ASSOCIATION BETWEEN EXPERIENCE OF INTIMATE PARTNER VIOLENCE AND CONTRACTING SEXUALLY TRANSMITTED INFECTIONS AMONG CURRENTLY MARRIED WOMEN IN NIGERIA

BY

SIGBEKU, Oluwakemi Anne (M.B; B.S IB)

Matriculation Number: 85675

A THESIS SUBMITTED TO THE DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS, FACULTY OF PUBLIC HEALTH, COLLEGE OF MEDICINE,

UNIVERSITY OF IBADAN

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN EPIDEMIOLOGY AND MEDICAL STATISTICS

APRIL, 2014

DECLARATION

I hereby declare that this work was done by me under supervision and that it has not been submitted in part or in full for any other examination.

Oluwakemi Anne SIGBEKU

CERTIFICATION

I hereby certify that this work was carried out by Oluwakemi Anne Sigbeku in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan, under my supervision.

Dr.Olufunmilayo I. Fawole

[MBBS (IB), MSc (Epid&Biostat, SA) FWACP, FMCPH, FSAFRI (Med Edn, SA)]

Department of Epidemiology and Medical Statistics, University of Ibadan, Ibadan, Nigeria

DEDICATION

This book is dedicated to the almighty God, the ancient of days, the beginning and the end and to the memory of my late father, Mr. Sylvester Olufemi Shobayo who left behind a lasting legacy for us.

ACKNOWLEDGEMENT

I would like to sincerely appreciate the immeasurable contributions of my supervisor, Dr.Olufunmilayo I. Fawole. Thank you very much for your relentless efforts towards the completion of this work and for your encouragement all the way. My gratitude goes to all the academic and non-academic staff in the Department. My appreciation also goes to Drs. Mobolaji Salawu, Tope Ogunniyan, Tolu Soyannwo, Olayinka Ilesanmi and Diran Olabisi for their invaluable contributions and the technical support they provided during the course of this work.

I thank my mother Mrs. M.O Shobayo, siblings and in-laws for their prayers and encouragement.

I want to appreciate my loving husband, Opeyemi for his care and support at all times. To my lovely children- Toluwanimi, Oluwafikayomi, and Oluwaferanmi, thanks for being there.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACROMYMS

CDC	Centre for Disease and Control
CTS	Conflict Tactic Scale
DALYs	Disability Adjusted Life Years
DHS	Demographic and Health Survey
EA	Enumeration Areas
FCT	Federal Capital Territory
GBV	Gender Based Violence
HIV	Human Immunodeficiency Virus
IPV	Intimate Partner Violence
LGA	Local Government Area
NFHS	National Family Health Survey
STI	Sexually Transmitted Infections
VAW	Violence Against Women
WHO	World Health Organization
WHOMCS	World Health Organization Multi-country Study

ABSTRACT

Introduction: Intimate partner violence (IPV) is an important public health issue that occurs worldwide and is associated with adverse sexual and reproductive health outcomes including sexually transmitted infections (STIs). STIs have recently gained more recognition worldwide because it increases the risk for *HIV* infection. However, there is dearth of information on the association between IPV and STIs particularly among currently married women. This study therefore aimed to determine the association between IPV and STIs after controlling for significant risk factors for STIs among currently married women in Nigeria.

Methods: This study involved a secondary data analysis of the 2008 Nigeria Demographic and Health Survey (NDHS) dataset. This was a national survey which used a cross sectional population based study design. The primary data obtained from the survey was collected with interviewer administered questionnaires using a stratified two-stage cluster sampling technique in the selection of the respondents. Based on the random selection of one woman per sample household who responded to questions from the domestic violence module questionnaire and who were currently married, a final sample size of 18402 was obtained. Data was analyzed using SPSS version 19. Frequency tables were used to show the distribution of respondents by the variables of interest. Values were expressed as absolute numbers and percentages while appropriate diagrams were also generated. Chi-square test was done to determine associations between STI and independent variables at 5% level of significance. Thereafter, independent variables that were significant at the 10% level of significance were included in multiple logistic regression models to identify risk factors for STIs.

Results: The prevalence of IPV among currently married women in Nigeria was 29.3%. Majority of the women experienced emotional violence (22.1%), 17.3% of the married women experienced physical violence while the least experienced form of violence was sexual IPV (4.4%). In addition, majority (17.6%) of the married women experienced just one type of IPV. The experience of multiple types of IPV was also demonstrated such that 8.8% of the married women experienced two types of IPV and 2.9% experienced all three types of IPV. A small proportion (7.2%) of married women had a recent history of STI with genital discharge being the most prevalent symptom. Currently married women who had tertiary education, had ever terminated a pregnancy, had ever had more than one sexual partner, had an early age at sexual debut, drank alcohol during the last sexual intercourse, and lacked autonomy in making decisions had the greatest risk of contracting STIs. Logistic regression also revealed that after controlling for other covariates, currently married women who experienced any form of IPV were found to be 1.3 times more likely to report STI than currently married women who did not experience any form IPV. In addition, physical and sexual violence experienced by currently married Nigerian women remained significantly associated with history of STIs. There was also a demonstrated significant association between experiencing two or three types of IPV and STIs.

Conclusion: There is a need to incorporate IPV screening and services in gynaecologic clinic settings as well as screening for STIs among women who present with IPV particularly multiple forms of violence.

Keywords: Intimate partner violence (IPV), sexually transmitted infections (STIs), married women, Nigeria Demographic and Health Survey (NDHS).

CHAPTER ONE

INTRODUCTION

1.1 Background

Violence against women (VAW) is a global phenomenon which has a devastating effect on women's sexual and reproductive health (Cook and Bewley, 2008).The United Nations (UN) Declaration on the Elimination of Violence against Women defines violence against women as any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life (United Nations, 1993). Although women suffer violence from many institutions and persons, the World Health Organization's "Multi-Country study on women's health and domestic violence against women" confirms that the most common type of violence directed against women is actually carried out by their partners (World Health Organization, 2008). Violence perpetrated against women by an intimate partner is also referred to as intimate partner violence (IPV).

There is increasing evidence that IPV is an important correlate of a wide range of adverse reproductive health outcomes for women, including sexually transmitted infections (STIs) (Kishor, 2009). Sexually transmitted infections are a group of contagious diseases in which the main mode of transmission is by sexual intercourse. STIs can cause pain, infertility and even death if not treated (Ravi and Nair, 2011). Common STIs include *gonorrhoea, trichomoniasis, chlamydial infection, syphilis* and *Human Immunodeficiency Virus* (*HIV*).

The association between IPV and STI can be explained by various pathways (Winter and Stephenson, 2011). Studies have documented that men who perpetrate IPV against their wives

are also more likely to engage in extramarital relations, have inconsistent condom use, and a history of STIs (Martin et al., 1999; Seth et al., 2010). In turn, forced sex, or sexual IPV, may lead to genital trauma, through a lack of lubrication or direct physical force, which increases the risk of STI's transmission (Campbell et al., 2002). In addition, limited or compromised negotiation of safer sex practices places women at risk of STIs (Maman et al., 2000). A woman may fear to ask her husband to use a condom, believing that her insistence will imply unfaithfulness, she may also be at risk of a violent reaction (Kalichman et al., 1998). Women who lack sexual autonomy are often powerless to use condoms or refuse sex, therefore placing them at risk of STIs (Heise et al., 2002). Negotiation to use condoms is also closely tied to relationship power dynamics; the lower the equity in relationship power the more likely a woman would become infected with STIs including *HIV* in the future (Jewkes et al., 2010). Therefore, gender inequity is tied to symptoms of STIs.

The effect of mental health on gynaecological health is also an important pathway (Winter and Stephenson, 2011) . Women who experience IPV are more likely to report mental health problems (Ellsberg et al., 2008; Jamieson and Steege, 1997; Yoshihama and Sorenson, 1994). Thus, severe psychological distress, as a result of IPV, causes increased somatic symptoms including abnormal genital discharge.

1.2 Problem statement

Research has shown that gender based violence (GBV) especially IPV is a pervasive public health problem that has implications for health policies and programs around the world (Heise et al., 1999b). Globally, at least one in three women has experienced some forms of gender-based abuse during her lifetime (Heise et al., 1999b). Studies from a range of countries show that 40%-70% of female murder victims were killed by their husbands or boyfriends, often during an ongoing abusive relationship (W.H.O, 2002). The 2005 multi-country study by the World Health Organization (WHO), with data from 10 countries and 15 sites, found that the proportion of ever-partnered women who had ever experienced physical or sexual violence, or both, by an intimate partner in their lifetime, ranged from 15% to 71%.

In sub-Saharan Africa the lifetime prevalence of IPV is reported as 20–71% in marriage or current partnerships (Jewkes et al., 2002; Koenig et al., 2003). Cultural norms concerning the treatment of women have acted to increase the tolerance of IPV leading to its high levels in these settings (World Health Organization, 2002). Similarly, discriminatory laws that condone certain forms of VAW, dismissive attitudes from law enforcement agents, an inaccessible justice system, and VAW being regarded as belonging in the private sphere, have been reported as contributory factors to high prevalence of IPV in developing countries such as Nigeria (Uffah et al., 1995).

The consequences of intimate partner violence against women are often devastating and long term. It causes both fatal and non-fatal health outcomes in the victims (Campbell et al., 2002; World Health Organization, 2002). According to the WHO multi-country study, assault by a partner was a direct cause of injuries, with between one in five and one-half of women reporting

that they had been injured as a result of physical violence, often more than once. Also, it was found that abused women were more likely to experience emotional distress and to have considered or attempted suicide. In addition, women who experienced violence by a partner were more likely to report poor general health and greater problems with walking and carrying out daily activities, pain, memory loss, dizziness, and sexually transmitted infection symptom-vaginal discharge in the 4 weeks prior to the survey (Garcia-Moreno et al., 2005).

The global burden of STIs is unknown for several reasons. Firstly, asymptomatic infections are common in many STI; secondly, diagnostic techniques are not available in some of the most affected countries; and finally, surveillance systems are inexistent or very deficient in many areas of the world (Díez and Díaz, 2011). WHO (2008) however estimates that 499 million new cases of four curable STIs (*Gonorrhoea*, *Chlamydia*, *Syphilis*, *Trichomoniasis*) occur every year in adults aged 15-49 years (WHO, 2012). Sub-Saharan Africa bears the largest burden of these new cases, being responsible for 11 to 35% of all new cases of curable STIs (U.N.E.S.C.O-I.I.C.B.A, 2001).

STIs affect the most vulnerable population such as women, children, and youth. Among women between the ages of 15 and 44 years, STIs are the second leading cause of morbidity and mortality, following only maternal causes (C.D.C, 2007). Also, since many STIs are asymptomatic they are usually inadequately treated or left untreated altogether. Untreated STIs can lead to serious long-term health consequences, especially for women of reproductive age. STIs cause many harmful, often irreversible and costly clinical complications, such as: reproductive health problems such as ectopic pregnancy, tubal blockage and infertility; fetal and perinatal health problems such as congenital syphilis; cancer such as cervical cancer and facilitation of the sexual transmission of *HIV* infection (St. Louis et al., 1997). Thus, STIs affect

women in their most productive years and has a devastating effect on the well-being of families (World Bank, 2008).

1.3 Justification

Several studies have linked sexually transmitted infections in women with infection status of a male partner (Decker et al., 2008) . While IPV cannot lead to STI in the absence of pathogen exposure, the likelihood of STI in the presence of such exposure may be increased by partner violence (Decker et al., 2008). However, few studies have attempted to assess whether IPV relates to women's increased risk of STI beyond the risk accounted for by exposure to STI from a male partner.

Research on the association between IPV and STIs have been widely conducted in developed countries (Augenbraun et al., 2001; Bauer et al., 2002; Wingood et al., 2000) leaving largely unanswered the question of whether the positive IPV-STI association found in industrialized countries is equally applicable to women in developing countries such as Nigeria.

As part of promoting the reproductive and sexual health status of women, prevention of sexually transmitted infections is a major component of reproductive health programs that needs to be urgently addressed. This is because a substantial proportion of female reproductive morbidity is associated with presence of STI. There has also been documented evidence of IPV being a potential risk factor of STIs (Decker et al., 2008; Maman et al., 2000; Winter and Stephenson, 2011). Thus, to reduce women's risk of infection, programs and policies need to acknowledge IPV as a risk factor along with other recognized risk factors, such as multiple sexual partners and unprotected sexual intercourse. This project will therefore add to the existing knowledge on

association between IPV and STIs. It will guide in the design of appropriate interventions and policies to prevent IPV and STI in Nigerian women.

1.4 Broad objective

To determine the association between experience of intimate partner violence and development of sexually transmitted infections among currently married women in Nigeria.

1.5 Specific objectives

1. To determine the prevalence and types of intimate partner violence experienced by currently married women in Nigeria.
2. To determine the prevalence of sexually transmitted infections and STI symptoms contracted by currently married women in Nigeria.
3. To determine IPV as a predictor for contracting sexually transmitted infections among currently married women in Nigeria.
4. To identify other risk factors for sexually transmitted infections among currently married women in Nigeria.

1.6 Research questions

1. What is the proportion and types of intimate partner violence experienced by currently married women in Nigeria?
2. What is the proportion of sexually transmitted infections and STI symptoms among currently married women in Nigeria?
3. Is IPV a predictor for contracting sexually transmitted infections among currently married women in Nigeria?
4. What are the other risk factors for sexually transmitted infections among currently married women in Nigeria?

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of intimate partner violence

Intimate Partner Violence (IPV), also called domestic violence, battering, or spousal abuse, is defined as any act of physical, sexual and emotional abuse by a current or former partner whether cohabitating or not (Krug et al., 2002). IPV is an important public health and human rights issue that occurs in all countries; irrespective of social, economic, religious or cultural group. It exists in 'a culture of silence and has long been considered a 'private' affair. As a result, this has contributed to the serious gap in public health policy making and the lack of appropriate programmes (Gaikwad et al., 2011).

2.2 Types of intimate partner violence

2.2.1 Physical violence

Physical violence in an intimate relationship occurs when the woman has been slapped, or had something thrown at her, pushed or shoved, hit with a fist or something else that could hurt, kicked, dragged or beaten up, choked or burnt, threatened with or had a weapon used against her (Garcia-Moreno et al., 2005)

2.2.2 Sexual violence

Sexual violence by an intimate partner occurs when a woman has been physically forced to have sexual intercourse, had sexual intercourse because she was afraid of what her partner might do; been forced to do something sexual she found degrading or humiliating (Garcia-Moreno et al., 2005).

2.2.3 Emotional violence

Emotional or psychological violence occurs when a partner is insulted or made to feel bad, belittled, humiliated in front of people or intimidated on purpose by yelling or smashing things or had threatened to hurt someone a partner cared about (Garcia-Moreno et al., 2005).

2.3 Prevalence of intimate partner violence

IPV cuts across all socio-economic class and cultural background and is prevalent in both developed and developing countries. Population-based studies from various countries indicate that 10–69% of women aged 15--49years experience physical abuse by a male intimate partner at least once in their lifetime (Heise, Ellsberg & Gottemoeller, 1999; Heise & Garcia-Moreno, 2002) while 6--47% of women report attempted or actual forced sex by an intimate partner in their lifetime (Jewkes, Sen & Garcia-Moreno, 2002). According to the WHO multi-country study, 13–61% of women who had ever been in an intimate partnership reported ever having experienced physical violence by a partner, 6–59% of women who had ever been in an intimate partnership reported sexual violence by a partner at some point in their lives, 20–75% of women who had ever been in an intimate partnership reported experiencing one emotionally abusive act, or more, from a partner in their lifetime (Garcia-Moreno et al., 2005).

A multi-country Demographic and Health Surveys (DHS) report on domestic violence found that more than 40 percent of women in Bolivia, Cameroon, Columbia, Kenya, Peru, and Zambia had ever experienced violence by a spouse or partner (Kishor and Johnson, 2004). A study using the Bangladeshi Demographic and Health Survey, found that over one third (38.0%) of married Bangladeshi women experienced some form of violence in the 12 months preceding the survey. Twenty percent experienced physical violence in the absence of sexual violence, 9.7%

experienced sexual violence in the absence of physical violence, and 8.4% experienced both sexual and physical violence (Decker et al., 2008). In another study conducted among married women in India, using the National Family Health Survey-III (NFHS-III), it was found that 10.13% experienced verbal IPV, 19.05% experienced physical IPV, and 6.03% experienced sexual IPV (Winter and Stephenson, 2011).

Studies conducted in various parts of Africa revealed that 21% of Ghanaian, 45% of Liberian, 47% rural Tanzanian and 49% of rural Ethiopian married women have ever experienced physical IPV (Ghana Demographic and Health Survey, 2008; Liberia Demographic and Health Survey, 2007; World Health Organization, 2005). It has also been documented that 8% of Ghanaian, 16% of Kenyan, 31% of Tanzanian and 59% of Ethiopian women reported having ever been sexually abused (Ghana Demographic and Health Survey, 2008; Kenya Demographic and Health Survey, 2003; World Health Organization, 2005)

Existing research suggests that different types of violence often coexist: physical IPV is often accompanied by sexual IPV, and is usually accompanied by emotional abuse. For example, in the WHO multi-country study, 23–56% of women who reported ever experiencing physical or sexual IPV had experienced both (Garcia-Moreno et al., 2005). However, in the study conducted among married Indian women, it was found that, a larger percentage of women had experienced only one type of IPV (14.87%), compared to any two types of IPV (6.86%), or all three types of IPV (2.17%) (Winter and Stephenson, 2011).

In south west Nigeria, Fawole et al (2005) found that 31.3% of the women surveyed were victims of physical abuse. While another study also conducted in a semi-urban region of south

west Nigeria showed that the prevalence of lifetime experience of physical IPV was 28.2% among ever-partnered women aged 15-49 years (Owoaje and OlaOlorun, 2012).

2.4 Risk factors of intimate partner violence

According to the US Center for Disease Control (C.D.C, 2010), several factors have been associated with IPV and can be grouped as; individual level factors, relationship factors, community factors and societal factors.

The individual level factors are biological and personal history factors that may increase the likelihood that an individual will become a victim of violence. These factors include young age, low level of education, low self-esteem, depression, unemployment, low income, alcohol consumption, belief in strict gender roles etc.

The relationship factors include marital conflict-fights, tension, and other struggles, marital instability-divorces or separations, dominance and control of the relationship by one partner over the other, economic stress, unhealthy family relationships and interactions. These factors increase the risk of violence as a result of relationships with intimate partners.

The community factors refer to the community contexts in which social relationships are embedded- such as schools, workplaces and neighbourhoods- and seek to identify the characteristics of these settings that are associated with people becoming victims of violence. Community factors that could trigger partner violence include: poverty and associated factors such as overcrowding, low social capital such as lack of institutions, relationships, and norms that shape a community's social interactions, weak community sanctions against IPV such as unwillingness of neighbors to intervene in situations where they witness violence.

Lastly, societal factors which includes the larger, macro-level factors that influence intimate partner violence such as gender inequality, religious or cultural belief systems, societal norms and economic or social policies that create or sustain gaps and tensions between groups of people. For example, traditional gender norms such as women should stay at home, not enter workforce, and be submissive; men support the family and make the decisions have been found to contribute to development of IPV.

2.5 Consequences of intimate partner violence

IPV has health, social and economic consequences which impacts not only on the woman but on the family at large. The health consequences of IPV can be classified as physical, psychological and behavioural, sexual and reproductive, and fatal health consequences (W.H.O, 2002).

Physical health consequences include injuries, ranging from cuts and bruises to permanent disabilities such as chronic pain syndromes, fractures, ocular damage, reduced physical functioning and death (W.H.O, 2002). Sexual and reproductive health consequences include unwanted pregnancy, unsafe abortions, pelvic inflammatory diseases or sexually transmitted infections, including *HIV* infection (W.H.O, 2002). Psychological and behavioural health consequences include alcohol and drug abuse, depression and anxiety, eating and sleep disorders, feelings of shame and guilt, physical inactivity, poor self-esteem, post-traumatic stress disorder, psychosomatic disorders, smoking, suicidal behaviour and self-harm. Fatal health consequences include maternal mortality, suicide and homicide (W.H.O, 2002).

Victims of IPV sometimes face the following social consequences (Heise and Garcia-Moreno 2002; Plichta 2004; Warshaw et al., 2009): restricted access to services, strained relationships with health providers and employers, isolation from social networks, homelessness

2.6 Definition and causes of sexually transmitted infections

Sexually transmitted infections (STI) include a series of diseases of diverse infectious etiology, in which sexual transmission plays a primary epidemiologic role. This term includes asymptomatic forms, because STI can result in subclinical lesions with a potential for transmission of infection. This term is preferable instead of the term "sexually transmitted disease", previously used. Man is the only natural reservoir for STI etiological agents. Transmission takes place through person-to person direct sexual contact with infected individuals (with acute, chronic or asymptomatic clinical forms) (Díez and Díaz, 2011).

To date there are over 30 bacterial, viral and parasitic pathogens that have been identified that can be transmitted sexually (W.H.O, 2012). Some of the most common infections are: bacterial infections such as *Neisseria gonorrhoea* (causes *gonorrhoea* or *gonococcal* infection), *Chlamydia trachomatis* (causes *chlamydial* infections), *Treponema pallidum* (causes *syphilis*), *Haemophilus ducreyi* (causes *chancroid*), *Klebsiella granulomatis* (previously known as *Calymmatobacterium granulomatis* causes *granuloma inguinale* or *donovanosis*); viral infections such as *Human immunodeficiency virus* (causes AIDS), *Herpes simplex virus* type 2 (causes genital *herpes*), *Human papillomavirus* (causes genital warts), *Hepatitis B virus* (causes hepatitis), *Cytomegalovirus* (causes inflammation in a number of organs including the brain, the eye, and the bowel); Parasites such as *Trichomonas vaginalis* (causes vaginal *trichomoniasis*), *Candida albicans* (causes vulvovaginitis in women)(W.H.O, 2011).

Although many different pathogens cause STIs, some display similar or overlapping signs and symptoms. Some of these signs and symptoms are easily recognizable and consistent, and can be described as a syndrome that signals the presence of one or a number of pathogens. The main

symptoms that comprise the common STIs in women are: vaginal discharge, genital ulcers and lower abdominal pain (W.H.O, 2011).

2.7 Global burden of sexually transmitted infections

STIs are among the world's most common diseases, with an annual incidence exceeded only by diarrheal diseases, malaria, and lower respiratory infections. The total number of new cases of the four STIs in 2008 in adults between the ages of 15 and 49 years was estimated to be 498.9 million worldwide: 105.7 million cases of *C. trachomatis*, 106.1 million cases of *N. gonorrhoea*, 10.6 million cases of *syphilis* and 276.4 million cases of *T. vaginalis*. In addition, at any point in time in 2008 there were 360.2 million prevalent cases of these infections among adults (W.H.O, 2012). According to Demographic and Health Surveys for Liberia, Sierra Leone, Cote d'Ivoire and Senegal the prevalence of self-reported STIs among married women were 20.1%, 8.2%, 3.0%, 1.6% respectively. The burden on the health care system and healthcare expenditure is great. STIs, even without including *HIV*, are consistently among the most common conditions leading to health care visits regardless of national resources (C.D.C, 2007). Due to their high prevalence, particularly in developing country settings, STIs result in substantial productivity losses for individuals and communities, particularly where the majority of the population is less than 40 years of age (C.D.C, 2007). In developing countries, STIs are among the leading causes of disability adjusted life years (DALYs) lost for women of reproductive age, exceeded only by maternal causes and *HIV* (C.D.C, 2007).

2.8 Risk factors for sexually transmitted infections

Individual biologic, behavioural, socio-demographic/economic factors can all determine a person's risk for acquiring STIs (Dallabetta et al., 2006), however the emphasis for this project is on the behavioural and socio-demographic/economic factors.

2.8.1 Biological factors

The "host's" anatomy, microbiology such as vaginal flora, and hormonal and immunologic status may enhance likelihood of acquiring an STI. Many STIs initially infect mucosal surfaces, such as the vaginal walls and cervix in women. The relatively large surface area of the female vagina confers particular risk for women for those STIs such as *syphilis, chancroid, trichomonas*, most viral STIs) that infect mucosal surfaces. Some STIs are attracted to specific target cells. For example, the bacteria causing *gonorrhea* and *chlamydia* prefer the specialized columnar epithelial cells lining of the female cervix. These cells are more exposed in young women thereby increasing their risk for STI acquisition. Many STIs are inactivated by acidic environments, and thus substances that increase vaginal pH such as sperm, menstrual blood, or chemical douching agents that is, liquids used to flush out the vaginal after sex or menstruation may increase a woman's STI risk. The skin itself is an important protective barrier, and even small breaks in the skin may enhance the likelihood of infection. Traumatic sex, caustic douching agents, or herbal preparations used to dry out the vagina practiced in some cultures to enhance sexual pleasure for males can all increase a woman's chance of acquiring STIs. Hormonal and immunologic factors such as pregnancy, use of oral contraceptives can also enhance a woman's risk for certain STIs (C.D.C, 2007).

2.8.2 Behavioural factors

Behavioural factors affecting STIs are personal or individual risk factors that may increase the likelihood of acquiring STIs. Several behavioural indicators need to be examined as proxies for infection exposure that assess sexual risks. Such indicators capture high-risk sexual behaviours such as a multiple of sexual partners, an early age at first sex ; and factors such as alcohol consumption (Kishor, 2009).

2.8.2.1Multiple sexual partners

There is a direct relationship between higher number of sex partners and likelihood of acquiring an STI; larger numbers of partners mean greater likelihood of contacting someone who is infected with an STI (C.D.C, 2007). A study using a sample of 2,019 women age 20-44 randomly selected in Moshi district of Tanzania found that the likelihood of women having a STI was significantly higher for women with multiple sexual partners (OR=2.41) than for women with only one partner (Ghebremicheal et al., 2009).

2.8.2.2 Age at first sex

Age at first sex is an important indicator of exposure to STIs. Individuals who start their sexual activity at a young age are more likely to report higher rates of STIs, drug and alcohol abuse, multiple sexual partners and to engage in unprotected sex (Dickson et al., 1998; Duncan et al., 1990; Greenberg et al., 1992). Women who initiate sex at an early age are considered to be at a higher risk of contracting an STI than women who delay initiation of sexual activity. In a study conducted in six countries namely Haiti, the Dominican Republic, India, Liberia, Kenya and Zambia using data from a representative sample of couples, found that in all countries except

India, at least one in three married women first had sex before age 16, while more than half first had sex before age 16 in Liberia (Kishor, 2009).

2.8.2.3 Alcohol consumption

Alcohol consumption may strengthen a sense of invulnerability, reduce perceived importance of social norms, diminish awareness of high risk behaviours, and confound the drinker's ability to negotiate interpersonal situations or interactions with the environment (Giesbrecht and Dick, 1993). A study conducted in Tanzania found that alcohol consumption was directly and positively associated with women having multiple sexual partners (OR=1.66) and, through this relationship, alcohol consumption was indirectly and positively related to having an STI (Ghebremicheal et al., 2009). Several other studies have suggested a link between alcohol use and the incidence of sexually transmitted infections (STIs) (Standerwick et al., 2007; Chersich et al., 2007). Alcohol is the commonest form of substance abuse in sub-Saharan Africa (Obot, 2000). In most sub-Saharan African countries, women are accorded a subordinate status and this may affect their ability to negotiate sexual decisions and behaviours, and their risk of STIs (Koenig et al., 2003; Wolff et al., 2000). Women are expected to be faithful and even condone their partner's engagement in multiple partnerships and sexual risk behaviours (Koenig et al., 2003).Thus, there is a possibility that societal expectations and pressures put upon women by their partners may result in alcohol use and abuse as an escape. Alcohol use may reduce women's inhibition and may help women refrain from protesting and condone with the sexual risk behaviours of their partners (Ghebremicheal et al., 2009).

2.8.3 Socio-demographic/personal factors

Women's socio-economic and demographic settings have a strong bearing on her marital and sexual behaviour which ultimately determines her health status (Ravi & Nair, 2011). Age has been found to be associated with STI particularly when the female is younger (Ravi and Nair, 2011). In a study conducted among married women in India, age was in general not significantly associated with symptoms of STIs, although women between the ages of 45-49 years were less likely to report genital discharge than women ages 20-24 years (Winter & Stephenson, 2011). Similarly, in another study done in the same region, women in older ages were found to be 31 percent less likely to have STI than women in younger ages. This was attributed to the fact that younger women are exposed to frequent pregnancies, gynecological surgery and use of contraceptives that makes women more vulnerable to STI (Ravi and Nair, 2011).

In a study done using National Family Health Survey-3 between 2005 – 2006 women with higher education were found to show lower prevalence of STI, a similar result was also found with education of partners (Ravi and Nair, 2011). In contrast, a study based on the matched sample of couples obtained from the Demographic and Health Surveys in three countries in Africa: Liberia (2007), Kenya (2003), Zambia (2007); one in Asia, India (2005-06); and two in the Caribbean: Haiti (2005-06), and Dominican Republic (2007) found that the percentage of women who report STI symptom increases with women's and husband's education (Kishor, 2009).

Place of residence may also impact on acquisition of STIs. Increase in prevalence of STIs have been associated with urban environments where there is movement away from traditional beliefs and loosening societal norms around sex (Dallabetta et al., 2006). Paradoxically, a higher

prevalence of STIs has also been reported in rural areas (Ravi and Nair, 2011; Boyer et al., 2006; Winter and Stephenson, 2011) where rural women may perceive themselves to be at lower STI risk or are less knowledgeable about STIs and how to prevent them than their urban counterparts (Blanchard et al., 2005). Other research has suggested that individuals living in rural communities may face specific challenges that discourage the seeking of treatment such as poverty and a lack of access to reproductive health care (Thomas et al., 1996).

Personal factors like a history of pregnancy termination have also been implicated in the risk of contracting STIs. The reason for this may be because unwanted pregnancy might be the result of unsafe sexual behaviour, which creates dual risks for both pregnancy and exposure to STIs (Chen et al., 2002). Secondly, the procedure during induced abortion might facilitate the transmission of lower genital tract infections to upper genital tract and may cause serious complications and sequelae (Chen et al., 2002). In a cohort study conducted in Sweden to investigate the association between history of induced abortion and current or previous sexually transmitted infections, it was found that there were significantly increased frequencies of gynaecologic symptoms such as abnormal vaginal discharge, pruritus, genital malodour, deep dyspareunia and urinary symptoms in the women with history of induced abortion as compared with the control group. In addition, women in the abortion group were 1.5 times more likely to present with abnormal vaginal discharge than women in the control group (Hellberg et al., 1999).

Gender power imbalances and lack of autonomy are the leading underlying factors for women's vulnerability to sexually transmitted infections (Gaikwad et al., 2011). Therefore, gender-role attitudes that promote or even tolerate norms that emphasize the control of men over women are likely to negatively affect women's ability to control their own sexual life and the negotiation of safe sex with their husbands or other partners, if any. Spousal violence against a woman may

result in lack of communication about family planning use and intention to use, therefore undermining her ability to negotiate safe sex through the use of contraceptives, leading to increased chances of contracting sexually transmitted diseases and *HIV/AIDS*.

2.9 Association between intimate partner violence and sexually transmitted infections

A potential pathway for the IPV–STI link is through the association of IPV with the risk factors for STI. Wives of abusive men may be at higher risk of STIs because abusive men have a greater likelihood of engaging in other high-risk sexual behaviours that are positively associated with STIs, such as alcohol abuse, promiscuity, and polygamy (Abrahams et al., 2004). Another potential pathway for the IPV–STI link is through women's own high-risk sexual behaviours. Such a pathway would exist particularly if mental health related issues arise from the experience of IPV which may predispose women to engage in such behaviours, potentially as a coping mechanism (Fuentes, 2008) or if IPV is a consequence of such behaviours.

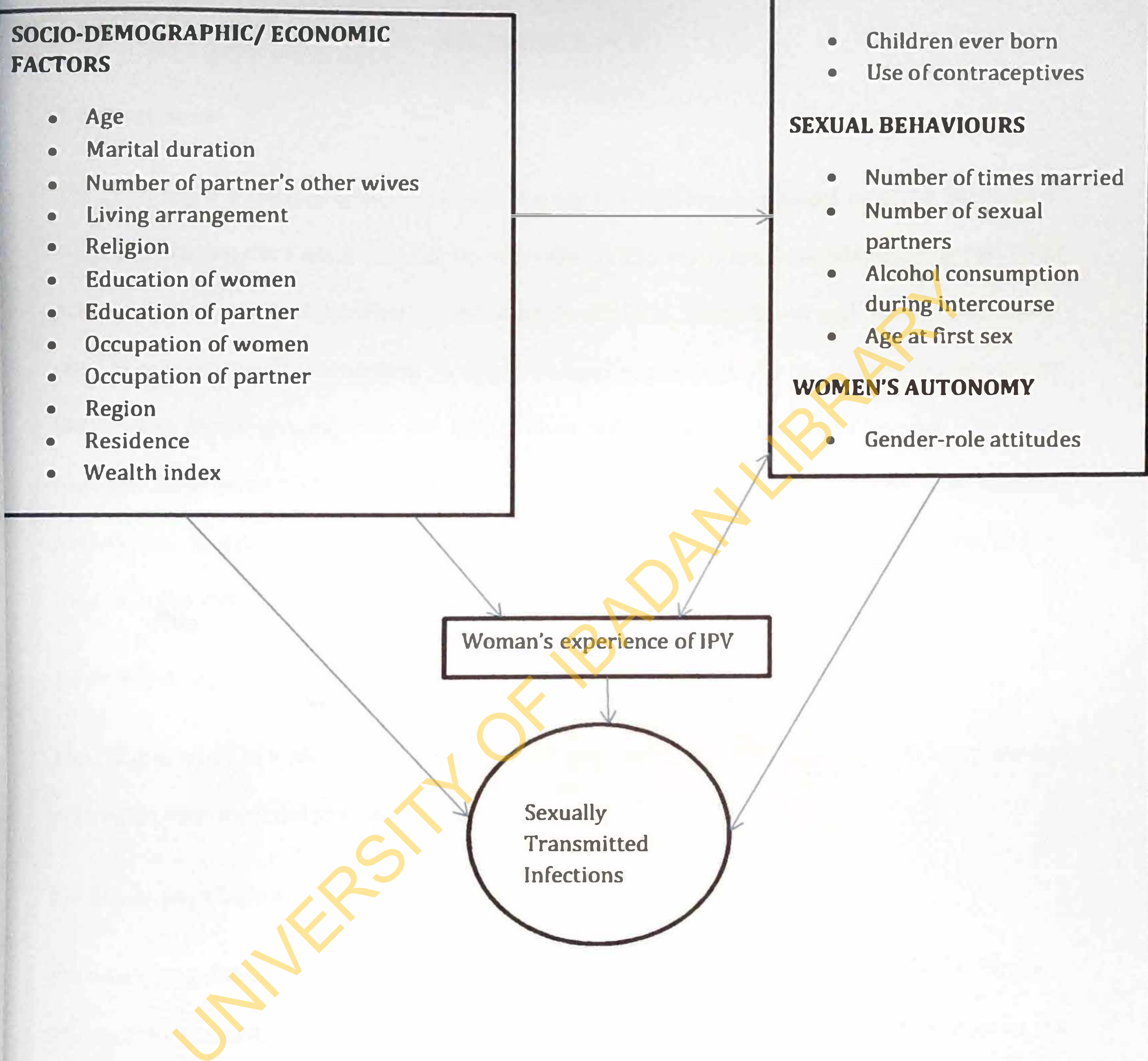
Research documenting the likelihood of the experience of IPV being an independent risk factor for STIs among women is also beginning to emerge. For example, Fuentes (2008), using U.S. data for ethnically diverse women, showed that IPV enhances the risk of STIs in a multiplicity of interlinked and overlapping ways. A recent study conducted in a rural area in India, showed that women experiencing violence report the symptoms of sexually transmitted infections more than the women who did not experience violence (Odds ratio=2.02; 95% CI 1.04-3.93) (Gaikwad et al., 2011). This was attributed to the fact that violence makes the women vulnerable to sexually transmitted infections as it may limit women's ability to negotiate safe sexual behaviour and it also limits women sexual autonomy. Winter & Stephenson (2011) demonstrated that, experiencing any verbal, physical, or sexual IPV was associated with an increased risk of

symptoms of sexually transmitted infections in married Indian women after controlling for other covariates. A significant dose-response relationship also existed between the number of types of IPV and abnormal genital discharge. As women experienced more forms of IPV, her risk of abnormal genital discharge also increased.

2.10 Conceptual framework for the study

The figure below provides the conceptual framework for this study. It depicts the pathways between IPV and women's risk of STIs that will be investigated. The figure shows that the determinants of a woman's risk of STIs include factors that affect her exposure to infection, such as number of times married, multiple sexual partners, alcohol consumption, age at first sex and sexual autonomy. Other factors that may increase the likelihood of acquiring STI include; pregnancy termination, use of contraceptives, children ever born. In addition, the model focuses attention on women's experience of IPV as a key risk factor for STIs among women in the general population and operates independently of other risk and exposure factors. Finally, women's risk of STI will be mediated by the socio-demographic/economic characteristics of women because both IPV and the determinants of STIs are likely to vary by these characteristics.

Figure 1: Conceptual Framework (Ravi and Nair, 2011)



CHAPTER THREE

METHODOLOGY

3.1 Study area

The 2008 Nigeria Demographic and Health Survey (NDHS) was conducted in all the 36 states of Nigeria including the Federal Capital Territory (FCT).The states are grouped into six geopolitical zones: North-Central, North-East, North-West, South-East, South-South and South-West. There are 774 constitutionally recognized local government areas (LGAs) in the country and about 374 identifiable ethnic groups, with the Igbo, Hausa and Yoruba as the major groups. The 2006 National Population Census estimates Nigeria's population to be 140,431,790. The national growth rate is estimated at 3.2 percent per annum and population density is 150pop/sq.km. Nigeria is the most populous country in Africa.

3.2 Study design

The current study is a secondary data analysis of data from the 2008 NDHS. The primary survey utilized a cross sectional population based study design.

3.3 Study population

The study population comprised of married women in their reproductive age namely 15-49 years who answered questions on the domestic violence module. The 2008 NDHS asked questions on IPV to one eligible woman randomly selected in each household in order to maintain confidentiality and protect the respondents as recommended by the WHO ethical guidelines (World Health Organization, 2001).

3.3.1 Inclusion criteria

Currently married women within the reproductive age 15-49 years and who answered questions from the domestic violence questionnaire were included in the study.

3.3.2 Exclusion criteria

Women aged 15-49 years who were separated, divorced or widowed at the time of the survey and were excluded from the domestic violence questionnaire in the primary survey.

3.4 Sample size estimation

This was performed using the following formula:

$$P1i = (a / A)$$

Where,

a: is the number of clusters to be selected in the given state

A: is the total number of clusters in the given state.

In each selected cluster, a complete household listing operation was carried out and households were selected to achieve a fixed sample take per cluster. However, since the 2008 NDHS sample was unbalanced among residence area and state, a final weighing adjustment procedure to provide estimates at every other domain of study was required.

In a given state, if c is the fixed number of households selected out of the total households (Li) — found in the 2008 listing process—for the *ith* cluster, then the household probability in the selected *ith* cluster can be expressed as:

$$P2i = (c / Li)$$

The final households overall probability in the i*th* cluster could be calculated as:

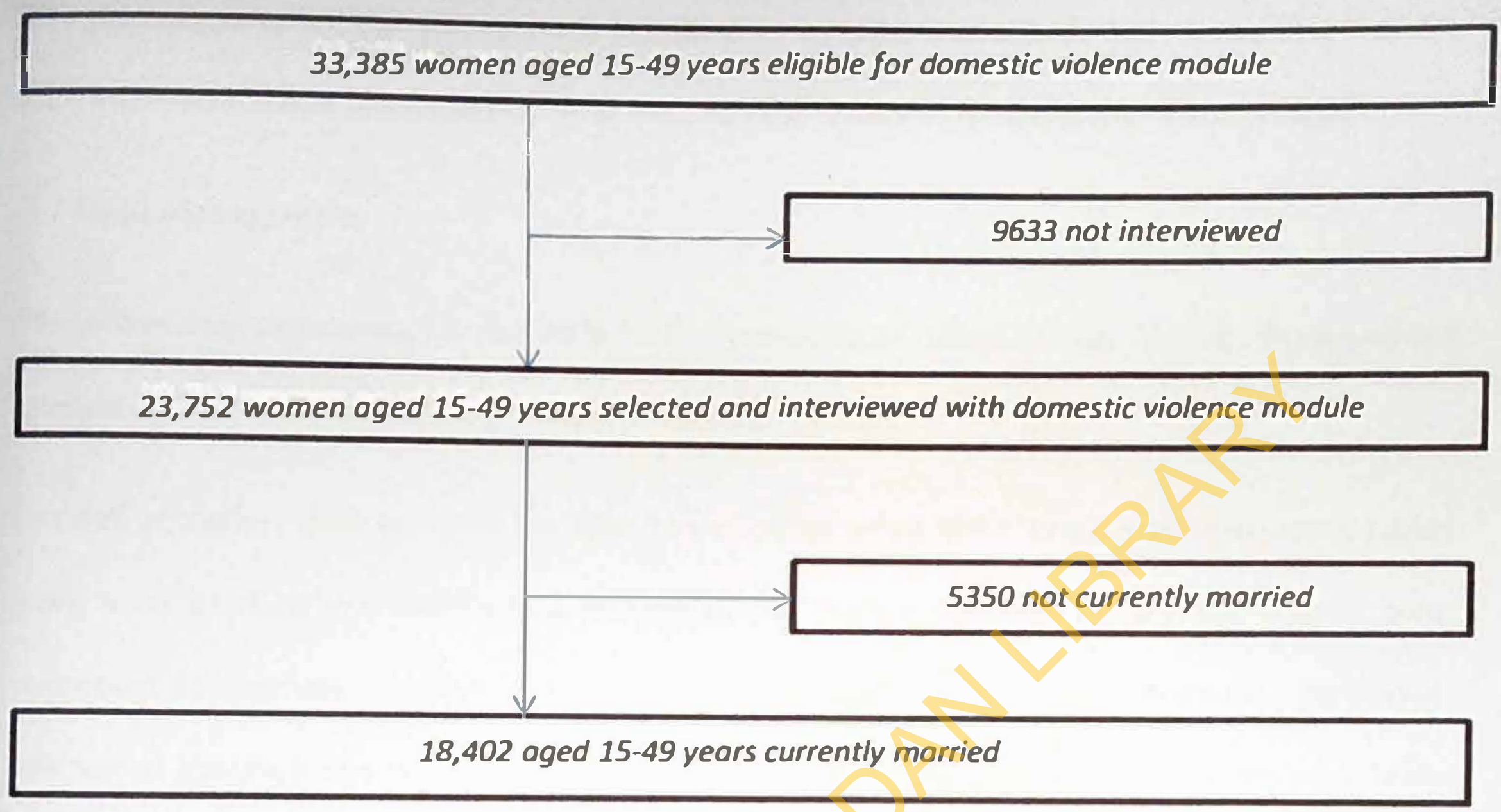
$$fi = P1i * P2i$$

and the sampling design weight for the i*th* cluster is given as:

$$1/fi = 1 / (P1i * P2i)$$

This study analyzes data from the 2008 NDHS which contains data on a nationally representative sample of 33,385 women aged 15-49 years. The selection of one woman per sample household was random so that 23,752 women who were selected and interviewed for the domestic violence module questionnaire were a subsample of the entire 2008 NDHS sample excluding 9633 respondents. Additionally, this study was limited to currently married women, excluding 5350 respondents. The final sample size for analysis was 18402 currently married women aged 15-49 years.

Figure 2: Sampling schema for the study



3.5 Sampling technique

The sampling technique used in the primary survey was a stratified two-stage cluster design. Each state in Nigeria is subdivided into local government areas (LGAs), and each LGA is divided into localities which in turn were subdivided during the last 2006 population census into convenient areas called census enumeration areas (EAs). The list of EAs in the last population census constituted the sample frame for the 2008 NDHS. The EAs are stratified separately by urban and rural areas consisting of 888 clusters, 286 in the urban and 602 in the rural areas.

3.6 Data collection method

The primary data for the survey were collected by visiting households and conducting face-to-face interviews. Data was collected with the use of interviewer administered questionnaires.

3.7 Data management

The initial data processing for the 2008 NDHS consisted of office editing, coding of open-ended questions, data entry and editing computer-identified errors.

For this secondary data analysis, the data was analyzed using SPSS version 19. Frequency tables were used to show the distribution of respondents by the variables of interest. Values were expressed as absolute numbers and percentages while appropriate charts were also generated. Inferential statistics was done using chi-square test to determine associations between experience of IPV and history of STI at 5% level of significance. Thereafter, independent variables that were significant at the 10% level of significance were included in multiple logistic regression models to identify correlates of STIs.

3.8 Measurement of variables

3.8.1 *Dependent outcome variable*

The study measured the following outcome variable;

STI

The women's STI status in the 12 months preceding the survey was based on a combination of questions to determine if the woman had a sexually transmitted disease infection (STI) in the past year. This combination includes a direct question namely "In the past 12 months, have you

had a sexually-transmitted disease?", as well as the two questions on STI symptoms "In the past 12 months have you had a genital sore or ulcer?" and "in the past 12 months have you had an unusual discharge from your vagina?" If women said yes to one or more of these questions they were categorized as having had an STI in the past 12 months.

3.8.2 Independent variables

The following are the independent variables in the study;

Types of IPV

Women's IPV status was determined by asking married women a number of questions which are a modified and shortened "Conflict Tactics Scale" (CTS) (Strauss, 1990). CTS was designed to measure the use of reasoning, verbal aggression, and violence within family conflict. Items range from low in coerciveness such as discussing an issue to high in aggressiveness such as hit, kicked, threatened with weapon.

Women could answer 'yes' or 'no' to each item. If a woman said 'yes' to one or more of these items she was considered as having ever experienced IPV in her current relationship. From the questionnaire, question 24 had items which were considered as acts of physical violence, question 25 had items, considered as acts of sexual violence, while question 26 had items considered as acts of emotional violence. Experience of any physical, sexual or emotional violence was one of the key explanatory variables of interest.

Number of types of IPV

This is the experience of multiple forms of IPV. The number of types of IPV was assessed by computing new variables such that experience of one type of IPV included experience of either physical, sexual or emotional; experience of any two types of IPV included experience of

physical and sexual IPV or emotional, sexual or physical and emotional IPV; while experience of all three types of IPV included experience of physical, sexual and emotional IPV.

Socio-demographic/economic characteristics of respondents such as age, place of residence, geopolitical region, religion, highest level of education, occupation, wealth index.

Partner related characteristics such as partner's educational status, partner's occupation, marital duration, living arrangement (partner lives in house or stays elsewhere), number of partner's other wives.

Fertility related characteristics such as total number of children ever born, history of use of contraceptive method, history of pregnancy termination.

Age at first sex

Women were asked the age at which they first had sex. This continuous variable measured in years was grouped into three categories: Age at first sex was 15 years or below; was 16 or 17 years; and was 18 years and above. Literature suggests that the lower the age at first sex the greater the number of lifetime sexual partners (Kishor, 2009). Further, in combination with current age, age at first sex also proxies the length of exposure to the risk of sexually transmitted diseases.

Total lifetime number of sexual partners (Multiple sexual partners)

Women were asked about the total number of sexual partners they have ever had, to identify women who have had one or more sexual partners in their lifetime who was not a spouse or cohabiting partner. This will be used as a proxy for number the sexual partners in the past 12 months as information on this variable was not available. Having multiple sexual partners is a major STI risk factor.

Number of unions/Number of times married

Information on prior marriages complements information on other sexual partners and provides information on sources of STI infection exposure. Women were asked the number of times they have been married and categorized into two; once or more than once.

Alcohol consumption during sexual intercourse

Women were asked about their alcohol consumption at last sexual intercourse. Alcohol consumption has been shown to be an important correlate of risky sexual behaviours hence an exposure factor for STIs.

Attitude towards refusal of sex if partner has an STD

This indicator reflects perceptions of sexual roles, women's rights over their bodies and relates positively to women's sense of self and empowerment. Gender attitudes and roles have therefore been identified as important for women's ability to protect themselves against sexually transmitted infections and, violence (Hindin et al., 2008). In order to measure gender-role attitudes, the NDHS has a number of questions that presented scenarios and asked whether certain types of behaviours by a husband were justified. One of such question asked women if they think that a wife is justified in refusing to have sex with her husband 'if she knows he has an STD' In this analysis, women were categorized into two groups "yes or no" based on their responses.

3.9 Ethical consideration

Ethical approval for the primary survey was obtained from the National Health Research Ethics Committee. Permission to use the 2008 NDHS data set for secondary analysis was requested for from Measure DHS and this was granted.

3.9.1 Informed consent

The purpose, content and implication of the study were explained to the participants. A written informed consent was obtained from the participants before administering the questionnaires. Participants were also informed that participation is voluntary and were free not to answer any question they were not comfortable with or to decline participation without reprisal or loss of benefit.

3.9.2 Confidentiality

Privacy was ensured while all information from the study was kept confidential.

3.9.3 Beneficence to participants

Though there was no direct benefit to the participants, the information obtained from the survey helped the Nigerian government to plan health services.

3.9.4 Non-maleficence to participants

The study caused no harm to the participants.

CHAPTER FOUR

RESULTS

4.1 Socio-demographic characteristics of respondents

Table 1 shows the socio-demographic characteristics of the respondents. The mean age of the respondents was 30.48±8.6 years. Respondents in the 25-34 years age group constituted the highest proportion of all the respondents (40.8%). Majority of the respondents were from rural areas (71.3%) while more than half (54.2%) were Muslims. A greater proportion (49.0%) of the respondents had no formal education. More than two-thirds of the respondents were currently working (68.7%). Other socio-demographic characteristics are depicted in Table 1.

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency N=18402	%
Age (years)		
15-24	4743	25.8
25-34	7503	40.8
≥ 35	6156	33.4
Mean Age	30.48±8.6	
Educational level		
None	9009	49.0
Primary	3974	21.6
Secondary	4190	22.8
Tertiary	1229	6.6
Working status		
Not working	5761	31.3
Currently working	12641	68.7
Religion		
Christianity	7951	43.2
Islam	9968	54.2
Others	483	2.6
Wealth Index		
Poorest	4866	26.4
Poorer	4000	21.7
Middle	3393	18.4
Richer	3165	17.2
Richest	2978	16.2
Residence		
Urban	5278	28.7
Rural	13124	71.3
Region		
North Central	3286	17.9
North East	3671	19.9
North West	5022	27.3
South East	1537	8.4
South West	2193	11.9
South-South	2693	14.6

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency N=18402	%
Age (years)		
15-24	4743	25.8
25-34	7503	40.8
≥ 35	6156	33.4
Mean Age	30.48±8.6	
Educational level		
None	9009	49.0
Primary	3974	21.6
Secondary	4190	22.8
Tertiary	1229	6.6
Working status		
Not working	5761	31.3
Currently working	12641	68.7
Religion		
Christianity	7951	43.2
Islam	9968	54.2
Others	483	2.6
Wealth Index		
Poorest	4866	26.4
Poorer	4000	21.7
Middle	3393	18.4
Richer	3165	17.2
Richest	2978	16.2
Residence		
Urban	5278	28.7
Rural	13124	71.3
Region		
North Central	3286	17.9
North East	3671	19.9
North West	5022	27.3
South East	1537	8.4
South West	2193	11.9
South-South	2693	14.6

4.2 Partner-related characteristics of respondents

Table 2 shows the partner related characteristics of respondents. With regards to partner's educational attainment, a larger proportion had no formal education, while 12% of respondents' partners had tertiary education. Majority of respondents' partners were currently working (98.9%). More than three-fifth (63.7%) of the respondents were in a union for less than 15 years.

Majority (90.6%) of the respondents lived together with their partner. A higher proportion (75.3%) of respondents were in monogamous unions.

Table 2: Partner-related characteristics of respondents

Variable	Frequency N=18402	%
Partner's educational level		
None	7594	41.3
Primary	3778	20.5
Secondary	4863	26.4
Tertiary	2167	11.8
Partner's working status		
Not working	205	1.1
Currently working	18197	98.9
Marital duration		
≤ 4 years	4308	23.4
5-9 years	4079	22.2
10-14 years	3335	18.1
≥ 15 years	6680	36.3
Living arrangement		
Partner lives in house	16666	90.6
Partner lives elsewhere	1736	9.4
Number of partner's other wives		
None	13857	75.3
One or more than one	4545	24.7

4.3 Fertility-related characteristics of respondents

Table 3 shows the fertility-related characteristics of the respondents. More than half (54.8%) of the respondents had one to four children. A greater proportion (86.8%) of the respondents were currently not using any form of contraception. Few (13.1%) of the respondents had ever terminated a pregnancy.

Table 3: Fertility-related characteristics of respondents

Variable	Frequency N=18402	%
Number of children ever born		
0	1684	9.2
1-4	10081	54.8
≥ 5	6637	36.0
Use of contraceptive method		
None	15968	86.8
Traditional	743	4.0
Modern	1691	9.2
Ever had pregnancy terminated		
Yes	2417	13.1
No	15985	86.9

4.4 Sexual behaviours of respondents

The sexual behaviours of respondents are highlighted in Table 4. Majority (87.4%) of the respondents had only been married once. Almost one-third (30.9%) of the respondents had more than one sexual partner in her lifetime. Out of the 16,850 who responded to the question on "age at first sex" a higher proportion (42.5%) of the respondents had their sexual debut at 15 years and below. Of the 17,058 who responded to the question on "alcohol consumption during last sexual intercourse" the majority (90.7%) of respondents did not take alcohol during the last sexual intercourse.

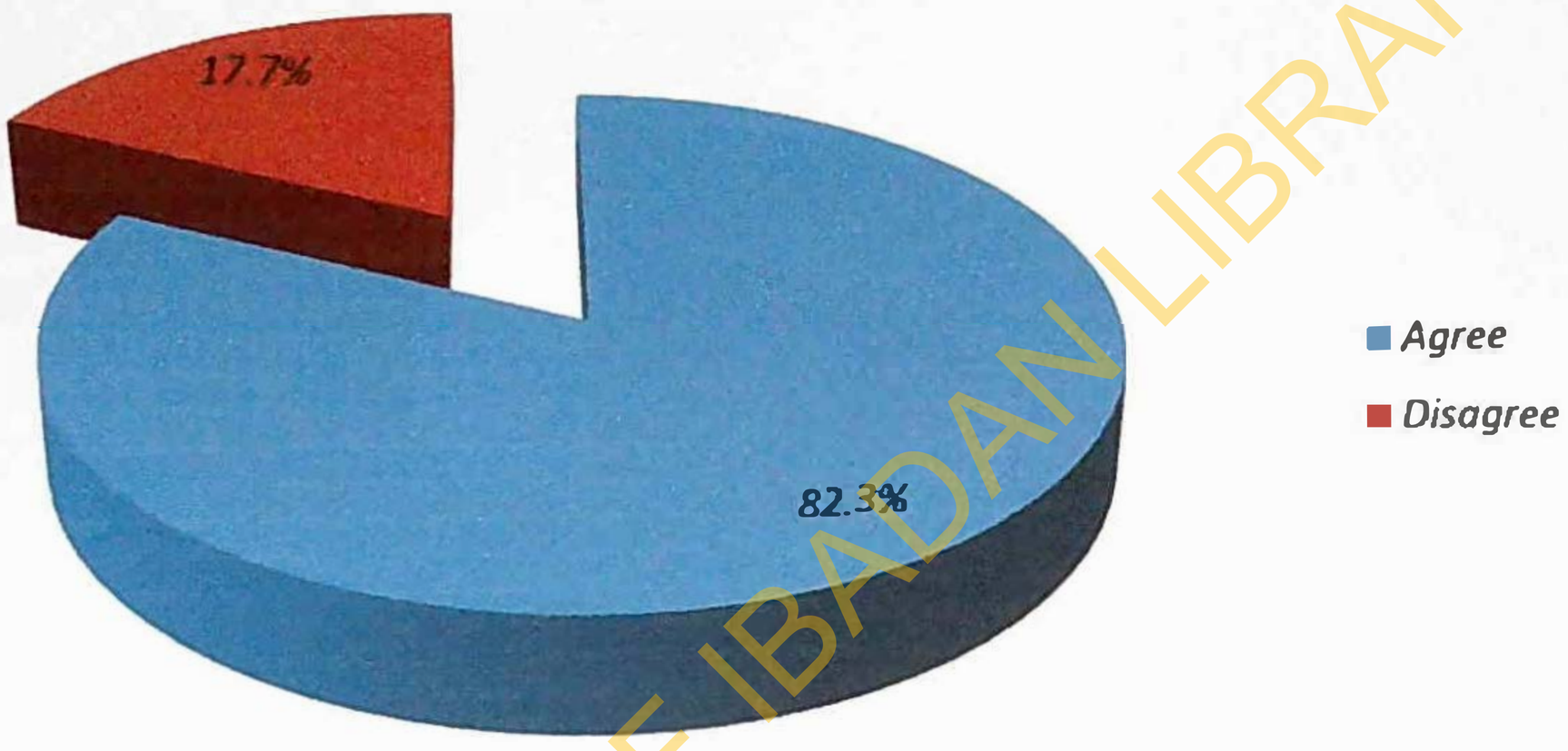
Table 4: Sexual behaviours of respondents

Variable	Frequency N=18402	%
Number of Unions/ Number of times married		
Once	16079	87.4
More than once	2323	12.6
Total lifetime number of sexual partners		
One	12718	69.1
More than one	5684	30.9
Age at first sex		
15 years and below	7827	42.5
16-17 years	3262	17.7
18 years and above	5761	31.3
Missing	1552	8.4
Alcohol consumption during last sexual intercourse		
Yes	370	2.0
No	16688	90.7
Missing	1344	7.3

4.5 Women's autonomy

Figure 3 shows attitude towards a wife's right to refuse sex if he has an STD. Majority (82.3%) of the respondents believed a wife has the right to refuse sex if her partner has an STD.

Figure 3: Attitude towards a wife's right to refuse sex if he has an STD

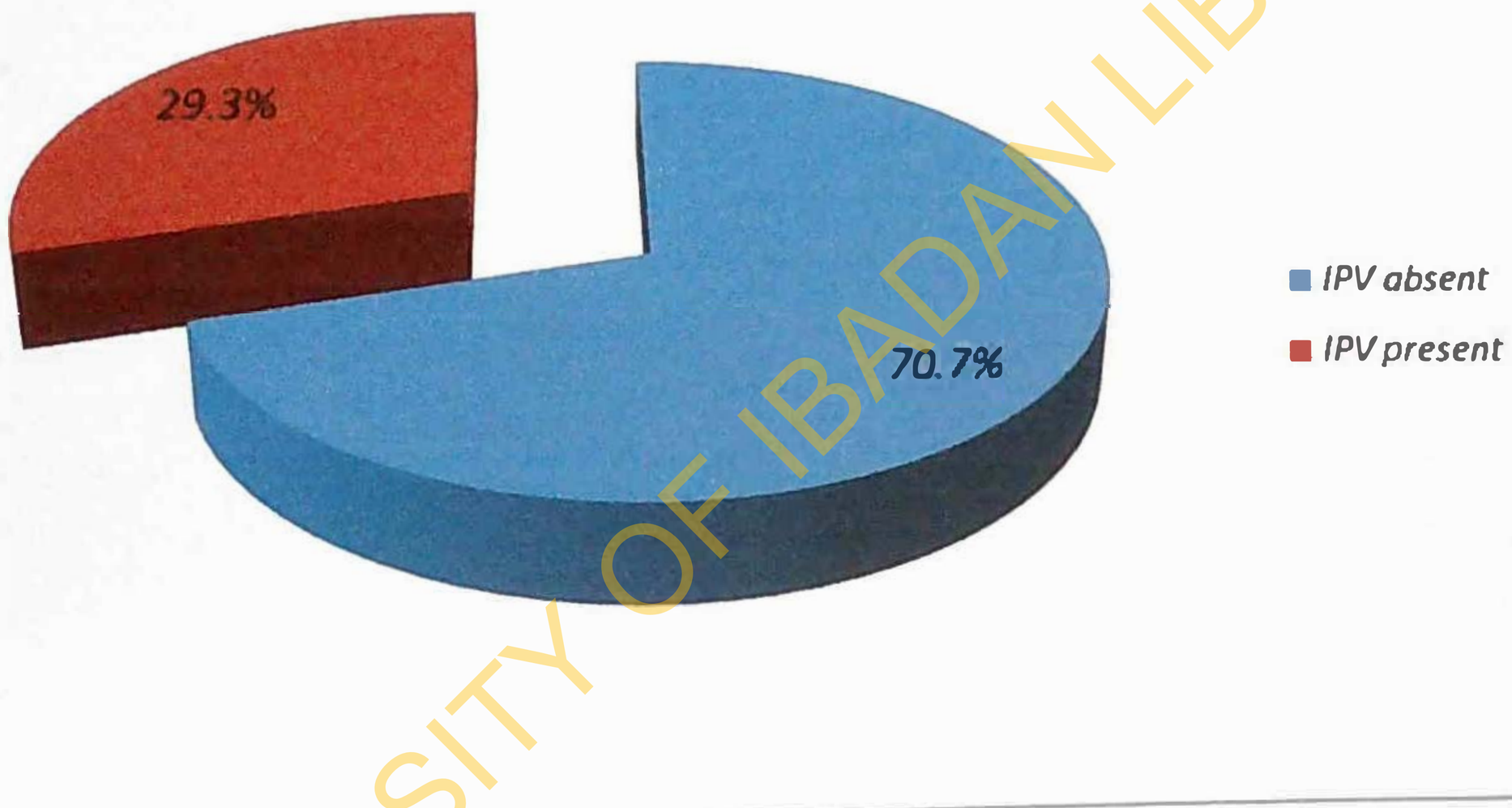


4.6 Prevalence and types of intimate partner violence

4.6.1 Prevalence of intimate partner violence among currently married women

Figure 4 shows the proportion of currently married women experiencing any form of IPV. More than a quarter (29.3%) of the respondents experienced IPV.

Figure 4: Proportion of currently married women experiencing any IPV



4.6.2 Experience of IPV by types in currently married women

Table 5 illustrates the experience of different types IPV in currently married women. Majority (22.1%) of the respondents experienced emotional IPV while the least experienced form of violence was sexual IPV (4.4%).

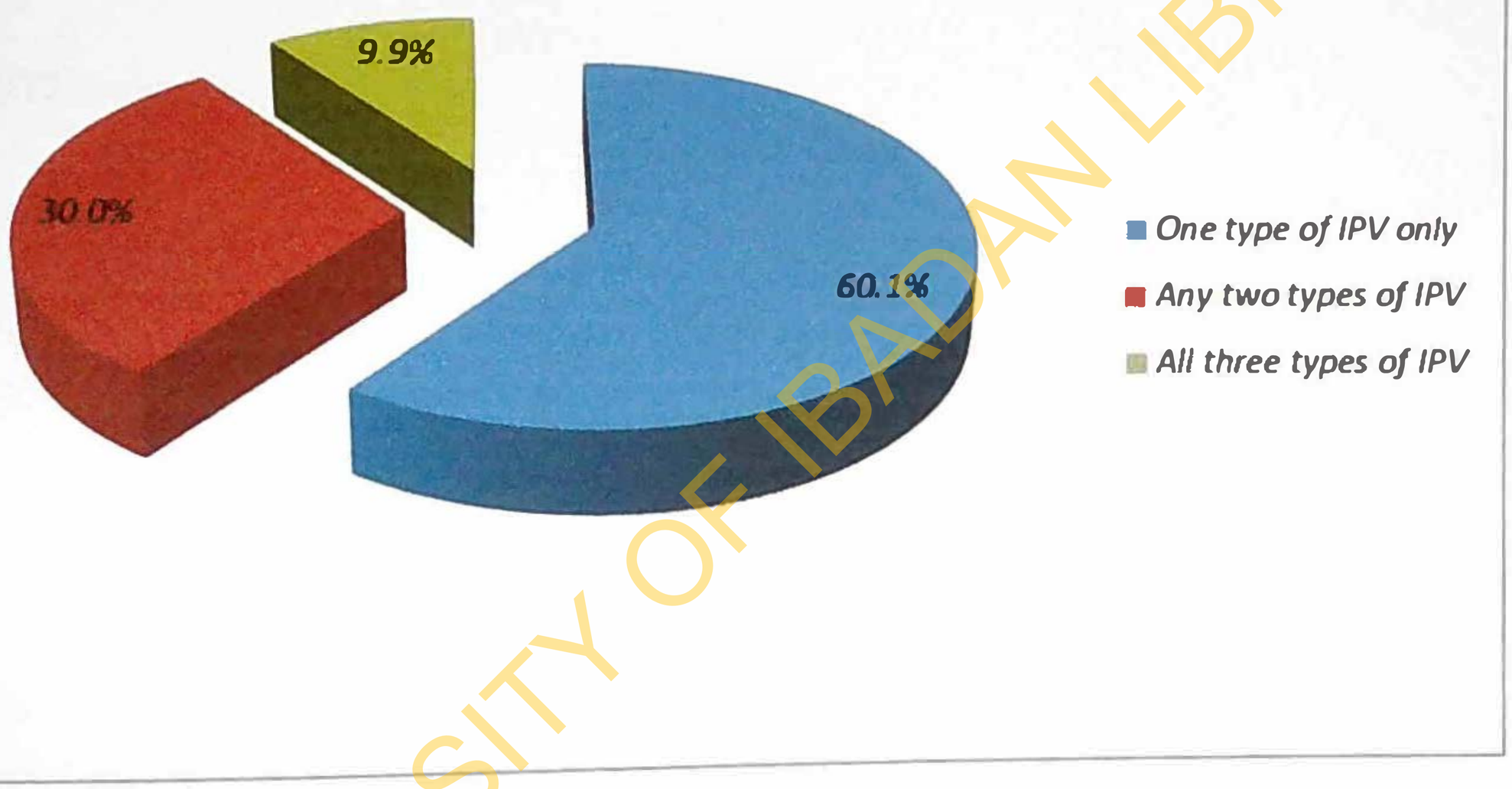
Table 5: Experience of IPV by types in currently married women

Variable	Frequency N=18402	%
Physical IPV		
Yes	3185	17.3
No	15217	82.7
Sexual IPV		
Yes	803	4.4
No	17599	95.6
Emotional IPV		
Yes	4073	22.1
No	14329	77.9

4.6.3 Experience of IPV by number of types in currently married women

Figure 5 shows the number of types IPV experienced in currently married women. Majority (60.1%) of the respondents experienced just one type of IPV, 30.0% two types while 9.9% experienced all three types.

Figure 5: Number of types of IPV experienced in currently married women



4.7 Prevalence of sexually transmitted infections and STI symptoms

4.7.1 STI symptoms among currently married women

Table 6 shows proportion of respondents with symptoms of STI. Majority of the respondents (4.8%) had genital discharge, 3.5% had genital sore while 3.2% had other symptoms of STI.

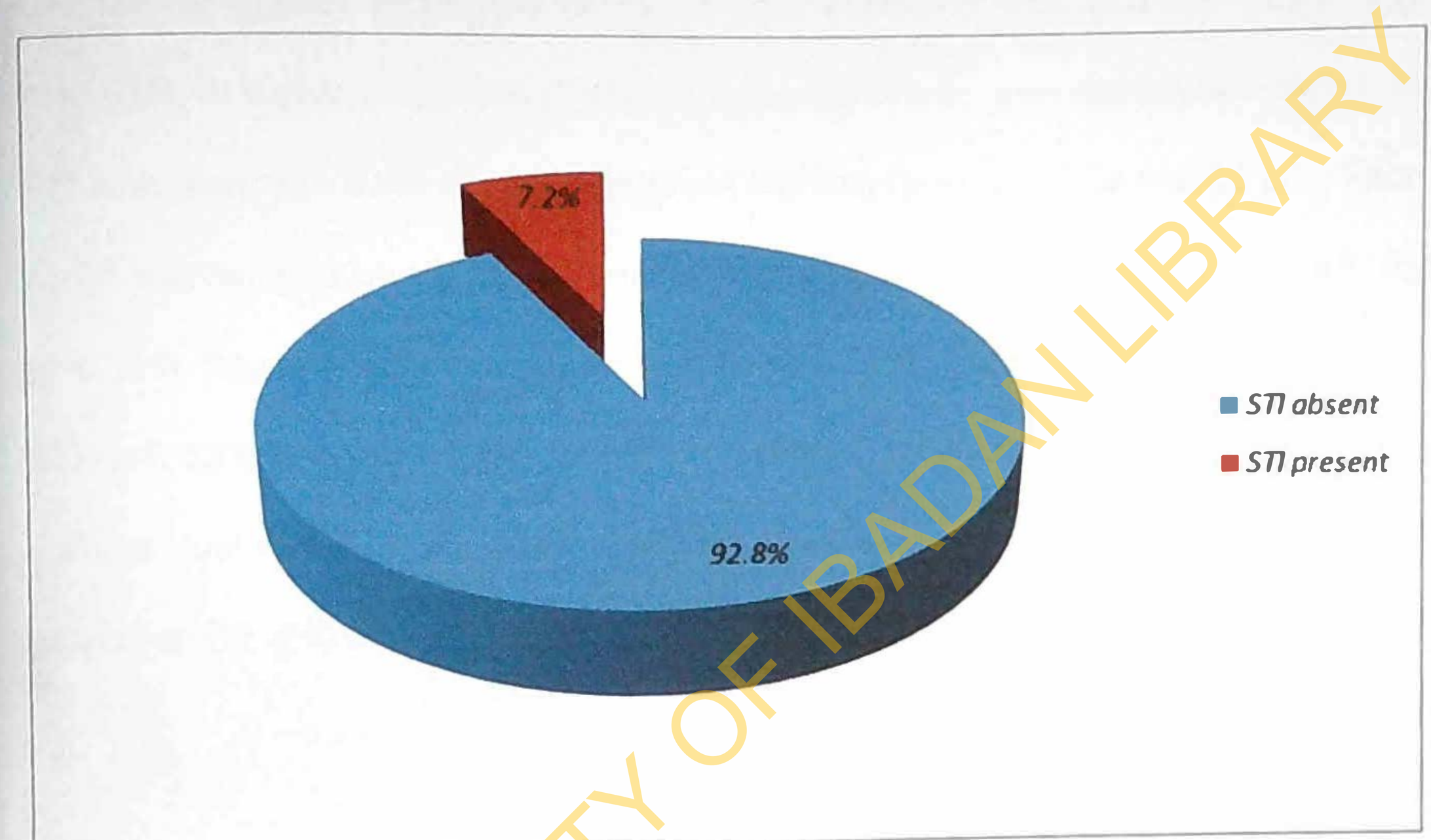
Table 6: STI symptoms among currently married women

Variable	Frequency N=18402	%
Genital Discharge		
Yes	879	4.8
No	17523	95.2
Genital Sore		
Yes	646	3.5
No	17756	96.5
Other STI symptoms		
Yes	581	3.2
No	17821	96.8

4.7.2 Prevalence of STI among currently married women

The prevalence of STI in 12 months preceding the survey is shown in Figure 6. Prevalence of STI is 7.2% among the respondents.

Figure 6: Prevalence of STI among currently married women



4.8 Association between respondents' socio-demographic characteristics and history of STIs

Table 7 below highlights the association between the respondents' socio-demographic characteristics and history of STI in the past 12 months. Almost equal proportions of women reported history of STI across all the age groups (p=0.757). Respondents with tertiary education reported the highest proportion (8.0%) of STI, compared with all other educational groups (p=0.037). A higher proportion (7.4%) of respondents who were employed reported having an STI compared with 6.8% of respondents not working (p=0.127). The highest proportion (9.3%) of STI was reported among respondents in other religion. The result is not statistically significant (p=0.130). Respondents in the middle wealth quintile reported the highest proportion (7.8%) of STI (p=0.020). A higher proportion (7.4%) of urban dwellers reported having STI compared with 7.1% of rural dwellers (p=0.615). Respondents from the south east region reported the highest proportion (11.2%) of STI compared to all other regions (p < 0.001)

Table 7: Association between respondent's socio-demographic characteristics and history of STI

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Age (years)				
15-24	345 (7.3)	4398 (92.7)	0.556	0.757
25-34	549 (7.3)	6954 (92.7)		
≥ 35	431 (7.0)	5725 (93.0)		
Educational level				
None	689 (7.6)	8320 (92.4)	8.479	0.037*
Primary	266 (6.7)	3708 (93.3)		
Secondary	272 (6.5)	3918 (93.5)		
Tertiary	98 (8.0)	1131 (92.0)		
Working status				
Not working	390 (6.8)	5371 (93.2)	2.328	0.127
Currently working	935 (7.4)	11706 (92.6)		
Religion				
Christianity	553 (7.0)	7398 (93.0)	4.083	0.130
Islam	727 (7.3)	9241 (92.7)		
Others	45 (9.3)	438 (90.7)		
Wealth index				
Poorest	371 (7.6)	4495 (92.4)	5.386	0.020*
Poorer	293 (7.3)	3707 (92.7)		
Middle	266 (7.8)	3127 (92.2)		
Richer	203 (6.4)	2962 (93.6)		
Richest	192 (6.4)	2786 (93.6)		
Residence				
Urban	388 (7.4)	4890 (92.6)	0.252	0.615
Rural	937 (7.1)	12187 (92.9)		
Region				
North Central	269 (8.2)	3017 (91.8)	124.571	< 0.001*
North East	302 (8.2)	3369 (91.8)		
North West	386 (7.7)	4636 (92.3)		
South East	172 (11.2)	1365 (88.8)		
South-South	98 (4.5)	2095 (95.5)		
South-West	98 (3.6)	2595 (96.4)		

*Statistically significant at $p < 0.05$

4.9 Association between partner-related characteristics of respondents and history of STI

The association between partner- related characteristics of respondents and history of STI in the past 12 months is highlighted in Table 8. Respondents whose partners had tertiary education reported the highest proportion (7.9%) of STI (p=0.021). Over eight percent of respondents whose partners were not working reported STI compared with 7.2% of respondents whose partners were working (p=0.543). Respondents who had been married for 15 years and above reported a higher proportion (7.5%) of STI compared with 7.0% of respondents married for less than 15 years (p=0.259). A higher proportion (7.2%) of respondents who lived together with their partners reported STI compared with 6.9% of respondents whose partners lived elsewhere (p=0.590). Almost eight percent of respondents whose partners had one or more wives reported having STI compared with 7.0% of respondents whose partners had no other wife (p=0.036)

Table 8: Association between partner-related characteristics of respondents and history of STI

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Partner's educational level				
None	578 (7.6)	7016 (92.4)	9.716	0.021*
Primary	269 (7.1)	3509 (92.9)		
Secondary	306 (6.3)	4557 (93.7)		
Tertiary	172 (7.9)	1995 (92.1)		
Partner's working status				
Not working	17 (8.3)	188 (91.7)	0.370	0.543
Currently working	1308 (7.2)	16889 (92.8)		
Marital duration				
≤ 4 years	286 (6.6)	4022 (93.4)	3.789	0.285
5-9 years	307 (7.5)	3772 (92.5)		
10-14 years	232 (7.0)	3103 (93.0)		
≥ 15 years	500 (7.5)	6180 (92.5)		
Living arrangement				
Partner lives in house	1195 (7.2)	15322 (92.8)	0.290	0.590
Partner lives elsewhere	130 (6.9)	1755 (93.1)		
Number of partner's other wives				
None	966 (7.0)	12891 (93.0)	4.407	0.036*
One or more than one	359 (7.9)	4186 (92.1)		

*Statistically significant at $p < 0.05$

4.10 Association between fertility-related characteristics of respondents and history of STI

Table 9 shows association between fertility-related characteristics of respondents and history of STI in the past 12 months. Respondents who had five or more children reported a slightly higher proportion (7.5%) of STI compared with those who had less than four or no children (p=0.390). The highest proportion (8.3%) of STI was reported among respondents who used traditional method of contraception (p=0.466). A significantly higher proportion (9.4%) of respondents who have had pregnancy ~~termination~~ reported having STI compared with respondents who have not had termination of pregnancy (p<0.001).

Table 9: Association between fertility-related characteristics of respondents and history of STI

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Number of children ever born				
0	118 (7.0)	1566 (93.0)	1.885	0.390
1-4	706 (7.0)	9375 (93.0)		
≥ 5	501(7.5)	6136 (92.5)		
Use of contraceptive method				
None	1143 (7.2)	14825 (92.8)	1.526	0.466
Traditional	62 (8.3)	681 (91.7)		
Modern	120 (7.1)	1571 (92.9)		
Pregnancy termination				
Yes	1098 (6.9)	2190 (90.6)	19.999	<0.001*
No	227 (9.4)	14887 (93.1)		

*Statistically significant at p< 0.05

4.11 Association between sexual behaviours of respondents and history of STI

The association between sexual behaviours of respondents and history of STI in the past 12 months is highlighted in Table 10. A higher proportion (8.3%) of respondents who had been married more than once reported having STI compared with 7.0% of respondents who had only been married once (p=0.027). A higher proportion (7.9%) of respondents who had more than one sexual partner reported having STI compared with 6.9% of respondents with only one partner (p=0.012). A higher proportion (8.0%) of respondents who experienced their first sexual intercourse 15 years and below reported STI compared respondents whose sexual debut was 16 years and above (p< 0.001). A lower proportion (3.8%) of respondents who drank alcohol during the last sexual intercourse reported having STI compared with 7.0% of respondents who did not take alcohol during last sexual intercourse.

Table 10: Association between sexual behaviours of respondents and history of STI

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Number of Unions/ Number of times married				
Once	1132 (7.0)	14947 (93.0)	4.884	0.027*
More than once	193 (8.3)	2130 (91.7)		
Total lifetime number of sexual partners				
One	875 (6.9)	11843 (93.1)	6.322	0.012*
More than one	450 (7.9)	5234 (92.1)		
Age at first sex				
≤15 years	629 (8.0)	7198 (92)	23.328	< 0.001*
16-17 years	229 (7.0)	3033 (93.0)		
≥18 years	339 (5.9)	5422 (94.1)		
Alcohol consumption during last sexual intercourse				
Yes	511 (3.8)	319 (86.2)	25.175	< 0.001*
No	1167 (7.0)	15521 (93.0)		

*Statistically significant at $p < 0.05$

4.12 Association between women's autonomy and history of STI

Table 11 shows the association between women's autonomy and history of STI in the past 12 months. A higher proportion (10.2%) of respondents who had poor attitude towards wife's right to refuse sex if partner has an STD reported having STI compared with 6.6% of respondents who had good attitude ($p<0.001$).

Table 11: Association between STI and women's autonomy

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Attitude towards a wife's right to refuse sex if he has an STD				
Agree	994 (6.6)	14157 (93.4)	52.519	< 0.001*
Disagree	331 (10.2)	2920 (89.8)		

*Statistically significant at $p< 0.05$

4.13 Association between experience of any IPV and history of STI

Table 12 highlights the association between experience of any IPV and history of STI in the past 12 months. A higher proportion (8.7%) of respondents with any IPV reported having STI compared with 6.6% of respondents who did not experience any IPV (<0.001)

Table 12: Association between experience of any IPV and history of STI

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Any IPV				
Yes	467 (8.7)	4920 (91.3)	24.589	<0.001
No	858 (6.6)	12157 (93.7)		

*Statistically significant at p< 0.05

4.14 Association between experience of types of IPV and history of STI

Table 13 highlights the association between experience of IPV and history of STI in the past 12 months. A higher proportion (10.2%) of respondents with physical IPV reported having STI compared with 6.6% of respondents who did not experience physical IPV ($p< 0.001$). A higher proportion (13.2%) of respondents with sexual IPV reported having STI compared with 6.9% of respondents who did not experience sexual IPV ($p< 0.001$). A higher proportion (8.9%) of respondents with emotional IPV reported having STI compared with 6.7% of respondents who did not experience emotional IPV ($p< 0.001$). There was an increase in the proportion of STI as the number of IPV increased. The highest proportion (14.2%) of respondents who experienced all three types of IPV reported having STI ($p <0.001$).

Table 13: Association between experience of types of IPV and history of STI

Variable	STI		χ^2	p-value
	Yes Frequency (%)	No Frequency (%)		
Physical IPV				
Yes	325 (10.2)	2860 (89.8)	52.010	< 0.001*
No	1000 (6.6)	14217 (93.4)		
Sexual IPV				
Yes	106 (13.2)	697 (86.8)	45.240	< 0.001*
No	1219 (6.9)	16380 (93.1)		
Emotional IPV				
Yes	362 (8.9)	3711 (91.1)	22.292	< 0.001*
No	963 (6.7)	13366 (93.3)		
Number of types of IPV				
No IPV	858 (6.6)	12157 (93.4)	80.089	< 0.001*
One type only	216 (6.7)	3026 (93.3)		
Any two types	176 (10.9)	1440 (89.1)		
All three types	75 (14.2)	454 (85.8)		

*Statistically significant at $p< 0.05$

4.15 Adjusted predictors of STI with experience of any IPV as key covariate

Table 14 shows predictors of STI with experience of any IPV as key covariate. After controlling for all other variables in the model, currently married women who experience IPV were found to be 1.3 times more likely to report STI than currently married women who do not experience IPV [OR 1.357 (95% CI 1.188-1.551)] .

Women from the South-South and South West were significantly less likely to report STI [OR 0.405 (95% CI 0.306-0.535); OR 0.434 (95% CI 0.329-0.572) respectively] than respondents in the North Central region. Compared to women with no education, women with tertiary education were significantly more likely to report STI [OR 1.435 (95% CI 1.005-2.050)]. Women who had ever had a termination of pregnancy were significantly more likely than women who have never had a pregnancy terminated to report STI [OR 1.336 (95% CI 1.132-1.576)]. Women who had more than one sexual partner and who consumed alcohol during the last sexual intercourse were significantly more likely to report STI than women who had just one partner or did not consume alcohol during last sexual intercourse [OR 1.295 (95% CI 1.084-1.549); OR 2.000 (95% CI 1.432-2.792)] respectively. Women who had their sexual debut at 16-17 years or 15 years and below were significantly more likely to report STI than women who had their sexual debut 18 years and above [OR 1.270 (95% CI 1.047-1.539); OR 1.457 (95% CI 1.224-1.734)]. Women who have less autonomy from poor attitude towards "wife's right to refuse sex if partner has an STD" were more likely to report STI than women who had more autonomy from good attitude towards "wife's right to refuse sex if partner has an STD" [OR 1.630 (95% CI 1.405-1.891)].

Table 14: Adjusted predictors of STI with experience of any IPV as key covariate

Variable	Odds Ratio	95% Confidence Interval	p-value
Any IPV			
Yes	1.357	1.188-1.551	< 0.001*
No (Ref)	1		
Wealth Index			
Poorest	0.821	0.674-1.000	0.050
Poorer	0.880	0.722-1.073	0.206
Richer	0.888	0.714-1.104	0.284
Richest	0.910	0.708-1.168	0.459
Middle (Ref)	1		
Region			
North East	1.105	0.899-1.359	0.341
North West	0.991	0.808-1.216	0.934
South East	1.225	0.952-1.575	0.115
South-South	0.405	0.306-0.535	< 0.001*
South West	0.434	0.329-0.572	< 0.001*
North Central (Ref)	1		
Respondents' Educational Level			
Primary	0.991	0.812-1.210	0.932
Secondary	1.139	0.897-1.446	0.285
Tertiary	1.435	1.005-2.050	0.047*
None (Ref)	1		
Partner's Educational Level			
Primary	1.078	0.886-1.310	0.453
Secondary	1.044	0.846-1.289	0.685
Tertiary	1.198	0.914-1.570	0.190
None (Ref)	1		
Number of partner's other wives			
One or more than one	1.130	0.976-1.309	0.102
None (Ref)	1		
Pregnancy termination			
Yes	1.336	1.132-1.576	0.001*
No (Ref)	1		
Number of Unions/ Number of times married			
More than once	0.946	0.755-1.185	0.629
Once (Ref)	1		
Total lifetime number of sexual partners			
More than one	1.295	1.084-1.549	0.004*
One (Ref)	1		
Age at first sex			
16-17 years	1.270	1.047-1.539	0.015*
≤15 years	1.457	1.224-1.734	< 0.001*
≥18 years (Ref)	1		
Alcohol consumption during last sexual intercourse			
Yes	2.000	1.432-2.792	< 0.001*
No (Ref)	1		

Attitude towards a wife's right to refuse sex if he has an STD			
Disagree	1.630	1.405-1.891	< 0.001*
Agree (Ref)	1		

4.16 Adjusted predictors of STI with experience of each type of IPV as key covariates

Table 15 shows predictors of STI with experience of each type of IPV as key covariates. After controlling for all other variables in the model, only physical and sexual IPV were significantly associated with STI. Respondents who reported experiencing any physical IPV were almost twice more likely to report STI than those who reported no physical IPV in the past 12 months [OR 1.699 (95% CI 1.420-2.034)]. Relative to women who reported no experience of sexual IPV, women who reported experiencing any sexual IPV were significantly more likely to report STI [OR 1.414 (95% CI 1.085-1.843)]. However, experiencing any emotional violence in the past 12 months was not significantly associated with STI [OR 0.959 (95% CI 0.815-1.129)]

Women from the South-South and South West were significantly less likely to report STI [OR 0.386 (95% CI 0.292-0.511); OR 0.437 (95% CI 0.332-0.576) respectively] than respondents in the North Central region. Compared to women with no education, women with tertiary education were significantly more likely to report STI [OR 1.469 (95% CI 1.027-2.100)]. Women who had ever had a termination of pregnancy were significantly more likely than women who have never had a pregnancy terminated to report STI [OR 1.329 (95% CI 1.126-1.569)]. Women who had more than one sexual partner and who consumed alcohol during the last sexual intercourse were significantly more likely to report STI than women who had just one partner or did not consume alcohol during last sexual intercourse [OR 1.260 (95% CI 1.053-1.508); OR 1.830 (95% CI 1.307-2.563)] respectively. Women who had their sexual debut at 16-17 years or 15 years and below were significantly more likely to report STI than women who had their sexual debut 18 years and above [OR 1.251 (95% CI 1.032-1.517); OR 1.447 (95% CI 1.216-1.722)]. Women who have less autonomy from poor attitude towards

"wife's right to refuse sex if partner has an STD" were more likely to report STI than women who had more autonomy from good attitude towards "wife's right to refuse sex if partner has an STD" [OR 1.612 (95% CI 1.389-1.869)].

Table 15: Adjusted predictors of STI with experience of each type of IPV as key covariates

Variable	Odds Ratio	95% Confidence Interval	p-value
Physical IPV			
Yes	1.699	1.420-2.034	< 0.001*
No (Ref)	1		
Sexual IPV			
Yes	1.414	1.085-1.843	0.010*
No (Ref)	1		
Emotional IPV			
Yes	0.959	0.815-1.129	0.614
No (Ref)	1		
Wealth Index			
Poorest	0.823	0.675-1.003	0.054
Poorer	0.882	0.723-1.076	0.215
Richer	0.897	0.721-1.115	0.326
Richest	0.926	0.721-1.191	0.550
Middle (Ref)	1		
Region			
North East	1.124	0.913-1.383	0.270
North West	1.069	0.870-1.315	0.524
South East	1.222	0.950-1.573	0.119
South-South	0.386	0.292-0.511	< 0.001*
South West	0.437	0.332-0.576	< 0.001*
North Central (Ref)	1		
Respondents' Educational Level			
Primary	0.973	0.797-1.189	0.792
Secondary	1.126	0.886-1.429	0.332
Tertiary	1.469	1.027-2.100	0.035*
None (Ref)	1		
Partner's Educational Level			
Primary	1.063	0.874-1.294	0.539
Secondary	1.039	0.841-1.282	0.725
Tertiary	1.190	0.908-1.561	0.208
None (Ref)	1		
Number of partner's other wives			
One or more than one	1.136	0.981-1.316	0.089
None (Ref)	1		
Pregnancy termination			
Yes	1.329	1.126-1.569	0.001*
No (Ref)	1		
Number of Unions/ Number of times married			
More than once	0.972	0.776-1.218	0.808
Once (Ref)	1		
Total lifetime number of sexual partners			
More than one	1.260	1.053-1.508	0.011*
One (Ref)	1		

Age at first sex			
16-17 years	1.251	1.032-1.517	0.023*
≤15 years	1.447	1.216-1.722	< 0.001*
≥18 years (Ref)	1		
Alcohol consumption during last sexual intercourse			
Yes	1.830	1.307-2.563	< 0.001*
No (Ref)	1		
Attitude towards a wife's right to refuse sex if he has an STD			
Disagree	1.612	1.389-1.869	< 0.001*
Agree (Ref)	1		

4.17 Adjusted predictors of STI with number of types of IPV experienced as the key covariates

Table 16 shows predictors of STI with number of types of IPV experienced as the key covariates. After controlling for all other variables in the model, a dose-response relationship existed between the number of types of IPV and STI. As a woman experienced more forms of IPV, her risk of STI also increased. This relationship was however significant only for experiencing two or three types of IPV [OR 1.759 (95% CI 1.446-2.139); OR 2.193 (95% CI 1.636-2.941) respectively] and not for one type of IPV [OR 1.068 (95% CI 0.903-1.265)].

Women from the South-South and South West were significantly less likely to report STI [OR 0.402 (95% CI 0.304-0.532); OR 0.440 (95% CI 0.334-580) respectively] than respondents in the North Central region. Compared to women with no education, women with tertiary education were significantly more likely to report STI [OR 1.445 (95% CI 1.011-2.066)]. Women who had ever had a termination of pregnancy were significantly more likely than women who have never had a pregnancy terminated to report STI [OR 1.326 (95% CI 1.123-1.566)]. Women who had more than one sexual partner and who consumed alcohol during the last sexual intercourse were significantly more likely to report STI than women who had just one partner or did not consume alcohol during last sexual intercourse [OR 1.269 (95% CI 1.061-1.518); OR 1.891 (95% CI 1.351-2.647)] respectively. Women who had their sexual debut at 16-17 years or 15 years and below were significantly more likely to report STI than women who had their sexual debut 18 years and above [OR 1.254 (95% CI 1.034-1.520); OR 1.448 (95% CI 1.217-1.724)]. Women who have less autonomy from poor attitude towards "wife's right to refuse sex if partner has an STD" were more likely to report STI than women

who had more autonomy from good attitude towards "wife's right to refuse sex if partner has an STD" [OR 1.613 (95% CI 1.391-1.872)].

Table 16: Adjusted predictors of STI with number of types of IPV experienced as the key covariates

Variable	Odds Ratio	95% Confidence Interval	p-value
Number of types of IPV			
One type only	1.068	0.903-1.265	0.441
Any two types	1.759	1.446-2.139	< 0.001*
All three types	2.193	1.636-2.941	< 0.001*
No IPV (Ref)	1		
Wealth Index			
Poorest	0.824	0.676-1.004	0.055
Poorer	0.884	0.725-1.078	0.225
Richer	0.895	0.720-1.113	0.319
Richest	0.922	0.718-1.185	0.526
Middle (Ref)	1		
Region			
North East	1.120	0.911-1.378	0.283
North West	1.040	0.847-1.278	0.706
South East	1.213	0.943-1.560	0.134
South-South	0.402	0.304-0.532	< 0.001*
South West	0.440	0.334-0.580	< 0.001*
North Central (Ref)	1		
Respondents' Educational Level			
Primary	0.984	0.805-1.202	0.873
Secondary	1.131	0.891-1.437	0.311
Tertiary	1.445	1.011-2.066	0.043*
None (Ref)	1		
Partner's Educational Level			
Primary	1.703	0.882-1.305	0.481
Secondary	1.055	0.854-1.303	0.618
Tertiary	1.201	0.916-1.575	0.185
None (Ref)	1		
Number of partner's other wives			
One or more than one	1.134	0.979-1.314	0.093
None (Ref)	1		
Pregnancy termination			
Yes	1.326	1.123-1.566	0.001*
No (Ref)	1		
Number of Unions/ Number of times married			
More than once	0.962	0.768-1.206	0.740
Once (Ref)	1		
Total lifetime number of sexual partners			
More than one	1.269	1.061-1.518	0.009*
One (Ref)	1		
Age at first sex			
16-17 years	1.254	1.034-1.520	0.021*
≤15 years	1.448	1.217-1.724	< 0.001*
≥18 years (Ref)	1		

Alcohol consumption during last sexual intercourse			
Yes	1.891	1.351-2.647	< 0.001*
No (Ref)	1		
Attitude towards a wife's right to refuse sex if he has an STD			
Disagree	1.613	1.391-1.872	< 0.001*
Agree (Ref)	1		

CHAPTER FIVE

DISCUSSION

5.1 Prevalence of intimate partner violence

The overall prevalence of IPV was 29.3%. The finding is within the range of 20–71% reported in marriage or current partnerships in sub-Saharan Africa (Jewkes et al., 2002; Koenig et al., 2003). It is also in consonance with prevalence of 15-71% reported among ever-partnered women from the 15 sites surveyed in the World Health Organization Multi-country study (WHOMCS) (Abramsky et al., 2011). The rather low prevalence reported in this study may be due to under reporting as IPV is said to be shrouded in a "culture of silence"(Umeora et al., 2008) as well as the fact this study collected information among currently married women only.

Emotional violence was experienced by 22.1% of the respondents. This value is within the range of 20–75% among women who experienced emotional violence in the WHOMCS (Garcia-Moreno et al., 2005). It was the most common form of violence experienced by currently married women in this study. This can be explained by the fact that emotional violence is easier to perpetrate because it is not visible and can be subtle.

In all, 17.3% of the currently married women experienced physical violence from their intimate partners. This was in contrast with studies conducted in some parts of Africa which reported higher prevalence of physical IPV; for example, 45% of Liberian, 47% rural Tanzanian and 49% of rural Ethiopian married women ever experienced physical IPV(Ghana Demographic and Health Survey, 2008; Liberia Demographic and Health Survey, 2007; World Health Organization, 2005). This may be explained by sociocultural differences, such as lifestyles and beliefs, which exist between these countries. The prevalence obtained in this study was however much lower than that reported from other studies in southwestern Nigeria (Fawole et al., 2005;

Owoaje and OlaOlorun, 2012; Balogun et al., 2013). This may be as a result of methodological differences with these studies such as the type of instrument used in assessing violence. Another reason may be that this study was carried out among currently married women alone while those studies were conducted among ever partnered women in the reproductive age group. The prevalence of physical violence in this study was however within the range of 10–69% from population-based studies (Heise et al., 1999a; Krug et al., 2002; Garcia-Moreno and Watts, 2000) as well as 13–61% reported from the WHOMCS (Garcia-Moreno et al., 2005).

The least experienced type of IPV among the respondents was sexual violence, with a prevalence of 4.4%. This is consistent with the result from another study in which sexual violence was the least reported form of IPV (Balogun et al., 2013). It is however slightly lower than the range of 6–59% of women who ever experienced sexual violence in an intimate partnership (Garcia-Moreno et al., 2005). This may be under reported because sexual coercion within marriages is accepted in many cultures as men are seen as having unconditional sexual access to their wives. They therefore have the power to enforce this access through force, if necessary (Gaikwad et al., 2011).

In this study, most of the women experiencing IPV reported one type of IPV, this is in keeping with the study done in India where a larger proportion of women who experienced IPV reported one type of IPV (Winter and Stephenson, 2011). However, the presence of multiple types of IPV as also seen in this study corroborates the findings by Khan et al., (2000) and Gaikwad et al., (2011) which state that women can experience more than one type of violence.

5.2 Prevalence of sexually transmitted infections

The study found an overall prevalence of self-reported sexually transmitted infections among currently married women to be 7.2%. This prevalence was similar to that of Sierra Leone (8.2%), lower than that of Liberia (20.1%) and higher than that of Cote d'Ivoire (3.0%) and Senegal (1.6%) (Liberia Demographic and Health Survey, 2007; Cote D'Ivoire Demographic and Health survey, 2006; Sierra Leone Demographic and Health Survey, 2008; Senegal Demographic and Health and Multiple Indicators Survey, 2012). A possible explanation for the varied but low prevalence of self-reported STIs could be that married women's disclosure of STI may likely be inhibited as a result of the stigma associated with acquisition of STIs.

Although most cases of STIs are asymptomatic, the most reported symptom of STIs in this study was genital discharge. This is in consonance with the study conducted among married women in India (Winter and Stephenson, 2011). However, other studies have found genial ulcer and genital itching to be the commonest self-reported STI symptoms but also closely followed by genital discharge (Decker et al., 2008; Chen et al., 2002).

5.3 Intimate partner violence as a predictor of STI

This study has demonstrated the association between intimate partner violence and sexually transmitted infections among currently married women in Nigeria. When compared with currently married women who did not experience any form of IPV, it was found that currently married women who experienced any form of IPV had a higher prevalence of STI. After adjusting for possible confounders, currently married women who experienced any form of IPV were found to be 1.3 times more likely to report STI than currently married women who did not experience any form IPV. This is in keeping with reports from previous studies (Kishor, 2009;

Seth et al., 2010; Dhakal et al., 2014). Also, a randomized controlled trial based on computer-based intervention reported higher incidence of STI (hazard rate ratio 1.68) among women who were exposed to IPV compared to those not exposed (Allsworth et al., 2009).

It was seen in this study that physical and sexual violence remained significantly associated with STI after controlling for other factors. This corroborated with studies that have found similar association between physical and sexual IPV and STIs (Decker et al., 2008; Ellsberg et al., 2008; Winter and Stephenson, 2011; Stephenson et al., 2006). The association between physical and sexual IPV and STI could be explained by inability of women to make decisions regarding their sexual health and experience of genital trauma. In addition, this study showed that physical violence was a greater risk for STI than sexual violence. This finding was contrary to some studies that demonstrated sexual violence as the form of violence most closely associated with the risk of women having STI (Kishor, 2009; Stephenson et al., 2006). This difference may be as a result of underreporting of sexual violence.

In contrast to the study done by Winter and Stephenson (2011), there was no significant association between emotional violence and history of STIs after controlling for factors significant for STI acquisition. This may likely be explained by the fact that emotional violence is seen as a norm in this environment and therefore may not lead to psychosomatic manifestations.

Findings from this study also demonstrated the effect of multiple forms of IPV on STIs. The more the number of types of violence a woman experienced the more likely she would report experiencing an STI. This is in contrast with the study carried out by Decker et al (2008) in Bangladesh who reported that experience of both physical and sexual IPV was not associated with genital discharge or with genital sore/ulcer. It is likely that sociocultural and economic

distinctions between Nigeria and Bangladesh may explain the differences; second the sample sizes differ; a larger sample size results in more power and significance of association is more likely. Third, the Bangladesh study controlled for husband's recent STIs; however, this data did not include this information and it was therefore not controlled for in the models.

5.4 Other risk factors of sexually transmitted infections

Previous studies have shown associations between certain socio-demographic/personal factors such as respondent's age , duration of marriage, place of residence, wealth index, number of children ever born, pregnancy termination, use of contraceptives including women autonomy and STIs (Ravi and Nair, 2011; Winter and Stephenson, 2011; Decker et al., 2008). In this study, socioeconomic status of the woman and partner's education were not significant. In contrast, other studies have found socioeconomic status to be a good predictor of STIs for example; women from poor socioeconomic strata were more likely to have STI (Winter and Stephenson, 2011; Ravi and Nair, 2011). In addition, partner's education has been shown in a previous study to be a risk factor for STI (Winter and Stephenson, 2011)

This study however found those risk factors which retained significant association with STIs in multivariate analysis to include; respondents' educational status, pregnancy termination, total number of sexual partners, alcohol consumption during last sexual intercourse, age at first sex and women autonomy.

In contrast to a previous study (Ravi and Nair, 2011), this study found that women with tertiary education were significantly more likely to report STI. This finding is however consistent with the findings from previous studies (Kishor, 2009; Sarkar and Ghose, 2010) which show that the

proportion of women who report STI increase with their educational level. This may be because education gives confidence to women to speak out about their problems.

A history of termination of pregnancy was also found to predict STI. The reason for this may be because unwanted pregnancy might be the result of unsafe sexual behaviour, which creates dual risks for both pregnancy and exposure to STIs (Chen et al., 2002). Secondly, the procedure during induced abortion might facilitate the transmission of lower genital tract infections to upper genital tract and may cause serious complications and sequelae (Chen et al., 2002).

It was seen in this study, that having ever had multiple sexual partners predicted contracting STIs among the respondents. This result is consistent with findings from other studies (Ghebremicheal et al., 2009; Kishor, 2009). Early age at sexual debut was also found to be a predictor of STIs. In a study conducted in six countries namely Haiti, the Dominican Republic, India, Liberia, Kenya and Zambia using data from a representative sample of couples, it was found that in all countries except India, at least one in three married women first had sex before age 16, while more than half first had sex before age 16 in Liberia (Kishor, 2009). These reflect the negative influence of risky sexual behaviours on the acquisition of STIs.

Alcohol consumption during last sexual intercourse was found to predict STI by almost two-fold. This is in consonance with another study conducted in Tanzania which found that alcohol consumption was directly and positively associated with women having multiple sexual partners and, through this relationship, alcohol consumption was indirectly and positively related to having an STI (Ghebremicheal et al., 2009) This observation is not unexpected as alcohol consumption may strengthen a sense of invulnerability, reduce perceived importance of social norms, diminish awareness of high risk behaviours, and confound the drinker's ability to

negotiate interpersonal situations or interactions with the environment (Giesbrecht and Dick, 1993).

Gender power imbalances and lack of autonomy are the leading underlying factors for women's vulnerability to sexually transmitted infections (Gaikwad et al., 2011). This study found that women who had poor attitude towards a "woman's refusal to have sex if her husband has an STD" were more likely to present with STIs. This is in keeping with other studies that looked at the role of women's autonomy and acquisition of STIs (Ravi and Nair, 2011; Kishor, 2009).

5.5 Limitations of study

This study has a number of limitations. First, the cross-sectional nature of the data did not allow inferences to be drawn with respect to the causal relationships among variables. Second, STI is self-reported rather than laboratory confirmed. It has been reported from previous studies that there is a substantial disparity between laboratory-confirmed and self-reported STIs (Bulut et al., 1995). STIs could be under reported as a result of participants providing socially desirable responses to sensitive questions. Therefore, participant's self-reported sexual behaviours and STI history could be conservative estimates of their actual behaviour. Lastly, although response rate in DHS surveys are generally high, participants were encouraged to respond to every question and had the option of skipping certain questions if they felt uncomfortable. Therefore, missing data and nonresponse to specific questions could lead to a potential bias in the data. Despite these limitations, this study fills a large gap in the literature by demonstrating the contribution of IPV (specifically physical and sexual and the number of types of IPV) to women's risk of STIs in Nigeria.

5.6 Conclusion

Intimate partner violence has a profound effect on women's health particularly sexual health. About a third of the respondents had experienced IPV. The most prevalent type of violence was emotional violence. Although most of the currently married women reported one type of IPV, it was also shown that two or three types of IPV could coexist. A small proportion of currently married women had a recent history of STI with genital discharge being the most prevalent symptom. Married women who had tertiary education, had ever terminated a pregnancy, had ever had more than one sexual partner, had an early age at sexual debut, drank alcohol during the last sexual intercourse, and lacked autonomy in making decisions had the greatest risk of contracting STIs.

Findings from this study show that even after controlling for other covariates, currently married women who experienced any form of IPV were found to be more likely to report STI than currently married women who did not experience any form IPV. In addition, experience of physical and sexual IPV by currently married Nigerian women remained significantly associated with history of STIs. There was also a demonstrated significant association between experiencing two or three types of IPV and STIs. Therefore, women who present at sexually transmitted infections clinic should be screened for IPV, and those who have experienced IPV should also be screened for STIs, especially among women who report multiple types of violence.

5.7 Recommendations

1. Health care providers should be sensitized to the possible role of IPV when women present for gynaecologic care, specifically with STI symptoms. There is therefore a need to incorporate IPV screening and services in gynaecologic clinic settings.
2. Awareness campaigns on the prevention and spread of STIs should be targeted among the sexually active general population. These should include promotion of community awareness about STIs by the media and the establishment of STI clinics free of charge.
3. Intimate partner violence is a consequence of gender inequality therefore empowerment of women should be put in place to ensure equal opportunities for women to be employed so as to improve their ability in decision making with regards to their health and wellbeing.
4. Due the patriarchal nature of this country, some women are not aware of their fundamental human right hence may even justify violence perpetrated by their partners. Therefore, ending violence against women needs to be addressed at various levels. The coordinated efforts of various sectors such as legal, educational, medical etc. are essential to combat violence against women.
5. Existing policies laws and legislations on Gender Based Violence should be implemented and enforced at national and international levels.

REFERENCES

Abramsky, T., Watts, C., Garcia-Moreno, C., Devries, K., Kiss, L., Ellsberg, M., Jansen, H. A. & Heise, L. 2011. What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. *Biomed Central Public Health*, 11(109):1-17.

Allsworth, J. E., Anand, M., Redding, C. A. & Peipert, J. 2009. Physical and sexual violence and incident sexually transmitted infections *Journal of Women's Health*, 18(4):529-534.

Augenbraun, M., Wilson, T. E. & Allister, L. 2001. Domestic violence reported by women attending a sexually transmitted disease clinic. *Sexually Transmitted Diseases*, 28(3):143-147.

Balogun, M. O., Fawole, O. I., Owoaje, E. T. & Adedokun, B. 2013. Experience and attitude of rural women to intimate partner violence in Nigeria. *Journal of Public Health*, 21(4):333–341.

Bauer, H. M., Gibson, P., Hernandez, M., Kent, C., Klausner, J. & Bolan, G. 2002. Intimate partner violence and high-risk sexual behaviors among female patients with sexually transmitted diseases. *Sexually Transmitted Diseases*, 29:411-416.

Blanchard, J. F., O'neil, J., Ramesh, B. M., Bhattacharjee, P., Orchard, T. & Moses, S. 2005. Understanding the social and cultural contexts of female sex workers in Karnataka, India: implications for prevention of HIV infection. *Journal of Infectious Diseases*, 191(1):S139-S146.

Boyer, C. B., Shafer, M. B., L.M, P., Canchola, J., Moncada, J. & Schachter, J. 2006. Sociodemographic markers and behavioral correlates of sexually transmitted infections in a nonclinical sample of adolescent and young adult women *Journal of Infectious Diseases*, 194 (3):307-315.

Bulut, A., Yolsal, N., Filippi, V. & Graham, W. 1995. In search of truth: comparing alternative sources of information on reproductive tract infection. *Reproductive Health Matters*, (6):31-39.

C.D.C 2007. Sexually Transmitted Infections In Developing Countries: Current concepts and strategies on improving STI prevention, treatment, and control.

C.D.C. 2010. *Intimate Partner Violence: Risk and Protective Factors* [Online]. Available: http://www.cdc.gov/ViolencePrevention/intimatepartnerviolence html [Accessed 25th April 2012].

Campbell, J., Jones, A. S., Dienemann, J., Kub, J., Schollenberger, J., O'campo, P., Gielen, A. C. & Wynne, C. 2002. Intimate partner violence and physical health consequences. *Arch Intern Med*, 162(10):1157-63.

Chen, S. M., Van Den Hoek, A., Shao, C. G., Wang, L., Liu, D. C., Zhou, S. J., Peng, Y. C., Li, C. L. & Yin, X. F. 2002. Prevalence of and risk indicators for STIs among women seeking induced abortions in two urban family planning clinics in Shandong province, people's republic of China. *Sexually Transmitted Infections*, 78:1-3.

Chersich, M. F., Luchters, S. M., Malonza, I. M., Mwarogo, P., King'ola, N. & Temmerman, M. 2007. Heavy episodic drinking among Kenyan female sex workers is associated with unsafe sex, sexual violence and sexually transmitted infections. *International Journal of STD & AIDS*, 18:764–769.

Cook, J. & Bewley, S. 2008. Acknowledging a persistent truth: domestic violence in pregnancy. *Journal of the Royal Society of Medicine*, 101(7):358-63.

Cote D'ivoire Demographic and Health Survey 2006. Cote D'Ivoire: National Institute of Statistics Calverton, Maryland, U.S.A and ORC Macro

Dallabetta, G., Field, M. L., Lage, M. & Islam, Q. M. 2006. STDs: Global Burden and Challenges for Control.

Decker, M. R., Miller, E., Kapur, N. A., Gupta, J., Raj, A. & Silverman, J. G. 2008. Intimate partner violence and sexually transmitted disease symptoms in a national sample of married Bangladeshi women. *International Journal of Gynecology and Obstetrics*, 100:18-23.

Dhakal, L., Berg-Beckhoff, G. & Aro, A. R. 2014. Intimate partner violence (physical and sexual) and sexually transmitted infection: results from Nepal Demographuc Health Survey 2011. *International Journal of Women's Health*, 6:75-82.

Dickson, N., Paul, C., Herbison, P. & Silva, P. 1998. First sexual intercourse: Age, coercion, and later regrets reported by a birth cohort. *BMJ*, 316:29-33.

Díez, M. & Díaz, A. 2011. Sexually transmitted infections: Epidemiology and control. *Rev Esp Sanid Penit*, 13:58-66.

Duncan, M. E., Tibaux, G., Pelzer, A., Reimann, K., Peutherer, J. F., Simmonds, P., Young, H., Jamil, Y. & Daroughar, S. 1990. First coitus before menarche and risk of sexually transmitted disease. *Lancet*, 335:338-340.

Ellsberg, M., Jansen, H. A., Heise, L., Watts, C. H. & Garcia-Moreno, C. 2008. Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *Lancet*, 371(9619):1165-1172.

Fawole, O. I., Aderonmu, A. L. & Fawole, A. O. 2005. Intimate partner abuse: wife beating among civil servants in Ibadan, Nigeria. *Afr J Reprod Health*, 9(2):54-64.

Gaikwad, V., Madhukumar, S. & Sudeepa, D. 2011. An epidemiological Study of Domestic Violence Against Women and its Association with Sexually Transmitted Infections in Bangalore Rural. *Online J Health Allied Scs*, 10(3):3.

Garcia-Moreno, C., Jansen, H. A., Ellsberg, M., Heise, L. & Watts, C. 2005. WHO multicountry study on women's health and domestic violence against women. Geneva, Switzerland: World Health Organization.

Garcia-Moreno, C. & Watts, C. 2000. Violence against women: its importance for HIV/AIDS. *AIDS*, 14 Suppl 3:S253-S265.

Ghana Demographic and Health Survey 2008. Fact Sheet: Ghana. Calverton MD:National Population Commission and ORC Macro

Ghebremicheal, M., Paintsil, E. & Larsen, U. 2009. Alcohol Abuse, Sexual Risk Behaviors and Sexually Transmitted Infections in Women in Moshi Urban District, Northern Tanzania. *Sex Transm Dis*, 36(2):102-107.

Giesbrecht, N. & Dick, R. 1993. Societal norms and risk-taking behaviour: inter-cultural comparisons of casualties and alcohol consumption. *Addiction*, 88:867–876.

Greenberg, J., Magder, L. & Aral, S. 1992. Age at first coitus. A marker for risky sexual behaviour in women. *Sex Transm. Dis*, 19:331-334.

Heise, L., Ellsberg, M. & Gottemoeller, M. 1999a. Ending violence against women. *Population Reports*, (11):1-43.

Heise, L., Ellsberg, M. & Gottemoeller, M. 1999b. Ending Violence Against Women.
Heise, L., Ellsberg, M. & Gottmoeller, M. 2002. A global overview of gender-based violence. *Int J Gynaecol Obstet*, 78(1):S5-14.
Hellberg, D., Mogilevkina, I. & Mardh, P. 1999. Sexually tansmitted diseases and gnaecologic symptoms and signs in women with history of induced abortion *Sexually Transmitted Diseases*, 6(4):197-200.
Hindin, M., Kishor, S. & Ansara, D. L. 2008. Intimate Partner Violence among Couples in 10 DHS Countries: Predictors and Consequences. *DHS Analytical Studies* No. 18. Calverton, Maryland, USA: Macro International Inc.
Jamieson, D. J. & Steege, J. F. 1997. The association of sexual abuse with pelvic pain complaints in a primary care population. *Am J Obstet Gynecol*, 177(6):1408-1412.
Jewkes, R., Levin, J. & Penn-Kekana, L. 2002. Risk factors for domestic violence: findings from a South African cross-sectional study. *Soc Sci Med*, 55(9):1603-17.
Jewkes, R. K., Dunkle, K., Nduna, M. & Shai, N. 2010. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. *Lancet*, 376(9734): 41-48.
Kalichman, S. C., Williams, E. A., Cherry, C., Belcher, L. & Nachimson, D. 1998. Sexual coercion, domestic violence, and negotiating condom use among low-income African American women. *J Womens Health*, 7(3):371-378.
Kenya Demographic and Health Survey 2003. Calverton MD: National Population Commission and ORC Macro.
Kishor, S. 2009. Married Women's Risk of STIs in Developing Countries: The Role of Intimate Partner Violence and Partner's Infection Status *Violence Against Women*, 18(7):829–853.
Kishor, S. & Johnson, K. 2004. Profiling Domestic Violence—A Multi-Country Study. *ORC-Macro.*
Koenig, M. A., Lutalo, T., Zhao, F., Nalugoda, F., Wabwire-Mangen, F., Kiwanuka, N., Wagman, J., Serwadda, D., Wawer, M. & Gray, R. 2003. Domestic violence in rural Uganda: evidence from a community-based study. *Bull World Health Organ*, 81(1):53-60.
Krug, E. G., Mercy, J. A., Dahlberg, L. L. & Zwi, A. B. 2002. The world report on violence and health. 360:1083-8.
Liberia Demographic and Health Survey 2007. Monrovia, Liberia: Liberia Institute of Statistics and Geo-Information Services (LISGIS) and Macro International Inc.
Maman, S., Campbell, J., Sweat, M. D. & Gielen, A. C. 2000. The intersections of HIV and violence: directions for future research and interventions. *Social Science & Medicine*, 50(4):459-78.
Martin, S. L., Kilgallen, B., Tsui, A. O., Maitra, K., Singh, K. K. & Kupper, L. L. 1999. Sexual behaviours and reproductive health outcomes: associations with wife abuse in India. *JAMA*, 282 (20):1967-1972.
Obot, I. S. 2000. The measurement of drinking patterns and alcohol problems in Nigeria. *J Subst Abuse*, (12):169–181.
Owoaje, E. & Olaolorun, F. 2012. Women at risk of physical intimate partner violence: A cross-sectional analysis of a low-income community in Southwest Nigeria. *African Journal of Reproductive Health*, 16(1):43-54.
Ravi, R. & Nair, S. B. 2011. Correlates of sexually transmitted infections among women in southern India. *The Journal of Family Welfare*, 57(1):45-54.

Sarkar, S. & Ghose, S. 2010. STI in women attending a teaching hospital in the rural area of Puducherry. *Indian J. Prev. Soc. Med*, 41:216-219.

Senegal Demographic and Health and Multiple Indicators Survey 2012. L'Agence Nationale de la Statistique and ICF International : Key Findings. Calverton, Maryland, USA: ANSD and ICF International.

Seth, P., Raiford, J. L., Robinson, L. S., Wingood, G. M. & Diclemente, R. J. 2010. Intimate partner violence and other partner-related factors: correlates of sexually transmissible infections and risky sexual behaviours among young adult African American women. *Sex Health*, 7(1):25-30.

Sierra Leone Demographic and Health Survey 2008. Calverton, Maryland, USA: Statistics Sierra Leone (SSL) and ICF Macro

St. Louis, M. E., Wasserheit, J. N. & Gayle, H. D. 1997. Janus considers the HIV pandemic: Harnessing recent advances to enhance AIDS prevention. *Am J Public Health*, 87:10-12.

Standerwick, K., Davies, C., Tucker, L. & Sheron, N. 2007. Binge drinking, sexual behaviour and sexually transmitted infection in the UK. *Int J STD AIDS*, 18:810-813.

Stephenson, R., Koenig, M. A. & Ahmed, S. 2006. Domestic violence and symptoms of gynecologic morbidity among women in North India. *Int Fam Plan Perspect*, 32(4):201-208.

Thomas, J., Schoenbach, V., Weiner, D., Parker, E. & Earp, J. 1996. Rural gonorrhea in the southeastern United States: a neglected epidemic. *Am J Epidemiol* 143(269-77).

U.N.E.S.C.O-I.I.C.B.A. 2001. *Sexually Transmitted Diseases (STDs) in Africa Burden of Disease* [Online]. Available: http://library.unesco-iicba.org/ [Accessed 20th April 2013.

Uffah, J., Mbachu, D. & Onyegbula, S. 1995. Unequal rights discriminatory laws and practices against women in Nigeria. *Constitutional Rights Project, Lagos, Nigeria.*

Umeora, O. U., Dimejesi, B. I., Ejikeme, B. N. & Egwuatu, V. E. 2008. Pattern and determinants of domestic violence among prenatal clinic attendees in a referral centre, South-east Nigeria. *Journal of Obstetrics and Gynaecology* 28(8):769-74.

United Nations 1993. Declaration on the elimination of violence against women. New York.

W.H.O 2002. World Report on Violence and Health.

W.H.O. 2011. *Sexually transmitted infections : Fact sheet* [Online]. Available: http://www.who.int/mediacentre/factsheets/fs110/en/index.html [Accessed 20th April 2013.

W.H.O 2012. Global incidence and prevalence of selected curable sexually transmitted infections - 2008.

Wingood, G. M., Diclemente, R. J. & Raj, A. 2000. Identifying the prevalence and correlates of STDs among women residing in rural domestic violence shelters. *Women and Health*, 30 (4):15-26.

Winter, A. & Stephenson, R. 2011. Intimate Partner Violence and symptoms of sexually transmitted infections among married Indian women.

Wolff, B., Blanc, A. K. & Ssekamatte-Ssebuliba, J. 2000. The role of couple negotiation in unmet need for contraception and the decision to stop childbearing in Uganda. *Stud Fam Plann*, 31:124–137.

World Bank. 2008. World Development Report 2008. Available: http://go.worldbank.org/ [Accessed 20th April 2013].

World Health Organization 2002. World Report on Violence and Health.

World Health Organization 2005. WHO Multi-country Study on Women's Health and Domestic Violence against Women: summary report of initial results on prevalence, health outcomes and women's responses. Geneva, World Health Organization.

World Health Organization. 2008. *Multi-country study on women's health and domestic violence against women* [Online]. Available: http://www.who.int/gender/violence/who_multicountry_study/en/index.html [Accessed Accessed 30th March,2012.

Yoshihama, M. & Sorenson, S. B. 1994. Physical, sexual, and emotional abuse by male intimates: experiences of women in Japan. *Violence Vict*, 9(1): 63-77.

VARIABLES FROM QUESTIONNAIRE USED IN THE STUDY

Introduction and Consent

Greetings. My name is _____ and I am working with National Population Commission. We are conducting a national survey that asks women and men about various health issues. This study has been reviewed and granted approval by the National Health Research Ethics Committee, assigned number NHREC/01/01/2007, for the study period of February 22, 2008 to February 23, 2009. We would very much appreciate your participation in this survey. This information will help the government to plan health services. The survey usually takes between 20 and 30 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons. As part of the survey we would first like to ask some questions about your household. All of the answers you give will be confidential. Participation in the survey is completely voluntary. If we should come to any question you don't want to answer, just let me know and I will go on to the next question; or you can stop the interview at any time. However, we hope you will participate in the survey since your views are important. At this time, do you want to ask me anything about the survey? May I begin the interview now?

Signature of interviewer: _____ Date: _____

Region: _____

Section 1: Socio-demographic characteristics

1. How old were you at your last birthday? (in years).....

2. Are you currently married or living together with a man as if married?

   1. Yes, currently married ☐
   2. Yes, living with a man
   3. No, not in union

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

   1. Primary
   2. Secondary ☐
   3. Higher

4. What is your religion?

1. Catholic
2. Other Christian
3. Islam
4. Traditionalist
6. Other (specify)

5. What is your occupation? .....

6. Where do you reside?
   1. Urban
   2. Rural

7. Does your household have the following items which are in good working order?

	Items	Yes	No
1.	Electricity		
2.	Radio		
3.	Television		
4.	Mobile telephone		
5.	Non-mobile telephone		
6.	Refrigerator		
7.	Cable T.V		
8.	Generating set		
9.	Air conditioner		
10.	Computer		
11.	Electric iron		
12.	Fan		

Section 2: Partner-related characteristics

8. What was the highest level of school your partner attended?

1. Primary
2. Secondary
3. Higher

9. What is your husband's/ partner's occupation? .....

10. Is your husband/partner living with you now or is he staying elsewhere?

1. Living with her

2. Staying elsewhere ☐

11. How long have you been married/living with your husband/partner?.....

12. Does your husband/partner have other wives or does he live with other women as if married?

1. Yes

2. No ☐

3. Don't know

13. Including yourself, in total, how many wives or partners does your husband live with now as if married?.....

Section 3: Fertility-related characteristics

14. In TOTAL how many births have you had during your life?.....

15. Are you currently doing something or using any method to delay or avoid getting pregnant?

1. Yes

2. No ☐

16. What have you used or done?

1. No method

2. Used only folkloric ☐

3. Used only traditional

4. Used modern method

17. Have you ever had a pregnancy that miscarried, was aborted or ended in a still birth?

1. Yes

2. No ☐

Section 4: Respondents' sexual behaviours

Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues.

18. How old were you when you had sexual intercourse for the very first time?

..... (Age in years)

19. In total, with how many different people have you had sexual intercourse in your lifetime?

.....

20. The last time you had sexual intercourse did you or your partner drink alcohol?

1. Yes

2. No ☐

21. Have you been married or lived with a man only once or more than once?

1. Only once

2. More than once ☐

Section 5: Experience of Intimate partner violence

22. (Does/did) your husband ever do any of the following things to you?

S/N	Acts	Yes	No
1.	Slap you?		
2.	Twist your arm or pull your hair?		
3.	Push you, shake you, or throw something at you?		
4.	Punch you with his fist or with something that could hurt you?		
5.	Kick you, drag you or beat you up?		
6.	Try to choke you or burn you on purpose?		
7.	Threaten or attack you with a knife, gun, or any other weapon?		

23. (Does/did) your husband ever do any of the following things to you?

S/N	Acts	Yes	No
1.	Physically force you to have sexual Intercourse with him even when you did not want to?		
2.	Force you to perform any sexual acts you did not want to?		

24. Now if you will permit me, I need to ask some more questions about your relationship with your husband. (Does/did) your husband ever:

S/N	Acts	Yes	No
1.	Say or do something to humiliate you in front of others?		
2.	Threaten to hurt or harm you or someone close to you?		
3.	Insult you or make you feel bad about yourself?		

Section 6: History of sexually transmitted infections/Women Autonomy

Now I would like to ask you some questions about your health in the last 12 months.

25. During the last 12 months, have you had a disease which you got through sexual contact?

1. Yes ☐
2. No
3. Don't know

26. Sometimes women experience a bad smelling abnormal genital discharge. During the last 12 months, have you had a bad smelling abnormal genital discharge?

1. Yes ☐
2. No
3. Don't know

27 Sometimes women have a genital sore or ulcer. During the last 12 months, have you had a genital sore or ulcer?

1. Yes ☐
2. No
3. Don't know

28. Husbands and wives do not always agree on everything. If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in refusing to have sex with him?

1. Yes ☐

2. No

3. Don't know

28. Husbands and wives do not always agree on everything. If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in refusing to have sex with him?

1. Yes

2. No

3. Don't know

Print

Subject: DHS Download Account Application

From: archive@measuredhs.com (archive@measuredhs.com)

To: kemielove@yahoo.com;

Date: Tuesday, May 7, 2013 2:58 PM

See Attached Data Notes.

You have been authorized to download data from the Demographic and Health Surveys (DHS) on-line archive. This authorization is for unrestricted countries requested on your application.

All DHS data should be treated as confidential, and no effort should be made to identify any household or individual respondent interviewed in the survey.

The data sets must not be passed on to other researchers without the written consent of DHS. Users are requested to submit a copy of any reports/publications resulting from using the DHS data files. These reports should be sent to the attention of the DHS Data Archive: archive@measuredhs.com

To begin downloading datasets, please login at http://www.measuredhs.com/data/dataset_admin/login_main.cfm. Once you are logged in, you may also edit your contact information, change your email/password, request additional countries or Edit/Modify an existing Description of Project.

Some resources to help you analyze DHS data efficiently are available at:
http://measuredhs.com/data/Using-Datasets-for-Analysis.cfm and on the MEASURE DHS User Forum at: http://userforum.measuredhs.com

The files you will download are in zipped format and must be unzipped before analysis. Following are some guidelines:

After unzipping, print the file with the .DOC extension (found in the Individual/Male Recode Zips). This file contains useful information on country specific variables and differences in the Standard Recode definition.

Please download the DHS Recode Manual: http://measuredhs.com/publications/publication-dhsg4-dhs-questionnaires-and-manuals.cfm

The DHS Recode Manual contains the documentation and map for use with the data. The Documentation file contains a general description of the recode file, including the rationale for recoding; coding standards; description of variables etc. The Map file contains a listing of the standard dictionary with basic information relating to each variable.

It is essential that you consult the questionnaire for a country, when using the data files. Questionnaires are in the appendices of each survey's final report: http://measuredhs.com/publications/publications-by-type.cfm

We also recommend that you make use of the Data Tools and Manuals:

1

http://www.measuredhs.com/accessurveys/technical_assistance.cfm

DHS statistics can also be obtained using the STATcompiler tool: http://www.statcompiler.com. This tool allows users to select countries and indicators to create customized tables. It accesses nearly all of the indicators that are published in the final reports. Authorization is not needed to use the STATcompiler.

We highly recommend that dataset users register to participate in the MEASURE DHS User Forum at: http://userforum.measuredhs.com. The User Forum is an online community of DHS data users and contains discussions about many DHS analysis and dataset topics. Please search the contents of the forum, and if you do not see your question addressed, consider posting a new question for users to discuss.

If you have any questions or need assistance, please send an email to: archive@measuredhs.com

MEASURE DHS Data Archive
ICF International
11785 Beltsville Drive
Calverton, MD 20705

LOGIN INFORMATION:
Login Email: kemielove@yahoo.com
Password: immidun