parity			
0	1.737	0.478	0.377-7.991
1-2	0.893	0.879	0.208-3.841
3-4	0.606	0.514	0.134-2.731
5+	(reference group)		
Wealth index			
Poorest	1.408	0.368	0.669-2.963
Second	2.297	0.027	1.101-4.794
Middle	1.457	0.326	0.688-3.089
Fourth	0.646	0.318	0.274-1.522
Richest	(reference group)		
Media exposure			
Adequately exposed	1.999	0.037	1.020-3.916
Inadequately exposed	(reference group)		
Age			
19-24	1.625	0.422	0.497-5.318
25-29	1.721	0.292	0.627-4.719
30-34	1.234	0.806	0.417-3.081
35-39	1.446	0.564	0.413-5.066
40-44	(reference group)		
Maternal education			
Primary	0.685	0.531	0.210-2.234
Secondary	0.826	0.486	0.482-1.415
Higher	(reference group)		
Women's autonomy			
Myself	1.649	0.588	0.269-10.100
My partner	1.158	0.875	0.186-7.212
Myself and partner	1.586	0.623	0.252-9.979
Someone else	(reference group)		
IPV exposure			
Yes	0.795	0.351	0.491-1.287
No	(reference group)		
Maternal education			
Primary	0.685	0.531	0.210-2.234
Secondary	0.826	0.486	0.482-1.415
Higher	(reference group)		
Physical IPV (Being punched)			
No	1.924	0.171	0.755-4.905
Yes	(reference group)		
Emotional IPV (Partner always jealous)			
No	0.548	0.072	0.285-1.055
Yes	(reference group)		

Note. The Nagelkerke *R* is 0.013

The Hosmer-Lemeshow test was not significant ($\chi^2 = 8.440$; $df = 8$; $p = .392$), indicating that the model fit, the reported Nagelkerke R^2 was .12. I also ran a multicollinearity test in SPSS on the independent variables to rule out any correlation between them. The tolerance statistics and VIF were above 0.02 and below 5 for the VIF, indicating that there was no correlation between the independent variables.

Unlike the chi-square test of association, which showed a significant relationship between parity and prenatal visits adequacy ($p < .010$), when I analyzed the variable parity with the multiple regression model, it was not significant. Nonetheless, the regression result showed a nonsignificant association between parity and prenatal visits (AOR = 1.737, 95% CI = 0.377-7.991; $p = .478$) compared to those with more children (the reference group).

In support of the chi-square result, the regression analysis showed a significant relationship between wealth index and prenatal visit adequacy. Women with lower wealth index were more likely to have inadequate prenatal visits (see Table 12); adequate maternal visits increased with a rise in wealth index (AOR = 0.441, 95% CI = 0.212-0.920; $p = .029$). The chi-square test of association also showed a significant relationship between media exposure and prenatal visits; however, to validate this result further, when I ran the regression analysis of media exposure and adequate prenatal visits, a significant association resulted (AOR = 0.488, 95% CI = 0.249-0.957; $p = .037$). Women who had inadequate media exposure were also less likely to have adequate prenatal visits. Media exposure is therefore a predictor of adequate prenatal visits. Women who did experience IPV during the index pregnancy had lower odds (AOR = 0.795; 95% CI = 0.484, 1.270; p

= .351) of having inadequate prenatal attendance than the reference group. When I assessed psychological IPV (partner always jealous), which was significant with chi-square, with a logistic regression, the p value was not significant enough to detect any association (AOR = 0.548; 95 % CI = 0.285-1.055; $p = .072$). IPV, which is the single independent variable of the study, did not have a significant association with the frequency of prenatal care visits. Other covariables that were not significant in the logistic regression model were women's decision autonomy ($p = .588$), maternal age ($p = .422$), maternal education ($p = .531$), and marital status ($p = .368$).

Result Relative to Research Question 1

To what extent is maternal experience of IPV during pregnancy associated with prenatal care attendance after controlling for maternal age, marital status, parity, education, maternal decision autonomy, and wealth index. The dependent variable was prenatal visit attendance adequacy while the independent variable was IPV (IPV).

H₀₁: Maternal experience of IPV during pregnancy is not associated with prenatal care visit attendance controlling for maternal age, education, marital status, parity, maternal decision autonomy, and wealth index.

H_a : Maternal experience of IPV during pregnancy is associated with prenatal care visit attendance controlling for maternal age, education, marital status, parity, maternal decision autonomy, and wealth index.

Seventy-nine percent ($n = 258$) of the surveyed pregnant women had adequate prenatal care visits records, whereas 21.3 % ($n = 99$) of the participants did not have adequate clinic visits during the study period. Most (55.2%) participants disclosed IPV

exposure during the index pregnancy, while 44.8 % of participants were not exposed to IPV during the index pregnancy. However, the chi-square test of association from the two-way table showed that 57.3% ($n = 211$) of the women who indicated exposure to IPV had adequate prenatal care visits and 54.5% ($n = 54$) of the women who were also exposed to IPV were found to be inadequate with prenatal care visits. By the same token, 42.7% ($n = 152$) of the women who were unexposed to IPV had adequate prenatal care visits; also 45.5 % ($n = 45$) of the women who were unexposed to IPV yet had inadequate prenatal clinic visits ($p = .648$). Hence, there was no significant association between IPV during pregnancy and prenatal care visits adequacy. Table 12 contains results of multiple regression analysis adjusting for independent variable (IPV) and covariables that are both significant and non-significant with chi-square test statistics of association. Pregnant women who were exposed to IPV were less likely (OR .795; 95% CI =.484, 1.270; $p = .351$) to have inadequate prenatal care visits compared to those that are unexposed to IPV during the index pregnancy (reference group).

The null hypothesis, therefore, is accepted. There is no significant association between IPV exposure during pregnant and prenatal care visits adequacy among pregnant women attending prenatal care clinics in selected Hospitals in Abuja, Nigeria.

Factors Affecting Prenatal Care Visit Initiation

Table 13 shows the result of chi-square test of association between gestational age at first prenatal care visit and some selected maternal variables. Prenatal clinic initiation adequacy was measured by Abuja pregnant women who commenced prenatal care visits within the first four months (16 weeks) of gestation, while initial clinic visit beyond the

16th week of gestation is considered inadequate initiation of visit. One hundred and thirty-two (55.2%) surveyed women who were exposed to IPV initiated prenatal care early within the 16th week of gestation compared to 58.3% who were exposed to IPV and were not able to initiate early prenatal care visits. Among participants who were unexposed to IPV, 44.8% initiated clinic visits early, while among this unexposed group, about 41.7% were unable to initiate prenatal clinic visits early before the 16th week gestation. IPV during pregnancy was not found to be significantly associated with early prenatal care visit initiation ($p = .514$).

About 41.4% of surveyed women between ages 25 to 29 initiated prenatal clinic early within 16 weeks of gestation, whereas 39.9% ($n = 99$) among the same age group initiated prenatal clinic after 16 weeks gestation. Age was not a significant predictor for early clinic visit initiation ($p = .237$). The majority of participants with a higher degree initiated early 65.7% ($n = 157$) whereas 61.8% ($n = 141$) of the same group did not initiate prenatal visits adequately. Education is not statistically associated with clinic initiation adequacy ($p = .561$). Fifty-two percent 52.4% ($n = 217$) of surveyed women who had adequate media exposure initiated their prenatal clinic early within 16 weeks of gestation, while 47.6% ($n = 197$) of the same group with media adequacy were not able to initiate a clinic visit early. Media exposure was not statistically significant with prenatal clinic initiation ($p = .751$). Other maternal variables that showed non-significant association with prenatal clinic initiation were marital status ($p = .502$), parity ($p = .719$), wealth index ($p = .673$), and women's decision autonomy ($p = .052$).

Table 13
Selected Variables and Adequacy of Prenatal Visit Initiation

Variable	Gestation week of prenatal initiation		χ^2	p-value
	Inadequate	Adequate		
IPV exposure				
No	95 (41.7)	107 (44.8)	0.458	.514**
Yes	133 (58.3)	132 (55.2)		
Age				
19-24	21 (9.2)	27 (11.3)	5.531	.237
25-29	91 (39.9)	99 (41.4)		
30-34	83 (36.4)	90 (37.7)		
35-39	23 (10.1)	11 (4.6)		
40-44	10 (4.4)	12 (5.0)		
Education				
Primary level	10 (4.4)	7 (2.9)	1.156	.561
Secondary level	77 (33.8)	75 (31.4)		
Higher	141 (61.8)	157 (65.7)		
Marital status				
Single/ living together	06 (2.6)	13 (5.4)	2.357	.502
Married and living together	219 (96.1)	223 (93.3)		
Divorced/separated	2 (0.9)	2 (0.8)		
Widowed	0 (0.0)	0 (0.0)		
Never married and never lived together	1 (0.4)	1 (0.4)		
Parity				
None	64 (28.1)	94 (39.3)	6.795	.079
1-2	123 (53.9)	106 (44.4)		
3-4	34 (14.9)	33 (13.8)		
5+	7 (3.1)	6 (2.5)		
Wealth index				
Poorest	48 (21.1)	47 (19.7)	2.344	.673
Second	42 (18.4)	50 (20.9)		
Middle	48 (21.1)	39 (16.3)		
Fourth	43 (18.9)	47 (19.7)		
Richest	47 (20.6)	56 (23.4)		
Women's decision autonomy				
Myself	114 (50.0)	119 (49.8)	0.052	.997
My husband/partner	49 (21.5)	50 (20.9)		
Myself and partner jointly	62 (27.2)	67 (28.0)		
Someone else	3 (1.3)	3 (1.3)		

However, in order to intensify the data results, I assessed for possible independent association with two types (physical and psychological) of IPV (see Table 14); a chi-square test of association indicated that physical IPV “punch you with his hands or something that could hurt you” showed a statistically significant association with prenatal care initiation time ($p < .028$).

Table 14

Maternal Forms of IPV and First Prenatal Visit Initiation

Physical IPV	Gestation at First Prenatal Care Visit		<i>p</i> -value
	Inadequate	Adequate	
Push you, shake you or throw something at you			
No	205 (48.5)	218 (51.5)	
Yes	23 (52.3)	21 (47.7)	.373
Slap you			
No	194 (48.1)	209 (51.9)	
Yes	34 (53.1)	30 (46.9)	.272
Kick you, drag you, or beat you up			
No	207 (47.7)	227 (52.3)	
Yes	21 (63.6)	12 (36.4)	.056
<hr/>			
Physical IPV			
Punch you with his hand or with something that could hurt you			
No	213 (47.8)	233 (52.2)	
Yes	15 (71.4)	6 (28.6)	.028**
Said or did something to humiliate you in front of others			
No	193 (48.5)	205 (51.5)	
Yes	35 (50.7)	34 (49.3)	.416
Insulted you or made you feel bad about yourself			
No	186 (47.4)	206 (52.6)	.109
Yes	42 (56.0)	33 (44.0)	
<hr/>			
Emotional IPV			
He frequently (accuses/accused) you of being unfaithful			
No	215 (48.9)	225 (51.1)	
Yes	13 (48.1)	14 (51.9)	.551
He (is/was) jealous or angry if you (talk/talked) to other men			
No	188 (49.3)	193 (50.7)	
Yes	40 (46.5)	46 (53.5)	.361

Table 15 shows the multiple logic regression model analysis result between prenatal clinic visits initiation time and independent variable (IPV) with other selected maternal variables (age, education, media exposure, marital status, parity, wealth index, and women's decision autonomy) that were not significant with clinic initiation time in chi-square test of association. The overall percentage of correct classification in Block 0 is 52.7% while the Step 1 model indicated 58% correct classification. The Hosmer-Lemeshow test was .521, and reported Nagelkerke $R^2 = 0.040$; this p -value is less than 0.05, thus indicating model fit for predicting outcome variable.

Surveyed women who were not exposed to IPV had higher odds (OR = 1.169; 95% CI = .797-1.716; $p = .423$) of initiating prenatal clinic visit early within the 16th week of gestation compared to those who were exposed to IPV during pregnancy (reference group). Though some form of relationship exists between IPV exposure during pregnant and clinic initiation time, the association was not significant.

In order to validate the significant association with chi-square between physical IPV and prenatal care clinic initiation time, logistic regression analysis suggests that pregnant women who were unexposed to IPV in form of being punched with hand by their partners are more likely to have initiated prenatal care clinic early within the 16 weeks of gestation compared to those who were exposed to IPV during pregnancy (OR= 2.735; CI; 95 % 1.042-7.177, $p < .041$).

Table 15

Prenatal Visit Initiation Adequacy and Selected Variables

Variable	OR	P-value	Confidence Interval
IPV exposure			
No	1.169	0.423	0.797-1.716
Yes	(reference group)		
Age			
19-24	0.855	0.777	0.289-2.526
25-29	0.787	0.618	0.307-2.016
30-34	0.842	0.714	0.335-2.113
35-39	0.388	0.103	0.124-1.211
40-44	(reference group)		
Maternal education			
Primary	0.650	0.429	0.224-1.889
Secondary	0.832	0.402	0.541-1.280
Higher	(reference group)		
Media exposure			
Inadequately exposed	0.989	0.971	0.558-1.753
Adequately exposed	(reference group)		
Marital status			
Single/living together	2.133	0.620	0.107-42.565
Married/living together	0.946	0.969	0.055-16.188
Divorced/separated	1.420	0.845	0.042-48.220
Widow	(reference group)		
Parity			
0	1.627	0.421	0.497-5.330
1-2	0.930	0.903	0.290-2.984
3-4	1.100	0.879	0.322-3.753
5+	(reference group)		
Wealth index			
Poorest	0.842	0.573	0.464-1.530
Second	0.997	0.992	0.548-1.814
Middle	0.641	0.137	0.356-1.152
Fourth	0.885	0.680	0.495-1.582
Richest	(reference group)		
Women's autonomy			
Myself	1.148	0.875	0.206-6.391
My partner	1.131	0.889	0.201-6.368
Myself and partner	1.090	0.922	0.193-6.171
Someone else	(reference group)		

Age was not found to be significant either. Participants whose age group were between 19 and 24 years had higher odds (OR = 0.855; 95 % CI = 0.289-2.526; $p = .777$) of initiating prenatal clinic early than the older groups (reference group). In addition, the likelihood of having an adequate prenatal visit initiation increases with the level of education as the odds ratio increases with educational level. Primary school level

participants had lower odds (OR = 0.650; 95% CI = 0.224-1.889; $p = .429$) than those with secondary school degree (OR = 0.832; 95% CI = 0.541-1.280; $p = .402$) and those with higher degrees (reference group). Participants who were not adequately exposed to media had higher odds (OR = 0.989; 95% CI = 0.558-1.753; $p = .971$) of initiating prenatal clinic before 16th week of gestation than those who are adequately exposed to media (reference group).

Among surveyed women, those who were married and living together were less likely to have adequate prenatal visit initiation time (as their odds ratio is less than 1) (OR = 0.946; 95% CI = 0.055-16.188; $p = .969$) than those in the other groups: single and living together (OR = 2.133; 95% CI = 0.107-42.565; $p = .620$); divorced/separated (OR = 1.420; 95% CI = 0.42-48.220; $p = .845$) and the reference group. Women who were currently pregnant but had zero children previously were 1.6 times (OR = 1.627; 95% CI = 0.497- 5.330; $p = .421$) more likely to have adequate prenatal clinic visit initiation than the reference group. Surveyed women who were in the second wealth quantile had higher odds (OR = 0.997; 95% CI = 0.548-0.1.814; $p = .992$) of initiating prenatal clinic visits early than the reference group. Likewise, women who make self-decisions as to when to seek medical or visit a health care facility were found to be more likely (OR = 1.148; 95% CI = 0.206- 6.391; $p = .875$) to have adequate prenatal visit initiation than the reference group.

Results Relevant to Research Question 2 (RQ2)

To what extent is maternal experience of IPV during pregnancy associated with prenatal care clinic commencement time within the first trimester controlling for maternal

age, marital status, parity, education, maternal decision autonomy, and wealth index. The dependent variable was prenatal visits initiation adequacy while the independent variable was IPV (IPV).

H₀₂: Maternal experience of IPV is not associated with prenatal care clinic commencement time within the first trimester controlling for maternal age, marital status, parity, education, maternal decision autonomy, and wealth index.

H_{a2}: Maternal experience of IPV is associated with prenatal care clinic commencement within the first trimester controlling for maternal age, marital status, parity, education, maternal decision autonomy, and wealth index.

Among surveyed participants (pregnant women), 51.2% ($n = 239$) initiated their prenatal clinic visits early within the recommended 16th week of gestation, whereas 48.8%; ($n = 228$) initiated their prenatal clinic visits late after the 16th week (fourth month) of gestation. The chi-square test of association from the two-way table revealed that 55.2% ($n = 132$) of those who reported IPV exposure during the index pregnancy initiated their prenatal clinic visits early against 58.3% ($n = 133$) that also reported IPV exposure but were unable to initiate prenatal clinic early within the 16th week of gestation. Similarly, among the unexposed participants, 44.8% ($n = 107$) initiated their prenatal clinic visits early within the 8th to 16th week of gestation, whereas among the same unexposed group, 41.7% ($n = 95$) of women were not able to initiate their prenatal clinic visits early as recommended. IPV was not significantly associated ($p = .458$) with prenatal care clinic initiation when adjusting for other covariables that were both significant and not quite significant previously in the chi-square test of association from a

two-way table. IPV was also not significant ($p = .423$) in multiple logistic regression analysis controlling for all the covariables regardless of their significance in the chi-square test. Accordingly, I accepted the null hypothesis: there is no significant association between IPV exposure during pregnancy and prenatal clinic visits initiation or commencement among pregnant women attending prenatal care in selected hospitals in Abuja, Nigeria.

Summary of Findings

IPV during pregnancy appears not to be a significant predictor of adequate prenatal clinic attendance. Over 55% (55.2%) of women surveyed reported exposure to IPV during the index pregnancy. However, women who were not exposed to IPV during the index pregnancy had lower odds of having adequate prenatal attendance compared to women who were exposed to IPV. Maternal parity, wealth index, and maternal media exposure were significant predictors of adequate prenatal clinic visit and initiation among study participants in the chi-square test of association analysis. Women who had fewer children were more likely to have adequate prenatal care visits compared to those who had more children. Maternal parity was significant with prenatal clinic visit adequacy. Analysis also indicated that adequacy in prenatal clinic visits increases with increase in wealth quantiles as number of clinic visits decreases with decrease in wealth index. Women within the lower wealth quantiles are more likely to have inadequate prenatal visits. A chi-square test of association also showed that participants who had adequate media exposure were more likely to have adequate prenatal clinic visits compared to those with inadequate exposure to media.

IPV during pregnancy was not a significant predictor of prenatal clinic commencement (initiation) adequacy. Multiple logistic regression analysis revealed that surveyed women who were not exposed to IPV had higher odds of initiating prenatal clinic visits early within the 16th week of gestation than those who were exposed to IPV during pregnancy. Results also showed that among surveyed women, those who were married and living together are less likely to have adequate prenatal visits initiation than those in other marital categories as their odds ratio is less than 1. Women who are currently pregnant but had zero children previously are 1.6 times more likely to have adequate prenatal clinic visit initiation than women in other groups. Surveyed women who were in the second wealth quantile had higher odds (OR = 0.997; 95% CI = 0.548-0.1.814; $p = .992$) of initiating prenatal clinic visits early than others. Likewise, women who made self-decisions as to when to seek medical care were found to be more likely to have adequate prenatal visit initiation than women whose decision to seek medical attention depends on their partner/spouse or others.

Having reviewed the research results in light of the hypothesis, I then conclude that IPV exposure during pregnancy has no significant association with either prenatal visit adequacy or prenatal visit initiation adequacy among Abuja women during index pregnancy. Maternal age, education, and women's decision autonomy were not associated with adequacy in prenatal visits or prenatal visit initiation adequacy. In Chapter 5 I will present the detailed discussion and interpretation of result findings, future study recommendations, and social change implication of this study.

Chapter 5: Discussion, Recommendations, and Conclusions

This chapter encompasses the interpretation, discussion, and recommendations from the findings of a population-based quantitative research study that addressed possible association(s) between IPV during pregnancy and prenatal clinic visits and gestational age at first care initiation among pregnant women in Nyanya and Gwarinpa General Hospitals in Abuja. Nigeria remains among the Sub-Saharan African countries with a sustained high prevalence in the IPV rate and bears the greatest health burden (Shamu et al., 2011). Abuja, the nation's capital, contributes to a greater extent this burden with a higher IPV prevalence during pregnancy as shown by several studies: Eftie and Salami (2007; 37.4%) and Arulogun and Jidda (2011; 43%). To the best of my knowledge, there has not been any prior research on the association of IPV during pregnancy and prenatal visits or care initiation in Abuja. In this chapter, I also present the study's social change implication as well as recommendations and future research prospects.

Summary of Key Findings

I addressed the two main research questions with consideration for prenatal clinic visit frequency and IPV exposure during pregnancy, which I coded into adequate for four visits or more and inadequate for less than four visits thorough the index pregnancy. I also considered the gestational age (trimester) in which mothers initiated prenatal clinic care in relation to IPV exposure. Prenatal initiation within the first 16 weeks of gestation was adequate, whereas prenatal clinic initiation beyond the first 16 weeks was inadequate. I assessed IPV exposure as exposure to physical violence (eight items) or

psychological violence (nine items) during the index pregnancy. I addressed other maternal variables such as age, marital status, parity, education, women's autonomy, media exposure, and wealth index as well. The findings from the research data showed that IPV exposure during pregnancy is not a significant predictor of either prenatal clinic visits (attendance) or clinic initiation time. The results also suggested that being pregnant may not be predictive of IPV exposure among studied women. However, maternal media exposure, parity, and wealth index had significant associations with prenatal clinic visit frequency (adequacy). The results also showed no association between IPV exposure and maternal age, education, marital status, or autonomy during pregnancy among study participants. Finally, sociodemographic changes in city living, which may result in greater media exposure, could be eroding the historic effect IPV exposure has had on prenatal care visits and clinic initiation as reported in previous studies in Nigeria. Finally, the study results revealed the existence of a counterintuitive relationship between IPV exposure during pregnancy and prenatal clinic visit attendance.

Interpretation of Findings

The IPV prevalence rate among the surveyed women was 55.2% during index pregnancies in two government-owned hospitals with free access to care. The rate was similar to but higher than that recorded in previous studies conducted in Abuja. In 2007, IPV exposure during pregnancy in Abuja was 37.4% (Efetie & Salami, 2007). Another study in Abuja revealed a higher IPV rate of 43% during pregnancy among women attending prenatal clinics in six different government- and privately-owned hospitals in 2011 (Arulogun & Jidda, 2011). The prevalence of IPV in Ethiopia is higher at 75%

(Mohammed et al., 2017), and it is lower in Rwanda, where prevalence ranges from 9.7% for physical IPV to 20% for psychological IPV (Rurangirwa et al., 2016).

The analysis indicated that among the exposed women, emotional IPV ranked highest with 51.8% during the index pregnancy, followed by physical IPV at 26.1%. These results were consistent with previous studies in Abuja. In the study conducted by Eftie and Salami (2007), most participants (66.4%) experienced psychological IPV, followed by physical IPV exposure (23.4%). The steady increase in prevalence in these Abuja studies could suggest an increasing sociodemographic (urban) effect on the acceptance and disclosure of IPV among city dwellers. In the 2008 NPC, demographic location had a negative influence on IPV prevalence by 30.2% (NPC, 2008). For a small city like Abuja, such a difference between residents could be due to differences in social belief and class on what constitutes IPV and what is worthy of disclosing or reporting by victims. It could also be a mere difference in prevalence. Among the IPV-exposed respondents, the exposure commenced before the index pregnancy in 82.2% ($n = 182$) of cases and is still ongoing in all those exposed to it. With an IPV prevalence rate of 55.2%, it is paramount that all forms of IPV assessment be included as part of the initial standard health screening among women seeking prenatal care in all hospitals in Abuja.

Fifty-seven percent ($n = 211$) of surveyed women who reported exposure to IPV during the index pregnancy attended prenatal care visits four times or more (≥ 4), which I coded as adequate based on WHO recommendations for routine visits in an uncomplicated pregnancy. The chi-square test of association and the multiple logistic regression model analysis results showed no statistically significant association between

physical and psychological IPV and prenatal care visit attendance. The logistic regression model showed that women who experienced IPV during the index pregnancy are less likely to have inadequate prenatal visits (*AOR* 0.784; 95% CI = 0.484, 1.270; *p* = 0.324) than those who did not experience IPV (reference group). This outcome is unexpectedly inconsistent with previous studies on IPV and prenatal care use (Dietz et al., 1997; Koski et al., 2011; McCloskey et al., 2007; Rahman et al., 2012), but surprisingly similar to a recent study that addressed IPV and its associated risk factors and relationships during pregnancy in Rwanda and found no association between IPV during pregnancy and prenatal care attendance (Rurangirwa et al., 2016). Like the Abuja study, IPV-exposed women were more likely to seek emergency medical services in the United States (Rhodes et al., 2011), and they were 1.5 times more likely to have visited a medical doctor or native doctor for chronic disease tests such as HIV/AIDS in Southern Africa (Gass et al., 2010).

In a different but similar study, IPV-exposed women were 2.3 times more likely to have received pap smear screening and a clinical breast examination (Lemon et al., 2002). These findings were also consistent with the present study. Among the women I surveyed, about 50% make their own decisions as to when to seek medical assistance, and 86.3% also have good knowledge of where to receive medical aid. The fact that over 88% of the women I surveyed reported having adequate media exposure and that 86% reported good knowledge of where to obtain family planning-related services within their community could have been a supporting reason for adequate prenatal visit frequency

despite exposure to IPV and the nonsignificant association I found between IPV exposure and prenatal care visits.

The ability of IPV-exposed pregnant women to attend prenatal care visits regularly should not be taken literally, in that it may suggest a way of concealing abuse due to policies and laws in Nigeria that trivialize abuse and its victims (Linos et al., 2013), coupled with the stigmatization victims face from fellow women who justify IPV and frown at its disclosure (Makama, 2013). In such cases, women suffering partner violence will now find it difficult to disclose or report abuse. It could be also due to the fact that surveyed women were all educated at different levels with jobs/businesses and adequate media exposure; otherwise, Nigerian culture still remains very patriarchal in nature with high IPV tolerance (Adebayo & Kolawole, 2013; Linos et al., 2013; Makama, 2013). There should be a standardized protocol that will prompt IPV screening among pregnant women seeking prenatal care within the health care system. The health system should also offer some sort of psychosocial support and follow up of victims through the postpartum period to mitigate some IPV-associated risks during pregnancy, the postpartum period, and the child's development.

When I measured the frequency of prenatal care visits with some maternal characteristics in a chi-square test of association, maternal parity (women with none or fewer children) had a statistically significant association with frequency of prenatal visits ($p < .010$). The result here is not consistent with the outcome of a similar study that showed women with more children as less likely to attend sufficient prenatal care visits or to seek trained medical professionals during delivery (Rahman et al., 2012).

Exposure to media among surveyed women also had a significant association with prenatal care visit frequency ($p < .016$). To validate this result further, a multiple regression analysis of media exposure and prenatal care visits frequency showed that women who had inadequate exposure to the media were less likely to attend clinic visits adequately ($OR = 0.488$, 95% CI = 0.249-0.957; $p = .037$). This is a clear indication that maternal media exposure is a prime determinant of maternal use of prenatal services.

It has been an established fact based on other studies that IPV exposure cuts across cultures and socioeconomic status (Adebayo & Kolawole, 2013; WHO, 2012). However, one cannot overemphasize the part media exposure plays in the gap between IPV among women and healthcare seeking, especially prenatal care visits. In light of the current study, despite such a high IPV prevalence among the respondents in Abuja, the results still showed inadequate prenatal care visits among IPV-exposed participants during the index pregnancy. Information through media (newspaper, radio, and TV) exposure bridged the gap regardless of socioeconomic or sociodemographic setting. This outcome is consistent with another study in which media exposure had links to higher healthcare use during prenatal care and child delivery in Bangladesh (Rahman et al., 2012). The results also showed a significant association between wealth index and prenatal care visit frequency ($p < 0.017$) in cross tabulation. Respondents in the lower wealth index were more likely to have inadequate prenatal care visits; adequacy in prenatal care clinic visits increases with a rise in wealth index ($AOR = 0.441$, 95% CI = 0.212-0.920; $p = .029$). This outcome is similar to the outcome Obiyan and Kumar's (2015) study in Nigeria, which used data from three editions of the NPC (2008) to assess

the association between maternal wealth index and use of maternal health care services. Obiyan and Kumar found that women within the lower wealth index were less likely to use orthodox facilities than those within the higher wealth index.

Association Between IPV During Pregnancy and Prenatal Care Visit Initiation

The percentage of respondents who experienced IPV and entered their prenatal clinic care visit within the first 16 weeks of gestation was 55%, whereas, 58% initiated prenatal care beyond the 16th week of pregnancy. Certainly, there is a notable association between IPV exposure during pregnancy and prenatal care visit commencement time; however, the relationship was not statistically significant in the chi-square test of association ($p = .514$). Participants who were not exposed to IPV during pregnancy had higher odds of initiating prenatal care clinic within the recommended 16th week of gestation than the reference group ($AOR = 1.169$; $95\% CI = 0.797-1.716$; $p = .423$). This result is contrary to a new study in Ethiopia that indicated that IPV-exposed (psychological) women are less likely to initiate early prenatal clinic visits than unexposed women (Mohammed et al., 2016). However, it is also contrary to the results of other studies concerning prenatal care initiation time and IPV exposure (Dietz et al., 1997; Koski et al., 2011; NPC, 2013). The disparity in these study outcomes might be due to variations in the sociocultural environments of the places of study.

The overall results of the present study unveil the possibility of other factors that could independently play much stronger roles in healthcare use during pregnancy than IPV exposure in certain settings, such as the effect of deep-rooted sociocultural attitudes of women concerning IPV against women in Nigeria (Antai & Antai, 2008; Uthman et

al., 2009). IPV perception, justification, and wide acceptance even among women may greatly work against creating an effective environment to mitigate IPV prevalence against women (Linos et al., 2013).

Maternal age, educational level, marital status, and media exposure did not have significant associations with prenatal care initiation. Maternal age, marital status, education, media exposure, and wealth index have historically had roles in healthcare use among pregnant women in several other studies (Koski et al., 2011; NPC, 2013; Rahman et al., 2012). It might be possible that surveyed women had adequate information on the proper gestational age at which to initiate prenatal clinic and the health benefits of commencing prenatal clinic as early as required. Result could also be due to the fact that participants in the current study were educated with good job (s) and business that played significant role in the study outcome.

Interpretation in Relation to the Theory

This study result is in line with, and supported by, social learning theory. Social learning theory emphasizes the external environment as a focus on an individual source of observational learning (Schiavo, 2007). Social learning theory explains human behavior as a cyclic, reciprocal interaction between cognitive, behavioral, and environmental interference (Bandura, 1977). Based on this theory, the indicated association between IPV (sociocultural factor) during pregnancy and prenatal care visit attendance (behavioral factor) and environmental interference explained in this study as the urban setting (Abuja city) and media exposure played out to a greater degree the outcome I observed in the study. According to the data, the degree of IPV perception,

acceptance, and justification in Nigerian culture, even among women, as reported by previous studies, may explain the nonsignificant association between IPV and frequency of prenatal care visits or commencement time despite a higher prevalence of IPV among studied women.

Implications of the Study

The study is the first cross-sectional quantitative research in Abuja that has assessed the association between IPV during pregnancy and prenatal care visit attendance. To the best of my knowledge, the outcomes of this study and the study by Rurangirwa et al. (2016) in Rwanda are contrary to the result of most studies (Dietz et al., 1997; Koski et al., 2011; McCloskey et al., 2007; Rahman et al., 2012) across other countries of the world on the part IPV plays in prenatal clinic visit attendance and entry. Historically, IPV during pregnancy has caused late entry into prenatal care and underuse of prenatal services to promote healthy pregnancy and delivery. Rather, the data have pointed at media exposure, parity, wealth index, and to some extent education as significant predictors of prenatal care visits. The outcome will inform public health practitioners to shift focus and think out of the box on real predictors of prenatal care service use and other well woman services in Nigeria.

The study results also revealed about an 18% increase in pregnancy-related IPV prevalence in Abuja based on previous studies. In 2007, IPV prevalence in Abuja was 37.4%, and in 2011, a prevalence of 43% was reported by another study (Arulogun & Jidda, 2011; Efetie & Salami, 2007). Such a consistent steady rise is a concern and calls for a public health intervention in Abuja. What makes these results reliable is that they

came from the same or similar setting in Abuja (government hospitals) with full and free access for the city residents. The high prevalence rate I found in this study calls for a concerted effort of government at all levels (local, state, and federal), and professionals in public health and legal services to work out policy that can mitigate this rising tide of IPV in Abuja. It has stimulated the need for health professionals to prioritize IPV screening and education at any entry point for women's health services.

The results also uncovered an odd relation between IPV prevalence and prenatal clinic attendance in the sense that despite exposure to IPV, pregnant women in Abuja were able to attend to prenatal care clinic and to initiate care early. This impressive revelation has underscored the benefits of urban setting, education, and adequate media exposure for prenatal clinic visits and the use of related services. This also suggests and calls for further study among pregnant women in a rural setting, those who are less educated, in a lower income bracket, and with less media exposure.

The study outcome also suggests the need for a sensitization campaign on the importance of using available maternal health services because of the percentage of women (67%) who reported an inability to obtain a routine annual physician check-up in the past year. I observed during the survey that most women were still very reluctant to disclose their IPV exposure status, wanting to maintain the status quo, which is in line with the deep-rooted culture of IPV acceptance and justification that other studies have reported (Linos et al., 2013; Makama, 2013). The current study supports others and calls for public health initiatives in implementing standardized IPV screening and counseling during prenatal clinic visits in Abuja, Nigeria.

Social Change Implications

The study results generated more insight on the trending increase in the IPV rate and its counterintuitive relationship with prenatal care visits. This knowledge will guide discussions on the need for standardized IPV abuse screening and evaluation at all levels of healthcare entry for Abuja women. Governments should also consider legislation that requires sensitization training for all health workers, especially community health education workers, on identifying and reporting victims for evaluation and management by trained professionals. The social change implications of these results will add to the body of literature by highlighting a deeper understanding of societal patriarchy and sexual inequality that plays a significant role in IPV in Abuja, and Nigeria in general (Makama, 2013).

The results have shown that Abuja women were very receptive to all forms of media, so public health programs should seize the opportunity to leverage media platforms for open discussion, sensitization, and education on the adverse health effects of gender-based violence. Governments should also consider legislation on re-education and treatment programs for IPV offenders as well as the establishment of programs for child victims of IPV.

Methodological Considerations/Limitations

The study result reemphasized the known limitations noted earlier. The study was focused on pregnant women in selected Abuja hospitals that were fairly representative of the population but may not be generalized to all the pregnant women in Nigeria. In addition, women who seek prenatal care services during pregnancy may have different

exposures to IPV, as compared to those who do not receive any kind of prenatal service. Also, the eligibility criteria excluded from the study women with no formal education, who cannot read and write at a standard sixth grade level. As a cross-sectional design, the study is limited in tracking time variations and can only be used to draw casual relationships between the variables of interest because the study participants are pregnant women only, excluding women who are not currently pregnant, or have never been pregnant. The research encountered a minimal non-response rate; however, as a self-reported event, owing to the socio-cultural beliefs and sensitive nature of IPV in Abuja, a possibility of under-reporting IPV exposure resulted in less precise analysis. Nevertheless, data collection was carefully carried out by the researcher, who is a nurse and had worked in such settings for over 30 years. Respondents to the study were at varied stages of gestation, making it tasking for the researcher to track clinic visit adequacy based on individual gestational age for a precise analysis.

Finally, participants are drawn from selected government hospitals, thus excluding opinions of potential candidates who attend private clinics, are stay-at-home mothers, or use birthing centers for delivery. Therefore, results of this study may not be a true representation of prevalence and cannot be generalized for the entire country or other states in Nigeria. The strength of the current research is still based on the fact that two government hospitals that offer full and free access to care were used, coupled with the large sample size, high response rate, and use of a research instrument that was internationally recognized for all forms of IPV assessment, and has had proven reliability over time.

Recommendation for Further Study

The unexpected outcome of negative association between IPV during pregnancy and prenatal care visits found in this study provokes further research. Research results call for further study on socio-demographic interferences on healthcare use as well as cultural beliefs that influence the uptake of healthcare services amidst IPV exposure during pregnancy in Abuja. A similar study with a qualitative observation of pregnant women in rural settings with no formal education and low income would be a good comparison to the current study. This result outcome also calls for a study that will change the contextual focus from a social learning theory to a social ecological model, in order to harness ecological interaction at the intrapersonal, interpersonal, and physical environment, and policy factors that have shown to be possible predictors of prenatal care services use. A retrospective evaluation study may also be needed to assess IPV exposure during pregnancy and birth outcomes among exposed mothers. Finally, despite all studies conducted in Abuja, little or nothing has been done on healthcare providers' competency evaluation in handling sensitive issues as IPV, knowing full well that the healthcare work force are themselves from the same culture of insensitivity to partner violence.

Conclusion

IPV-related crimes exist and are frequent in Abuja. There is such a steady increase in IPV that it is becoming a public health concern. Yet, the association between IPV exposure during pregnancy and prenatal care visit adequacy was counterintuitive. Deep-rooted socio-cultural beliefs' influence on IPV acceptance and justification has shaped individual mindsets on what to accept and endure in such relationships. Future

research is necessary to assess existing health system standards and policies to sensitize and educate health professionals and the public on the adverse health outcomes of IPV during pregnancy, labor, and child development.

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Appendix A: Participants' Questionnaire

IPV during Pregnancy and Prenatal Care Attendance questionnaire instrument
"Adapted from the 2008 Nigeria Demographic and Health Survey"

Instructions

Thank you for your interest in being part of this survey. The form will take approximately 45-60 minutes to complete. You are required to use a pen or pencil to tick or write in your answer correctly and completely to the best of your knowledge.

Please DO NOT write your name or your address in the form, as the researcher wants to keep your response as anonymous as possible.

Upon completion, place your completed form in an envelope provided and hand it to the researcher who is on stand-by to pick your completed survey.

Thank you.

Demographic Information

1. How old are you?

- (a) 19 – 24yrs []
- (b) 25 – 29yrs []
- (c) 30 – 34yrs []
- (d) 35 – 39yrs []
- (e) 40 – 44yrs []
- (f) 45 – 49yrs []

2. Are you married?

- (a) Single or living together []
- (b) Married and living together []
- (c) Divorced/separated []
- (d) Widowed []
- (e) Never married and Never lived together []

3. Did you go to school?

- Yes []
- No []

4. What is the highest level of school you attended?

- (a) Primary []
- (b) Secondary []
- (c) Higher []

5. Have you done any work in the last one year?

- (a) Yes []
- (b) No []

6. If yes, to Question 5, what kind of work do you do?

- (a) Business woman
- (b) Artisan
- (c) Paid job

7. If No to Question 5, why have you not worked in the last one year?**8. How many times do you read newspaper or magazine?**

- (a) Almost every day []
- (b) At least once a week []
- (c) Less than once a week []
- (d) Not at all []

9. How many times do you listen to the radio?

- (a) Almost every day []
- (b) At least once a week []
- (c) Less than once week []
- (d) Not at all []

10. How regular do you watch TV?

- (a) Almost every day []
- (b) At least once a week []
- (c) Less than once a week []
- (d) Not at all []

11. What is your religious background?

- (a) Catholic []
- (b) Other Christian []
- (c) Islam []
- (d) Traditionalist []

12. What is your ethnic group?

- (a) Igbo []
- (b) Yoruba []
- (c) Hausa []

- (d) Fulani []
 (e) Other []

Household Wealth Index

13. How do you and your family get water for drinking/cooking or washing?

- (a) Piped/city water supply []
 (b) Bore hole []
 (c) Dug well []
 (d) Tanker truck []

14. What kind of toilet facility do you and your family always use?

- (a) Water System []
 (b) Pit Latrine []
 (c) None []

15. Do you and your family share your toilet with others?

- (a) Yes []
 (b) No []

16. How many rooms do you have in your house, including rooms for sleeping and all other rooms? Select one.

- (a) One room shared kitchen, toilet and bathroom []
 (b) One room self-contained flat []
 (c) Two rooms shared kitchen, toilet and bathroom []
 (d) Two rooms self-contained flat []
 (e) Three to five rooms flat/house []

17. Does your household have the following items which are in good working condition?

Select Yes or No.

Answer	[Yes]	[No]
(a) Air conditioner	[]	[]
(b) Bicycle / motor cycle	[]	[]
(c) Boat	[]	[]
(d) Canoe	[]	[]
(e) Car / Truck	[]	[]
(f) Electric iron	[]	[]
(g) Electricity	[]	[]
(h) Fan	[]	[]
(i) Generator set	[]	[]
(j) Radio	[]	[]

- (k) Refrigerator [] []
(l) Television set [] []

18. Does any member of your family own any kind of land?

- (a) Yes []
(b) No []

Pregnancy Questions

19. How many times have you been pregnant?

- (a) Once []
(b) 2 times []
(c) 3 times []
(d) 4 times []
(e) 5 times or more []

20. Have you lost any pregnancy in the past?

- (a) Yes []
(b) No []

21. How many children do you have?

- (a) 0 []
(b) 1-2 []
(c) 3-4 []
(d) 5+ []

22. How many weeks pregnant are you?

- (a) 13-27 weeks []
(b) 28-32 weeks []
(c) 36-40 weeks []

23. How many times have you received antenatal care for this pregnancy?

- (a) First visit []
(b) Second visit []
(c) Third visit []
(d) Fourth []
(e) More than 4 visits []

24. In this current pregnancy, how many weeks pregnant were you when you first registered for antenatal care?

- (a) 8 weeks to 16 weeks []
(b) After 16th weeks []

25. When are you expected to deliver your baby?

- (a) Month of delivery []

(b) Year of delivery []

Maternal Healthcare-Seeking Behavior

26. Do you know where you can get family planning?

(a) Yes []

(b) No []

27. Within the last one year, have you ever used any of these methods to protect yourself from getting pregnant?

(a) No sex Yes [] No []

(b) Pills Yes [] No []

(c) Intrauterine device (coil) Yes [] No []

(d) Breastfeeding Yes [] No []

(e) Condom Yes [] No []

28. Who helps you decide when to go to the hospital to see a doctor?

(a) Myself []

(b) Your Husband/Partner []

(c) Myself, Husband/Partner jointly []

(d) Someone else []

29. For the past one year, have you visited a doctor for your check-up such as breast examination, Pap smear, HIV/AIDs, or STDs test?

(a) Yes []

(b) No []

Physical/Emotional IPV Questions

Now I would like to ask you questions about some situations which happen to some women in a relationship. Please tell me if these apply to your relationship with your current/last husband or partner.

30. Since this pregnancy, has your current or last husband/boyfriend or partner done any of the following to you?

(a) Push you, shake you or throw something at you Yes [] No []

(b) Slap you Yes [] No []

(c) Twist your arm or pull your hair Yes [] No []

(d) Punch you with his hand or with something that could hurt you Yes [] No []

(e) Hurt you Yes [] No []

(f) Kick you, drag you, or beat you up Yes [] No []

(g) Try to choke you or burn you on purpose Yes [] No []

- (h) Threaten or attack you with a knife, gun, or any other
 weapon Yes [] No []

31. Since this pregnancy, has your current or last husband/boyfriend or partner done any of the following things to you?

- (a) Said or did something to humiliate you in front of
 others. Yes [] No []
- (b) Threatened to hurt or harm you or someone close
 to you. Yes [] No []
- (c) Insulted you or made you feel bad about yourself. Yes [] No []
- (d) He (is/was) jealous or angry if you (talk/talked) to
 other men. Yes [] No []
- (e) He frequently (accuses/accused) you of being
 unfaithful. Yes [] No []
- (f) He (does/did) not permit you to meet your
 family / friends. Yes [] No []
- (g) He (does/did) not permit you to go to the doctor. Yes [] No []
- (h) He (tries/tried) to limit your contact with your
 family. Yes [] No []
- (i) He (insists/insisted) on knowing where you are
 at all times. Yes [] No []

32. How long after you got married to your current or last husband/boyfriend or partner did (this/any of these) first happened to you?

- (a) Since this pregnancy []
- (b) Before marriage or before living together []
- (c) After marriage or after living together []
- (d) Not applicable []

Note: If you would like to speak to someone about your experiences or need additional help with your care, please contact the researcher

Dorothy Ezekwe-Anyia

Appendix B: Invitation to Participate

Invitation to Participate in a Study

Dear,

You are receiving this letter because you may qualify to participate in a research study that is going to be conducted at Nyanya and Gwarinpa general hospital prenatal clinics in Abuja from October 5th to December 21st 2016. The study will be conducted during your routine clinic visit, before or after you have seen your clinician. It is a very important study as it will guide the researcher and the government understands in more details the association between intimate partner violence during pregnancy and prenatal clinic attendance among pregnant women in Abuja. Your choice to participate or not is completely voluntary and will not affect the care you are currently receiving at the clinic. However, in order to join, you must meet certain criteria set by the researcher as listed below

Participation Qualification

- ✚ You must be residing in Abuja
- ✚ You must be a woman in childbearing age of 19 to 49 years
- ✚ You must be at least 13 weeks pregnant and above
- ✚ Receiving Prenatal care at Nyanya or Gwarinpa General hospital clinics
- ✚ Able and willing to acknowledge the consent form and complete the questionnaire

The consent form will have more information about the study. The questions will take about 45 to 60 minutes to complete. Answers you gave will not be traced to you because you will not be required to write your name, address or phone number on the form. If you need help when completing the form, the researcher will be around to assist you. There is no risk or benefit attached to the study as you are free to withdraw at any time. However, the researcher will be offering an appreciation gift of healthy snack after you complete the form.

If you have any question and need to contact me, Please feel free to call XXX

Researcher Dorothy Ijeoma Ezekwe-Anyia

Email: XXX@waldenu.edu