RISK FACTORS OF SEXUALLY TRANSMITTED INFECTIONS AMONG MARKET DWELLERS IN IBADAN, OYO STATE NIGERIA

BY

FAPOHUNDA OLANIKE VICTORIA

B.Sc. (Hons.) Public Health (Ilishan)

MATRIC NO: 182950

A PROJECT IN THE DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS SUBMITTED TO THE FACULTY OF PUBLIC HEALTH, COLLEGE OF MEDICINE, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE REQUIREMENTS FOR THE

DEGREE OF

MASTER OF PUBLIC HEALTH

(FIELD EPIDEMIOLOGY)

UNIVERSITY OF IBADAN, NIGERIA

JANUARY, 2016

CERTIFICATION

This is to certify that Fapohunda Olanike Victoria carried out this work in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria.

.....

PROF. Olufunmilayo. I. FAWOLE

MBBS.(Ib),Msc (Epid & Bio) (Wits), FMCPH, (Nig),FWACP Cert.Clin.Epid (Practice), F Med.Edu (SA)

Department of Epidemiology & Medical Statistics,

College of Medicine, University of Ibadan,

Ibadan, Nigeria

.....25/02/16.....

Dr. A.T. SALAWU (Co-Supervisor)

MBBS (Ib), Msc. Epid (Ib), MBA(Ib)

Department of Epidemiology & Medical Statistics,

College of Medicine, University of Ibadan,

Ibadan, Nigeria

DEDICATION

This work is dedicated to Almighty God, the Immortal, and Invisible, who made the project possible from the onset to completion.

ACKNOWLEDGEMENT

I give glory and honour to Almighty God for His faithfulness and unfailing provision and also for being my source of strength and inspiration.

My profound gratitude goes to Prof. Olufunmilayo I .Fawole - Head of Department and my primary Supervisor who gave her time, attention, patience, criticism to ensure that a qualitative and highly academic research project was carried out. It is a privilege to have worked under your supervision Ma. Also, my sincere appreciate goes to my co-supervisor, Dr. Taofeek A. Salawu, for his immense contribution, encouragement, patience and support towards the completion this work. I am grateful Sir.

I specially appreciate all my lecturers and all Non – Academic Staffs in the Department of Epidemiology and Medical Statistics for their encouragement and support throughout the duration of the MPH programme. I am glad to have tapped from your wealth of professional experience and knowledge. Equally, I appreciate Dr Babatunde O. Adedokun for his unique and precise contribution towards ensuring the success of this project work. Thank you Sir.

Special thanks and appreciation to my Parents, Elder. Samuel A. Fapohunda and D.A.M. Eniola M. Fapohunda for their immense care, encouragement and support, morally, spiritually, and financially from my conception to date whose desire and strive for great success helped me to realize my dreams thus far. Sir and Ma, I am highly indebted to you and it is my indebt and sincere prayer that you will reap the fruit of your labour over all your children in good health and sound mind. To my siblings and cousin (Abimbola Oladeinde) who contributed one way or the other to the success of my research work, I appreciate all your efforts and may God bless you and establish your works.

Finally, I appreciate all my friends and unique colleagues for their care and support all through the programme, also for the peer review and constructive criticisms that you offered when needed which contributed to the success of this research work. I say a very big thank you.

I also acknowledge my study participants who participated voluntarily in this project. I really appreciate you.

ABSTRACT

In low- and middle-income countries, over 300 million cases of STIs occur annually, and many go untreated because of lack of access to services. Subsequently, the untreated cases of STIs results to deaths. Young people of colour are at disproportionate risk for STIs. It is important to promote programmes that seek to lessen risky sexual behaviours by encouraging condom use, delay in sexual initiation, partner reduction, and early HIV testing and treatment. But research has shown that even when risk factors are equal, youth of colour are more at risk for HIV and other sexually transmitted infections. This study investigated the awareness of risk factors of STIs and presence of symptomatic self – reported STIs among Market dwellers.

A cross – sectional design was adopted for the study, alongside KII and a sample size of 174 respondents were selected through a consecutive sampling technique. An interviewer administered questionnaire which was sub-divided into four sections was used to obtain data from individuals who were involved in business transactions. Data collected through questionnaire were analysed using descriptive statistics, Chi square test and logistic regression model at 5% level of significance.

Results indicated that a greater proportion of the respondents were males (81.3%), Majority (71.6%) of the participants studied engaged in Load carrying and lifting. The mean age was 25.24 ± 8.85 years.

Majority of the youths knew of the risk factors of STIs just as reported by other researchers. Yet, the prevalence (30.1%) of symptomatic STIs in steadily on the increase. Multivariate analysis showed that living in the market (OR= 1.15; 95% CI: 0.42 – 3.17) is not statistically related to the presence of symptomatic self – reported STI among the respondents. The worrisome aspect is that this group of people are usually cut off from STIs including HIV/AIDS campaign programmes. First, this is because their activities hardly come to light as they basically carry or lift loads and goods in the market. Secondly, they do not operate in an organised form so as to make them accessible for intervention efforts. Thirdly, the environment within which they operate as place of work and sleeping place will generally not expose them to general public campaign programmes through the electronic and print media except for the use of dry cell

battery radio which is readily available in most markets. Overall, the prevalence of symptomatic self – reported STIs was 45.9%.

The results suggest that the adverse social and economic factors associated with perpetuation on a cycle of poverty which push many of these youths out of school should be attacked. A similar recommendation is required for other respondents in this study other than the youth not-in-school. It equally suggests that the respondents require a well organised and specifically targeted peer-educational programmes which includes an accessible and functional Youth friendly Health Services Centre.

Keywords: Load Carriers/Lifters, Symptomatic self – reported STI, Market Dwellers, Young People, Youth Friendly Health Services Centre.

Word Count: 499

LIST OF ABBREVIATIONS (ACRONYMS)

AIDS – Acquired Immune Deficiency Syndrome

CDC – Centre for Disease Control

FMOH – Federal Ministry of Health

LGA – Local Government Area

HIV – Human Immunodeficiency Virus

KII – Key Informant Interview

MDG – Millennium Development Goal

NPC – National Population Commission

NARHS – National HIV/AIDS Reproductive Health Survey.

RFs – Risk Factors

STIs – Sexually Transmitted Infections

SPSS - Statistical Package for Social Sciences

UNAIDS – United Nations Programmes on HIV and AIDS

WHO – World Health Organisation

TABLE OF CONTENTS

TITLE PAGE

CERTIFICATION I

DEDICATION II

ACKNOWLEDGEMENT III

ABSTRACT V

LIST OF ACRONYMS VII

CHAPTER ONE: INTRDUCTION

1.1 Background 1

1.2 Problem Statement 4

1.3 Justification 7

1.4 Study Objectives 9

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of Sexually Transmitted Infections 10

2.1.1 Mode of transmission of sexually transmitted infections 11

2.1.2 Symptoms of sexually transmitted infections 11

2.2 Young People and Sexually Transmitted Infections 12

2.3 Determinants of Risk of Sexually Transmitted Infections 13

2.4 Risk Factors for Sexually Transmitted Infections 16

2.4.1 Agent factors 16

2.4.2 Host factors 18

2.4.3 Socio-demographic factors 18

2.4.4 Consequences of sexually transmitted infections 19

2.4.5 Complication and sequelae of sexually transmitted infections 19

2.5 Public Health Burden of Sexually Transmitted Infections 21

2.6 Prevalence of Sexually Transmitted Infections 25

2.7 Vulnerable Groups 26

2.8 Control of Sexually Transmitted Infections 28
2.8.1 Sexually transmitted infections control programmes in Nigeria 29
2.8.2 Symdromic approach for sexually transmitted infections 29
2.9. Intervention on Sexually Transmitted Infections 30
2.9.1 Vaccines and other biomedical interventions 30
2.9.2 Intervention on sexually transmitted infections in Nigeria 31
2.9.3 Current efforts to contain the spread of sexually transmitted infections 31
2.10 Prevention of Sexually Transmitted Infections 32
2.10.1 Prevention of sexually transmitted infections among young people 32
2.11 Diagnosis of Sexually Transmitted Infections 33

CHAPTER THREE: METHODOLOGY

3.1 Study Area 36
3.2 Study Setting 36
3.3. Study Design 38
3.4 Study Population 38
3.5. Sample Size Estimation 39
3.6 Sampling Technique 39
3.6.1 Quantitative method 39
3.6.1 Qualitative method 39
3.7 Study Variable 40
3.7.1 Dependent variables 40
3.7.2 Independent variables 40
3.7.3 Variable definition/indicators 40
3.8. Research Instrument 41
3.8.1. Questionnaire 41
3.8.1.1. Knowledge of the Respondents 42
3.8.1.2. Response to Sexual behaviour and Presence of symptomatic STIs 42

3.8.2. Key Informant Interview 42

3.9. Pre-test of Research Questionnaire 42

3.9.1. Validity of research questionnaire 43

3.10. Data Management and analysis 43

3.10.1. Quantitative data 43

3.10.2. Qualitative data 43

3.11. Ethical Consideration 44

CHAPTER FOUR: RESULT

4.1 Socio-Demographic Characteristics of the Respondents 46

4.2 Association between Respondents' Socio-Demographic Characteristics and Symptomatic Self – Reported STI 48

4.2.1 Relationship between Respondents' Socio-Demographic Characteristics and Symptomatic Self-Reported STI 50

4.3 Prevalence of Symptomatic Self – Reported Sexually Transmitted Infections 52

4.4 Knowledge of the Respondents about Risk Factors, Symptoms and Types of STIs 54

4.4.1 Awareness about Sexually Transmitted Infections (STIs) 54

4.4.2 Awareness and Knowledge about Risk Factors of STIs 54

4.4.3 Respondents' Source of Knowledge on Sexually Transmitted Infections 55

4.4.4 Knowledge about Types of Sexually Transmitted Infection 56

4.4.5 Knowledge about Symptoms of HIV/AIDS 57

4.4.6 Knowledge about Preventive Measures of STIs 58

4.5 Sexual Behaviours of the Respondents 59

4.5.1 Association between Sexual Behaviours and Presence of Symptomatic Self-Reported STI 61

4.5.2 Relationship between Sexual Behaviours and Presence of Symptomatic Self-Reported

STI 63

4.6 Consequences of Sexually Transmitted Infections 65

4.6.1 Association between Consequences of Sexually Transmitted Infections and Symptomatic Self – Reported STI 66

4.6.2. Relationship Between Consequences of Sexually Transmitted Infections and Symptomatic Self – Reported STI 68

4.7 Suggestions on the Preventions of Incidence of Sexually Transmitted Infections 70

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATION

5.1 Discussion 71

5.1.1. Knowledge on Symptoms of Sexually Transmitted Infections 71

5.1.2. Relationship between Socio-Demographic Characteristics and Symptomatic Self – Reported Sexually Transmitted Infections 71

5.1.3. Prevalence of Symptomatic Self – Reported Sexually Transmitted Infections 72

5.1.4. Consequences of Sexually Transmitted Infections 73

5.1.5. Symptoms of Sexually Transmitted Infections 73

5.1.6. Sexually Transmitted Infections Preventive Measures 73

5.1.7. Sexual Behaviours 74

5.2. Key Informants' Discussion and Perception about Market Dwellers 75

5.2.1. General information 75

5.2.2. Market dwellers 75

5.2.3. Occupation 76

5.2.4. Sexual behaviours 77

5.2.5. Intervention made to take the market dwellers off the streets 77

5.3. Limitation of the Study 78

5.4. Conclusion 79

5.5. Recommendation 80

REFERENCES 82

APPENDIX

LIST OF TABLES

Table 2.3 Determinants of Risk Factors of STIs 15

Table 2.4.1 Agent Risk Factors of STIs 17

Table 2.4.5 Major Sequelae of STIs 20

Table 2.7 Regional Estimate of Prevalence and Incidence of STIs 25

Table 4.1.1. Percentage Distribution of Socio – Demographic Profile 47

Table 4.2. Association between Respondents Socio-Demographic Characteristics and Presence of Self-Reported Sexually Transmitted Infection 49

Table 4.2.1. Relationship between Respondents' Socio-Demographic Characteristics and Presence of Symptomatic Self-Reported STI 51

Table 4.3. Percentage Distribution of Respondents' Presence of Symptomatic Self – Reported STI in the Past 12 Months 52

Table 4.4.1. Percentage of the Distribution of Respondents' Awareness about STIs 54

Table 4.4.4. Percentage Distribution of Respondents' Knowledge on Types of STIs 56

Table 4.5. Percentage Distribution of Respondents' Sexual Behaviours 60

Table 4.5.2. Association between Respondents' Sexual Behaviours and Presence of Symptomatic Self – Reported STIs 62

Table 4.5.2. Relationship between Respondents' Sexual Behaviours of STIs 64

Table 4.6.1. Association between Consequences of Sexually Transmitted Infections and Symptomatic Self – Reported STI 67

Table. 4.6.2. Relationship between Consequences of STIs and Presence of Symptomatic Self – Reported STI 69

LIST OF FIGURES

Figure 4.4.3. Showing the Distribution of Respondent's Source of Knowledge on STI 55

Figure 4.4.4. Distribution Showing Respondents' Knowledge about Preventive Measures of STIs 58

Figure 4.6.1. Distribution of the Consequences of Sexually Transmitted Infections 65

Figure. 4.7.1. Respondents' Suggestions on the Preventions of Incidence of Sexually Transmitted Infections 70

CHAPTER ONE

1.0. INTRODUCTION

1.1. Background of the Study

Sexually transmitted infections (STIs) are infections that are spread primarily through person-to-person sexual contact, although some of the pathogens that cause it, especially Human immunodeficiency virus (HIV) and syphilis, can be transmitted from mother to child during pregnancy and childbirth, and through blood products and tissue transfer (WHO media centre, 2011; Nsuami, Sanders, Taylor., 2010). In low- and middle-income countries, over 300 million cases of STIs occur annually, and many go untreated because of lack of access to services. Subsequently, the untreated cases of STIs results to deaths. Young people of colour are at disproportionate risk for STIs. It is important to promote programmes that seek to lessen risky sexual behaviours by encouraging condom use, delay in sexual initiation, partner reduction, and early HIV testing and treatment. But research has shown that even when risk factors are equal, youth of colour are more at risk for HIV and other sexually transmitted infections (Advocates for Youths, 2008).

According to World Health Organization, the term "Youth" is used to describe individuals within the groups 15 – 24. Adolescents (10 - 19) years and young people (10 – 35) years represent a significant proportion (42.4%) of Nigeria's population yet, most policies and programmes have not addressed their socio-economic needs in any strategic manner (NDHS. 2008). There is high number of youths in developing countries and according to the survey conducted by UNAIDS (2003), the report reveals that more than 95% of the 40 million people infected with HIV are in developing countries, including Nigeria. Also, one in every 20 young person is believed to contract a curable STI each year, except HIV and other viral infections (Dehne and Reidner, 2005). NDHS (2003) reported greater proportion of females aged 15 – 19 year also, more than half of males of the same age had no knowledge of STI. According to the survey conducted by Mmari et al., (2010) reported that about 41% of those aged 15 – 25 years had high knowledge of STI. Several complication arise as a result of the persistence increase in prevalence of STI, because STI on its own right can be a serious disease coupled with the fact that it is a co-factor for HIV transmission and acquisition with an increased risk by a factor of up to 10. Globally,

in developing countries, STIs and their sequelae are among the top five disease categories for which adults seek health care (WHO media centre, 2011; WHO 2013; Lawan, 2012) when the health centres are accessible and functional in their own right. Despite report on high level of unprotected sexual activities among Nigerian youths below age 25 years (ICF Macro/NPC, 2014).

Consequences of STIs can lead to further complications and deaths when not controlled and can lead to female and male infertility, spontaneous abortions, increased risk of ectopic pregnancies, stillbirths, chronic lower abdominal pain, pelvic pains, dyspareunia, cervical cancer and even death if left untreated. (Ajuwon 2007; Teens and Trends 2013; Suryakantha 2009). Among young people, there are several problems related to STI. Young people are said to be sexually active and to have initiated sexual activities early, and are often involved in unprotected sexual intercourse of greater risk is often reported from those young people who are in socially and economically disadvantaged position as sexual activity may occur in the context of coercion or violence. The precise magnitude of the STIs burden is frequently unknown.

Though passive STIs surveillance systems exist in some countries, the data is not always reliable or complete. The completeness is subsequently affected by the STIs natural history, since a large number of infections are asymptomatic. Moreover, only part of the symptomatic population seeks health care and even a smaller number of cases are reported. The social stigma that usually is associated with STIs may result in people seeking care from alternative providers or not seeking care at all. High STI prevalence in this group has been partly linked to their engagement in high risky behaviours and practices such as having multiple sexual partners, involving in casual sex, poor knowledge and inconsistent condom use (Adenike, 2009; WHO, 2001). In this vain, also with an increased autonomy and privacy by young people, with the feeling that nothing can happen to them, young people are often engaged in higher risk taking behaviour (Bearinger, 2008; Vanessa, 2012).

According to a study conducted in the rural southeast of Nigeria, prevalence of STIs among female was reported to be as high as 17%, when only sexually active females were considered, and those between the ages 17 – 19 years had the highest prevalence of

chlamydia (11%) and candidiasis (26%); also, the age group most likely to have had any STI (44%). Females younger than 17 had the highest prevalence of trichomoniasis (11%) and nearly 20% also reported symptomatic candidiasis. This report is similar to that obtained in Abia, Port Harcourt and Cross Rivers State, Nigeria (Mmari, 2010; Patrick, 2007).

However, studies have shown that most out-of-school adolescents do not live with their parents and are found most times on the street, market places or motor parks hawking, lifting loads or serving as shop assistants to others (Sallah. 2009; Adebiyi, Asuzu 2009; Kadiri 2014). This is why most young people not-in-school are vulnerable to unsafe sex and have lower sexual health knowledge compared to their in-school counterparts. Young people seek reproductive and sexual health information from a variety of non-formal sources that include peers, pornography and magazines. The unguided youth usually experiment with the information received and often become exposed to STIs, unwanted pregnancy among others. Young people need protective information and skills in order to reduce the risk associated with unsafe sex.

STIs including HIV/AIDS have been reported to be disproportionately high among young people in Nigeria. Report reveals that about 50% of new HIV infections in Nigeria occur in people between 15-25 years of age (Da Ros; Schmidt 2008). A deluge of intervention activities that focus on increasing awareness and encouraging changes in behaviour have been put in place. However, there is evidence that many still lack adequate information about STIs and HIV/AIDS (National Intelligence Council, 2005).

Globally, STIs constitutes one of the major public health problems affecting hundreds of millions the people in both developed and developing countries, causing far-reaching health and socio-economic consequences and a pragmatic level of awareness of risk factors for STIs is necessary to evolve an effective preventive strategy (Choudhry, Ramachandran, Das, Bhattacharya et al 2010; DiClemente, Salazar, Crosby, 2007; Ikeako, Ekwueme, Ezegwui, Okeke., 2014). Prior to this study, no study had looked at symptomatic self – reported STI among the Market dwellers. Finding from this study is aimed to help policy makers obtain baseline information in making policies on STI intervention, and its importance in effective STI control programmes.

1.2. Problem Statement

Globally, despite the increasing number of STIs including HIV/AIDS among the youths in sub-Saharan Africa indicates that successful efforts towards preventing the scourge remains inadequate. Regardless of the general awareness on STIs, it is obvious that many young people are sexually active with low level of preventive measures uptake and thereby being vulnerable to STIs and increasing its incidence in this population. Hence, this is a factor contributing to the increasing spread of STIs and HIV/AIDS among young people (Okekearu 2004; Juarez and LeGrand, 2005).

In Nigeria and other parts of the world, though evidence exists that STI are common problem, there has been a disproportionate neglect of STI as most research focus is on HIV/AIDS despite that every year worldwide, about 340 million people are infected by four most important STIs (Gonorrhoea, Syphilis, Trichomoniasis and Chlamydia) except HIV; 70% among 15 – 24 years (WHO, 2006). About 69 million of these infections occur in sub – Saharan Africa. According to Mmari et al., (2010), STI can increase the risk of HIV acquisition by a factor of up to 10. Though STI is consequent to unprotected sexual contacts, sexual contacts among unmarried young people are often unprotected, therefore, they are more at risk of contracting STI.

Wellings, (2006) reported that condom use is increasing everywhere except in developing countries. In rural southeastern Nigeria, prevalence of STI among female adolescents was as high as 17%. While 44% of women who had initiated sexual intercourse between the ages 17 – 19 years were most likely to have any STI. According to Brabin, (1999), this age group also had the highest prevalence of Chlamydia (11%) and Candidiasis (26%).

The highest rates of STIs are generally found in urban men and women in their sexually most active years, that is, between the ages of 15 and 35. On average, women become infected at a younger age than men. STIs have been reported to have reached and alarming prevalence in several countries especially in sub-Saharan Africa. Young people between the ages of 15 and 49, are accountable for the prevailing high prevalence (11.9%) of STI in sub-Saharan Africa (WHO, 2001; WHO media centre 2011). FMOH, (2001) in a survey conducted in 2000 reported higher rates of STIs of 11.5%. Similarly, research findings by Sekoni et al, (2013) reported about 36.5% prevalence of self-reported symptomatic sexually transmitted infections. Also, the prevalence of those who had experienced STIs

symptoms in the past 12 months, using genital discharge, ulcer and itching as proxies, was reported to be about 7%. It was also reported that higher proportions of younger respondents than older ones reported that they had experienced STI symptoms. This may be a reflection of the effect of high risk sexual behaviour associated with this age group. Therefore, interventions to prevent STIs need to be targeted at the younger age groups (NARHS II Plus, 2012). In Ghana, a lifetime self-reported prevalence of sexually transmitted infections of about 41%, among men and women was reported (Nyarko et al, 2014).

Most studies and interventions on STIs, focuses on adolescents in sub-Saharan Africa and Nigeria target in-school adolescents because they are easily accessible, easier to organize and monitor compared to those who are not in school. However, most of the secondary school age youths in Nigeria are not in school (63% of boys and 79% of girls) (NPC 2008). Worldwide, about 120 million school-aged children are out of school and slightly more than half of these are girls and one-third of these children are in sub-Saharan Africa and 10% in Nigeria (Egbochukwu, Ekanem. 2008). A recent study in Anambra state, Nigeria, reported that 43% of pregnant girls were expelled from school and none was recalled back (Onyeka, MieHola, Ilika, Vaskilampi. 2011). Similar studies conducted in Botswana also reported that most pregnant teenagers drop out of school (Meekers, Ahmed. 1999).

The young people not-in-school are not easily accessible, because they are always on the move and not available for follow-up activities (Kipp, Diesfeld, Ndyanabangi 2004). Emerging data about the high incidence of sexual activity among young people suggest that factors that influence this include, socio- economic deprivations, parental inadequacies, peer pressure, effects of cultural changes and modernization and media influence (Briggs 1998; Ajuwon, Olley, Akin-Jimoh, Akintola. 2001). Therefore, it is important to clarify the sexuality acts and needs of the market dwellers taking into consideration the socio - economic and environmental factors, peer norms, beliefs and values of the different groups in order to develop and implement successful prevention programmes for this groups.

Onitsha, Nigeria, holds the largest market in West Africa, and second only to Lagos in

youth concentration. Therefore, an area of large youth concentration such as Ibadan was most suitable for this study.

Youth not-in-school in Nigeria, particularly those staying on their own, could be principally vulnerable because they may engage in a higher-risk behaviour and because they may be alienated from social service providers and school systems. This puts them outside the AIDS information networks while they themselves lack the social support to change their behaviour. Despite the fact that the problem of youth not-in-school in Nigeria has not reached an alarming proportion, evidence abounds that they exist and are growing in number probably as a result of the prevailing socio – economic situation (Ogunjuyigbe, 2003). This group is in part the product of educational and economic reforms that took place under the country's structural adjustment programme introduced in 1987. Many parents could no longer afford the ever-increasing school fees payable in Nigerian schools and this might have forced many of these youths out of school, though other reasons may abound. Prior to the advent of AIDS, the primary strategy used to control the spread of sexually transmitted diseases (STDs) among the sexually active relied on secondary preventive activities. Primary efforts to cause behaviour change through education were not actively pursued. However, increasing attention is now being focused on the medical risk to the young unmarried and sexually active of contracting STD and AIDS in particular. Youths not-in-school are of particular importance because many of them are out in the streets with very little parental or guardian support (Berkley, 1992; Barnnet and Blake, 1992; Chin, 1992; Muir, 1991). Given the fact that sexual activity is the commonest way of spreading STIs including HIV infection, it is envisaged that the sexual behavioural characteristics of the youth and the environment within which they operate would have implications for the spread of the diseases (Ogunjuyigbe, 1997). As a result of this reports, this study describe the relationship between the risk factors STIs and presence of symptomatic STI including the level of awareness of STIs among Market Dwellers in Ibadan.

At age 24, one in every three sexually active people will have contracted an STI and many of these young people suffer severe long-term health problems as a consequence of their infection (KFF, 1998b).

In view of the stated problems, the essence of this study is eminent among the market dwellers that include young people and particularly youths not-in-school.

1.3. Justification

Remarkably, STIs are preventable diseases and their prevention is even a priority for the World Health Organization (WHO). WHO further stated that Sexuality is an integral part of the personality of everyone: man, woman and child including young people need to know their own personal values and beliefs about relationships and sex (WHO, 2011 and Oke 2012). However, the market dwellers do not have access to useful information, attention and care concerning their sexuality. It must however, be emphasised that sexually transmitted infections and AIDS are highly stigmatised in Nigeria and persons infected are likely to keep the news to themselves. There is, therefore, reason to believe that the proportion which reported ever having STD or AIDS is on the conservative side Ogunjuyigbe (2003). Hence the need for pragmatic interventions and studies that will help reduce the prevalence of this STIs across various groups.

Prior to this study, research findings by IBBSS, (2007) revealed that the prevalence of self – reported STIs is consistently on the increase among Transport workers, Armed forces, Police officers, Injection drug users and Men having sex with men in selected States in Nigeria, and this population includes those within the high socio – economic groups. Hence the need for this study among the market dwellers who are reportedly disadvantaged and within the low socio – economic group in the society.

Researches and interventions on STIs have been done among various groups in the country. Studies in STIs have been carried out among males, females, pregnant women, traders, In-school and Out-of-school youths, truck drivers among others. But I am yet to come across any study that has been done on risk factors of STIs among the market dwellers.

One of the interventions that have been put in place to address the increasing rise in the incidence and prevalence of STIs in Nigeria is the establishment of Youth Friendly Health Services Centres in South western part of the country which is just for the in-school and

out-of-school youths whereas, the market dwellers do not have access to such facilities nor information on their arising health issues.

Evidence on young people is still scanty. Yet, there is still much to be explored of the sequence of steps that young people take in trying to get help for a health problem, especially problems like STIs that are often stigmatized. For effective STI control, there is need for a better understanding of risky sexual behaviours that predisposes young people to STI. One of the key objectives of this study is identifying such factors. This would be helpful in narrowing down specific STI interventions that would be more effective than broad ones. Also, exploring gender difference in this study has the possibility of identifying specific gender related factors thus helping in planning gender based interventions as well identify priority areas in STI control programmes. Furthermore, apart from providing additional evidences and substantiating findings from this study could be helpful in influencing future researches as risk factors of STIs, socio-demographic characteristic and sexual behaviours were explored against the presence of self – reported STI. This could also serve as a pointer in identifying key factors and study populations for which future researches could be explored.

Thus, policy makers and programme managers are provided with baseline information to implement programmes that will help reduce the burden of STIs among the youths and market dwellers.

1.4 Study Objectives

1.4.1 General objective

To determine the prevalence of self-reported STIs and the risk factors for STIs among market dwellers at Agbeni and Bodija Markets in Ibadan, Oyo State.

1.4.2 Specific objectives

1. To determine the relationship between socio-demographic characteristics of the market dwellers and presence of self-reported STI.
2. To determine the relationship between sexual behaviours and presence of self-reported STI.
3. To assess the knowledge of the market dwellers about risk factors, types and symptoms of STIs.
4. To determine the prevalence of self-reported STI among the market dwellers.

CHAPTER TWO

2.0. LITERATURE REVIEW

2.1. Overview of Sexually Transmitted Infections

More than 30 bacterial, viral, and parasitic pathogens are transmissible sexually and constitute a group of infections referred to as sexually transmitted infections, (WHO, 2013). Sexually transmitted infections are infections that are spread primarily through person-to-person sexual contact, although some of the pathogens that cause it, especially Human immunodeficiency virus (HIV) and syphilis, can be transmitted from mother to child during pregnancy and childbirth, and through blood products and tissue transfer. Sexually transmitted infections are divided into those caused by bacteria, viruses and parasites. The most common conditions they cause are Gonorrhoea, Chlamydial infection, Syphilis, Trichomoniasis, Chancroid, Genital herpes, Genital warts, HIV (WHO media centre, 2011; Nsuami et al., 2010).

Also, according to Ajuwon, Owoaje, Falaye, Osinowo et al, 2007; Suryakantha, 2009), STIs are infections that are transmitted principally through sexual contact with mucous membranes and/or skin surfaces that have serious consequences beyond the immediate impact of the infection itself on risk groups which include urban residents, adolescents and young adults, young females, street hawkers, sex workers, migrant workers, refugees, seafarers, defence personnel, immigrants, labour class, tourist, professional travellers, and such others. Others who are also at risk are highly mobile people such as long distance truck drivers and persons in the military, sex workers, homosexuals, hotel staff, convicts of law and order, call girls, etc. These high-risk groups are identified as "core population groups", from the point of view of transmission, prevention and control of STIs. All the above mentioned socio-psycho-economic factors are identified as "risk factors" or "markers" of STIs.

2.1.1 Mode of transmission of sexually transmitted infections

Research findings by Suryakantha, (2009) revealed that sexually transmitted infections are groups of diseases that are transmitted usually by sexually contact and caused by a wide

range of pathogens and clinically characterised by mainly three different syndromes- urethral discharge, vaginal discharge and genital ulcer. Some are curable while others can only be controlled. Previously, the Sexually Transmitted Diseases (STDS) were called as "Venereal Diseases" (VDs). In view of the social stigma, attached to the label VD, WHO rephrased in 1974, the nomenclature from VD to STD. The current terminology is Sexually Transmitted Infections (STIs), since 1999, as it incorporates asymptomatic infections as well. STIs are caused by more than 30 different bacteria, viruses and parasites and are spread predominantly by sexual contact, including vaginal, anal and oral sex. Some STIs may be spread via skin-to-skin sexual contact. The organisms causing STIs can also be spread through non-sexual means such as blood products and tissue transfer. Many STIs including chlamydia, gonorrhoea, hepatitis B, HIV, HPV, HSV2 and syphilis can also be transmitted from mother to child during pregnancy and childbirth. A person can have an STI without having obvious symptoms of disease. Therefore, the term "sexually transmitted infection" is a broader term than "sexually transmitted disease".

2.1.2. Symptoms of sexually transmitted infections

Common symptoms of STIs include vaginal discharge, urethral discharge in men, genital ulcers, and abdominal pain. Eight of the more than 30 pathogens known to be transmitted through sexual contact have been linked to the greatest incidence of illness. Of these 8 infections, 4 are currently curable: syphilis, gonorrhoea, chlamydia and trichomoniasis. The other four are viral infections and are incurable, but can be mitigated or modulated through treatment: hepatitis B, herpes, HIV, and HPV (Advocates for Youths, 2008; WHO Media Centre 2013).

2.2. Young People and Sexually Transmitted Infections

Generally, research findings revealed that the highest incidence rates of STIs occur among adolescent women aged 15 – 19 years and males aged 20 – 24 years. In developing countries such as Nigeria, highest rates of STIs occur among young people aged 20 – 24 years and 25 – 29 years. Adolescents (10-19 years) and young people (10-35 years) represent a significant proportion (42.4%) of Nigeria's population. However, most

policies and programs have not addressed their socio-economic needs in any strategic manner (NPC, 2014; NDHS, 2008; Ajuwon, Owoaje, Falaye, Osinowo et al, 2007).

Sexually transmitted diseases (STDs) are among the first ten causes of unpleasant diseases in young adult males in developing countries and the second major cause of unpleasant diseases in young adult women worldwide. Adolescents and young adults (15-24) years are responsible for only 25% of the sexually active population, yet they represent almost 50% of all newly acquired STDs (Carlos, 2008). STIs are presently the most common infectious diseases which are responsible for several reproductive health problems affecting young people across the world (Aliyu et al., 2013). However, the sexual and reproductive health needs of young people are often not met in developing countries (Lewis et al., 2007) which results in the prevalence of STIs. People in this age group have experienced over 100 million new cases of STIs annually. This shows that the age between 15 – 24 years is a very sensitive and important aspect of young people's life.

Audinarayana (2010), revealed that this period remains an evolutionary period to early adulthood, a critical period in man's life in terms of physical growth and development, social and emotional maturity, sexual maturity and the onset of sexual activity experimentation. For the young people who are marginalized both socially and economically, the risk of contracting STI is often greater as sexual activity may take place within a context of coercion or violence in the course of selling sex to earn a living.

Young people are particularly vulnerable to STIs and the consequent health problems because of they have inadequate or incorrect information about how to prevent STIs, they are less likely to seek proper information or treatment due to fear, ignorance, shyness or inexperience, the risk of them acquiring trichomoniasis, chlamydia, genital herpes or human papilloma virus (HPV) is greater at first exposure to the STI, Adolescent females are more susceptible to infections than older women due to their immature cervices, early sexual experience can result in trauma to vaginal tissue, increasing adolescent women's vulnerability to STIs, Adolescents who begin sexual activity early are likely to have more sexual partners in their lifetime (NPC, 2014; ICF Macro/NPC, 2013; Ogunjuyigbe, 2003).

Youths not-in-school in Nigeria, particularly those staying on their own, could be principally vulnerable because they may engage in a higher-risk behaviour and because

policies and programs have not addressed their socio-economic needs in any strategic manner (NPC, 2014; NDHS, 2008; Ajuwon, Owoaje, Falaye, Osinowo et al, 2007).

Sexually transmitted diseases (STDs) are among the first ten causes of unpleasant diseases in young adult males in developing countries and the second major cause of unpleasant diseases in young adult women worldwide. Adolescents and young adults (15-24) years are responsible for only 25% of the sexually active population, yet they represent almost 50% of all newly acquired STDs (Carlos, 2008). STIs are presently the most common infectious diseases which are responsible for several reproductive health problems affecting young people across the world (Aliyu et al., 2013). However, the sexual and reproductive health needs of young people are often not met in developing countries (Lewis et al., 2007) which results in the prevalence of STIs. People in this age group have experienced over 100 million new cases of STIs annually. This shows that the age between 15 – 24 years is a very sensitive and important aspect of young people's life.

Audinarayana (2010), revealed that this period remains an evolutionary period to early adulthood, a critical period in man's life in terms of physical growth and development, social and emotional maturity, sexual maturity and the onset of sexual activity experimentation. For the young people who are marginalized both socially and economically, the risk of contracting STI is often greater as sexual activity may take place within a context of coercion or violence in the course of selling sex to earn a living.

Young people are particularly vulnerable to STIs and the consequent health problems because of they have inadequate or incorrect information about how to prevent STIs, they are less likely to seek proper information or treatment due to fear, ignorance, shyness or inexperience, the risk of them acquiring trichomoniasis, chlamydia, genital herpes or human papilloma virus (HPV) is greater at first exposure to the STI, Adolescent females are more susceptible to infections than older women due to their immature cervices, early sexual experience can result in trauma to vaginal tissue, increasing adolescent women's vulnerability to STIs, Adolescents who begin sexual activity early are likely to have more sexual partners in their lifetime (NPC, 2014; ICF Macro/NPC, 2013; Ogunjuyigbe, 2003).

Youths not-in-school in Nigeria, particularly those staying on their own, could be principally vulnerable because they may engage in a higher-risk behaviour and because

they may be alienated from social service providers and school systems. This puts them outside the AIDS information networks while they themselves lack the social support to change their behaviour. Despite the fact that the problem of youths not-in-school in Nigeria has not reached an alarming proportion, evidence abounds that they exist and are growing in number probably as a result of the prevailing socio – economic situation. This group is in part the product of educational and economic reforms that took place under the country's structural adjustment programme introduced in 1987. Many parents could no longer afford the ever-increasing school fees payable in Nigerian schools and this might have forced many of these youths out of school, though other reasons may abound (Ogunjuyigbe, 2003).

Prior to the advent of AIDS, the primary strategy used to control the spread of sexually transmitted diseases among the sexually active relied on secondary preventive activities. Primary efforts to cause behaviour change through education were not actively pursued. However, increasing attention is now being focused on the medical risk to the young unmarried and sexually active of contracting STD and AIDS in particular. Youths not-in-school are of particular importance because many of them are out in the streets with very little parental or guardian support. This present study therefore makes young people and the youths not-in-school the focal problem. This is beneficial because many studies have indicated that youths are vulnerable to many health problems related to behaviour and environment (Berkley, 1992; Barnnet and Blake, 1992; Chin, 1992; Muir, 1991). Given the fact that sexual activity is the commonest way of spreading STIs including HIV infection, it is envisaged that the sexual behavioural characteristics of the youth and the environment within which they operate would have implications for the spread of the diseases (Ogunjuyigbe, 1997). This study examined the risk factors and awareness of STIs in among Market Dwellers in Oyo State to obtain the prevalence of symptomatic self – reported STIs.

Other risk factors for adolescents and young people include, early initiation of sexual activity among males, unprotected sex (sex without condoms), sex with multiple partners, having a partner who has other sex partners, having a partner who has STI symptoms, sex with a new partner or more than one partner in the last three months, sex with strangers or

sex in exchange for money, vulnerability to sexual violence, coercion and abuse, use of vaginal drying agents, a history of STIs or pelvic inflammatory disease (PID), the myth that sex with a virgin is a cure for STIs e.g. HIV and gonorrhoea (Ajuwon et al. 2007).

2.3. Determinants of Risk of Sexually Transmitted Infections

The determinants of the risk of sexually transmitted infections include individual and environmental determinants. The individual determinants addressed the knowledge and awareness of individuals on STIs, aimed at reducing their exposure. While the environmental determinants addressed the economic, organizational, societal and political issues that are of major concerns to individuals which makes them susceptible over time.

The table 2.3. below further describes the individual and environmental determinants of Risk of Sexually Transmitted Infections.

Table 2.3. Determinants of Risk of Sexually Transmitted Infections

Determinants of Risk for Sexually Transmitted Infections	
Individual Determinants	**Environmental Determinants**
1. Knowledge and Awareness	***1. Economic***
• Knowledge of STIs, risks, and sequelae • Condom effectiveness • Condom availability • Location and types of available services • STI test availability	• Funding for services, education, and awareness raising • Socioeconomic status—income, education, and employment
2. Attitudes, Motivations, and Intentions	***2. Organizational***
• Attitudes toward condom use and safer sex • Motivations to use condoms or to abstain from sex • Intentions to use condoms or to abstain from sex	• Availability of condoms • Availability of health care services • Availability of well-organized STI services for prevention and treatment
3. Beliefs and Perceptions	***3. Societal***
• Perceived vulnerability to STIs • Perceived social norms regarding safer sex (also peer norms) • Beliefs in one's ability to change • Cultural and religious beliefs about sexual practices	• Community attitudes about safer sex (abstinence, condom use, religious and cultural beliefs) • Stigmatization of marginalized communities, such as migrants, refugees, sex workers, and men who have sex with men • Accessibility of services
4. Skills	***4. Policy***
• Communication skills • Ability to negotiate safer sex and condom use • Sexual assertiveness skills	• Laws and regulations to protect against discriminization, human rights for women, and policies encouraging education of such groups as adolescents and men who have sex with men • Age of consent • Age of legal access to condoms

Source: Folasade T. Ogunsola, 2007: The Role of Sexually Transmitted Infections in HIV Transmission pg109

2.4. Risk Factors for Sexually Transmitted Infections

Teens and Trends, (2013) revealed that the common risk factors for STIs are having multiple sexual partners, unprotected sexual intercourse, poverty, low level of education, occupation, previous history of STI, age, sex, use of alcohol and other substances that can impair decision making ability. Research findings by Opoku (2010); Nyarko et al, (2014) also revealed that the common risk factors for STI in Africa are young age at first sexual intercourse, sex workers, lack of formal education, single status, use of hormonal contraceptives, multiple of sexual partners, duration of sexual activity, income, immigrant status, and female gender.

2.4.1 Agent factors

Agent

There are about 25 pathogens responsible for sexual transmission of various diseases from person to person. Most of them require a break in the epithelium to enter the body and such a trauma readily occurs during sexual contact and thus the infection is transmitted from the infected partner to healthy partner. The disease agents and the diseases caused by them are grouped into five classifications of STI agents and diseases caused by them; (Suryakantha, 2009). Table 2.3.1. Describes the agent risk factor of sexually transmitted infections.

Table 2.4.1. Agent Risk Factors of Sexually Transmitted Infections

Agents	Diseases
1. Bacteriae (including spirochetes)	Syphilis, Yaws, Pinta.
Treponema pallidum	Chancroid (Soft sore)
Haemophylus ducreyi	Gonorrhoea, Urethritis,
Neisseria gonorrhoea	Cervicitis, Epididymitis, Salpingitis, PID, Ophthalmia neonatorum.
Calymmatobacterium granulomatis	Donavanosis (Granuloma inguinale)
Chlamydia trachomatis (L1, L2, L3)	Lymphogranuloma venereum (LGV)
Chlamydia trachomatis (D to K)	Nongonococcal Urethritis (NGU) Cervicitis
Mycoplasma hominis	NGU
Ureaplasma urealyticum	NGU
Shigella spp.	Proctocolitis (due to anal sex)
Campylobacter spp.	Proctocolitis (due to anal sex)
Bacterial vaginosis associated organisms	Bacterial vaginosis
Group B Streptococci	Vaginitis, Urethritis, Cervicitis, Balanitis, Cystitis.
2. Viral agents:	
Human (alpha) herpes virus 1 and 2	Herpes genitalis
Human (beta) herpes virus 5	Cervicitis, NGU
Hepatitis B virus	Serum hepatitis
Human papilloma virus	Genital warts
Molluscum contagiosum virus	Genital molluscum contagioum
Human immunodeficiency virus (HIV)	AIDS
3. Protozoal agents	
Entamoeba histolytica	Amoebiasis
Giardia lambia	Giardiasis
Trichomonas vaginalis	Trichomoniasis (vaginitis)
4. Fungal agents	
Candida albicans	Vaginal candidiasis
Ectoparasites	Public pediculosis (It is not a
Pthirus pubis	disease but infestation)
Sarrcoptes scabiei	Genital scabies

Source: Suryakantha, 2009: Community Medicine with Recent Advances pg 428

2.4.2 Host factors

The incidence of STI is found to be highest in the age group of 20 to 30 years, followed by 15 to 19 years and above 30 years, while the incidence is more among men than among women in developing countries. However, severity is more among women. But it is same in developed countries. There is high incidence of STI among unmarried, (single), divorced and separated individuals than among married couples. The same can be said of people of lower-economic status are more affected. However, the vulnerable groups are majorly affected. Also, the incidence is high among commercial sex-workers (Suryakantha, 2009).

2.4.3 Socio-demographic factors

STI is called a social disease because of the prevalence of the following social factors which include prostitution, poverty, illiteracy, polygamy, polyandry, broken homes, sexual disharmony, sexual disruption and social stigma. Sex workers acts as a reservoir of infection. They are now called sex workers (SWs). Extreme poverty in the family predisposes the girls to go astray and become prostitutes. Then prostitution in turn, becomes an occupation for easy money. Illiteracy associated with emotional immaturity predispose the girls to become easy victims of STI. Polygamy still practiced in some tribal areas, predisposes for the prevalence of STIs. Similarly, polyandry (One person having many husbands) is also responsible for the increased prevalence of STIs. Some women change their husbands. While in families where there is death or divorce of the parents, the children are likely to go astray in avenues of pleasure, predisposing to STI. Sexual disharmony among married persons due to strange relation, predisposes them to become victims of STI. Social disruption such as famine, war, floods and such other disasters favour the spread of STIs. Social stigma attached to STDs associated with shame, accounts for non-detection of cases, not disclosing the sources of contact, taking incomplete self-treatment, and lead on to increased prevalence of STIs. Co-education and co-work also foster casual sexual relationships. The socio-demographic factors include industrialization, urbanization, migration of the people to urban areas for seeking an employment, eruptions of slums, isolation from the family also casual sexual

2.4.2 Host factors

The incidence of STI is found to be highest in the age group of 20 to 30 years, followed by 15 to 19 years and above 30 years, while the incidence is more among men than among women in developing countries. However, severity is more among women. But it is same in developed countries. There is high incidence of STI among unmarried, (single), divorced and separated individuals than among married couples. The same can be said of people of lower-economic status are more affected. However, the vulnerable groups are majorly affected. Also, the incidence is high among commercial sex-workers (Suryakantha, 2009).

2.4.3 Socio-demographic factors

STI is called a social disease because of the prevalence of the following social factors which include prostitution, poverty, illiteracy, polygamy, polyandry, broken homes, sexual disharmony, sexual disruption and social stigma. Sex workers acts as a reservoir of infection. They are now called sex workers (SWs). Extreme poverty in the family predisposes the girls to go astray and become prostitutes. Then prostitution in turn, becomes an occupation for easy money. Illiteracy associated with emotional immaturity predispose the girls to become easy victims of STI. Polygamy still practiced in some tribal areas, predisposes for the prevalence of STIs. Similarly, polyandry (One person having many husbands) is also responsible for the increased prevalence of STIs. Some women change their husbands. While in families where there is death or divorce of the parents, the children are likely to go astray in avenues of pleasure, predisposing to STI. Sexual disharmony among married persons due to strange relation, predisposes them to become victims of STI. Social disruption such as famine, war, floods and such other disasters favour the spread of STIs. Social stigma attached to STDs associated with shame, accounts for non-detection of cases, not disclosing the sources of contact, taking incomplete self-treatment, and lead on to increased prevalence of STIs. Co-education and co-work also foster casual sexual relationships. The socio-demographic factors include industrialization, urbanization, migration of the people to urban areas for seeking an employment, eruptions of slums, isolation from the family also casual sexual

relationships. In these days of travel jet, there has been rapid spread of STIs internationally. HIV/AIDS is the current pandemic in world. Changes in the lifestyle especially alcoholism, increases the desire of sex and encourages prostitution, which in turn increases the sale of alcohol. The present youths want relaxation of moral and cultural values. They want freedom from supervision and equal rights for both the sexes (Suryakantha, 2009).

2.4.4. Consequences of sexually transmitted infections

The consequences of STIs include female and male infertility, spontaneous abortions, increased risk of ectopic pregnancies, stillbirths, chronic lower abdominal pain, pelvic pains, dyspareunia, cervical cancer and even death if left untreated. However, there are many problems associated with the diagnosis of STIs because many are asymptomatic and may require sophisticated equipment for diagnosis (Teens and Trends, 2013; Otolorin, 1999).

2.4.5. Complication and sequelae of sexually transmitted infections

Sexually transmitted infections are a major global cause of acute illness, infertility, long-term disability and death with serious medical and psychological consequences of millions of men, women and infants. It is perhaps, for these reasons that increasing numbers of Nigerian adolescents are being infected with HIV. The UNAIDS, (2014) report that young people, and increasingly number of girls accounts for most cases of new HIV/AIDS infections in Nigeria and given the prevalence rate of HIV infection, Nigeria is already among the countries with the highest absolute numbers of infected people in the world (Adebola, 2005). STIs also pose a problem in pregnant adolescents. In Central African Republic, a study done in Bangui, revealed that at least one infection in 34% of antenatal women aged 14-22, including 3.1% gonorrhoea, 6,2% chlamydia, 9.9% trichomoniasis, 6.7% syphilis, 29.1% bacterial vaginosis and 46.6% candida; 12.2% were also HIV-positive (Blankhart et al., 1999). With two thirds of all disability-adjusted life years (DALYs) lost due to STIs by adolescents, chlamydia infections in girls accounts for the largest proportion so far, followed by gonorrhoea with more than a quarter of all DALYs

(Murray and Michaud, 1997). Table 2.3.5. Shows the major sequelae of STIs among infants, men and women; and their major health consequences.

Table 2.4.5. Major Sequelae of Sexually Transmitted Infections

Health Consequences	Women	Men	Infants
Cancers	Cervical cancer Vulval cancer Vaginal cancer Anal cancer Liver cancer T-cell leukaemia Kaposi's sarcoma	Penile cancer Anal cancer Liver cancer T-cell leukaemia Kaposi's sarcoma	
Reproductive Health Problems	Pelvic inflammatory disease Infertility Ectopic Pregnancy Spontaneous abortion	Epididymitis Prostatitis Infertility	
Pregnancy-related Problems	Preterm delivery Premature rupture of membranes Puerperal sepsis Postpartum infection		Still birth Low birth weight Conjunctivitis Pneumonia Neonatal sepsis Acute hepatitis Congenital abnormalities
Neurological Problems	Neurosyphilis	Neurosyphilis	Cytomegalovirus Herpes simplex virus Syphilis-associated Neurological problems

Source: Ajuwon et al. 2007. Training Manual on Sexual Reproductive Health and Rights and HIV Prevention for Medical Students in Nigeria

2.5. Public Health Burden of Sexually Transmitted Infections

The precise magnitude of the STIs burden is frequently unknown. Though passive STIs surveillance systems exist in some countries, the data is not always reliable or complete. The completeness is subsequently affected by the STIs natural history, since a large number of infections are asymptomatic. Moreover, only part of the symptomatic population seeks health care and even a smaller number of cases are reported. The social stigma that usually is associated with STIs may result in people seeking care from alternative providers or not seeking care at all (WHO, 2001).

STIs (as well as HIV/AIDS) have major demographic, economic, social and political impacts particularly in sub-Saharan Africa and increasingly Asia. They have been reported to be the second most common cause of healthy life lost in women after maternal mortality. Untreated STIs may result in major consequences to health, particularly in women. These include cancers (e.g. cervical, vulval) and other reproductive health problems particularly pelvic inflammatory disease, infertility, ectopic pregnancies, pregnancy-related complications and premature death (Ajuwon, Owoaje, Falaye, Osinowo et al, 2007).

The presence of an untreated STI (ulcerative or non-ulcerative) can increase the risk of both acquisition and transmission of HIV by a factor of up to 10. Besides, the improvement in the management of STIs can reduce the incidence of HIV-1 infection in the general population by about 40% (Gilson, Mkanje, Grosskurth, Mosha, et al. 1997). STIs prevention and treatment are, therefore, an important component in HIV prevention strategy.

Data from epidemiological surveys show that within countries and between countries in the same region, the prevalence and incidence of STIs may vary widely, between urban and rural population, and even in similar population groups. These differences reflect a variety of social, cultural, and economic factors, as illustrated by the HIV epidemic, and also differences in the access to appropriate treatment. In general, the prevalence of STIs tends to be higher in urban residents, in unmarried individuals, and in young adults. STIs tend to occur at a younger age in females than in males, which may be explained by

2.5. Public Health Burden of Sexually Transmitted Infections

The precise magnitude of the STIs burden is frequently unknown. Though passive STIs surveillance systems exist in some countries, the data is not always reliable or complete. The completeness is subsequently affected by the STIs natural history, since a large number of infections are asymptomatic. Moreover, only part of the symptomatic population seeks health care and even a smaller number of cases are reported. The social stigma that usually is associated with STIs may result in people seeking care from alternative providers or not seeking care at all (WHO, 2001).

STIs (as well as HIV/AIDS) have major demographic, economic, social and political impacts particularly in sub-Saharan Africa and increasingly Asia. They have been reported to be the second most common cause of healthy life lost in women after maternal mortality. Untreated STIs may result in major consequences to health, particularly in women. These include cancers (e.g. cervical, vulval) and other reproductive health problems particularly pelvic inflammatory disease, infertility, ectopic pregnancies, pregnancy-related complications and premature death (Ajuwon, Owoaje, Falaye, Osinowo et al, 2007).

The presence of an untreated STI (ulcerative or non-ulcerative) can increase the risk of both acquisition and transmission of HIV by a factor of up to 10. Besides, the improvement in the management of STIs can reduce the incidence of HIV-1 infection in the general population by about 40% (Gilson, Mkanje, Grosskurth, Mosha, et al. 1997). STIs prevention and treatment are, therefore, an important component in HIV prevention strategy.

Data from epidemiological surveys show that within countries and between countries in the same region, the prevalence and incidence of STIs may vary widely, between urban and rural population, and even in similar population groups. These differences reflect a variety of social, cultural, and economic factors, as illustrated by the HIV epidemic, and also differences in the access to appropriate treatment. In general, the prevalence of STIs tends to be higher in urban residents, in unmarried individuals, and in young adults. STIs tend to occur at a younger age in females than in males, which may be explained by

differences in patterns of sexual activity and in the relative rates of transmission from one sex to the other (WHO, 2001; WHO media centre 2011).

In low- and middle-income countries, over 300 million cases of STIs occur annually, and many go untreated because of lack of access to services. And HPV, the virus that causes cervical cancer, annually leads to the death of 250,000 year in these countries. Young people of colour are at disproportionate risk for STIs. It is important to promote programmes that seek to lessen risky sexual behaviours by encouraging condom use, delay in sexual initiation, partner reduction, and early HIV testing and treatment. But research has shown that even when risk factors are equal, youth of colour are more at risk for HIV and other sexually transmitted infections. The following resources address the disproportionate impact of HIV and AIDS on these young people as well as the underlying social forces that contribute to these disparities (Advocates for Youths, 2008).

Despite being serious diseases in their own right, STIs improve the sexual transmission of HIV infection. The presence of an untreated STI (ulcerative or non-ulcerative) can increase the risk of both acquisition and transmission of HIV by a factor of up to 10. Besides, the improvement in the management of STIs can reduce the incidence of HIV-1 infection in the general population by about 40% (Gilson, Mkanje, Grosskurth, Mosha, et al. 1997). STIs prevention and treatment are, therefore, an important component in HIV prevention strategy.

Research findings by Chesson, Blandford, Gift, Tao et al, 2004) revealed that apart from the huge costs associated with identifying the risk factors for STIs and treatment of STIs, young men and women infected constitutes the work force, particularly in developing countries and are consequently hindered in their ability to provide for their families and contribute to the socio-economic growth of the community. It is estimated that STIs account for about 17% of economic losses due to ill health in developing countries (Mayaud Mabey, 2004). In America, the life time medical costs of STIs acquired by youths ages 15-24 in the year 2000 were estimated at about 6.5 billion dollars (Chesson et al, 2004).

In Ghana, a lifetime self-reported prevalence of sexually transmitted infections of about 41%, among men and women was reported (Nyarko., et al, 2014). In Nigeria, it has been reported that young people generally lack knowledge of STIs. According to National Population Commission, 2004; 62% of young women and 40% of young men lack knowledge of STIs. Thus, this reported estimate does not include knowledge on risk factors for STIs. Hence, the need to determine the knowledge of market dwellers on risk factors for STIs.

Data on incidence and prevalence of STIs in Nigeria are limited. This is as a result of under-reporting of STIs which is attributable to inadequate diagnostic and treatment facilities especially in the rural areas, asymptomatic episodes, the stigma of having STIs in the community, and limited access to health care facilities among the slum dwellers. However, only 69 million (20%) of the four curable cases of STI were estimated to have occurred in sub-Saharan Africa, this region had the highest regional incidence rate (256 per 1000) (WHO, 2001). The recent WHO estimates (2005) report a 32% global increase in the number of new cases for these same four infections (448 million) in 15–49-year-olds, with an even higher 59% increase in the number of new cases in sub-Saharan Africa (110 million, almost a quarter of the worldwide burden (WHO, 2011). However, this increase for Africa is due almost entirely to higher estimates of new cases of trichomoniasis, whereas the new 2005 WHO estimates suggest that the number of new cases of chlamydial and syphilis infections have declined compared with 1999. The advent of traditional healers and self-treatment with antibiotics among those contracting STIs has further increased the extent of under-reporting and ineffective treatment in the country (Green, 1992).

Nigeria, unlike in other parts of sub-Saharan Africa, sexual intercourse is the main mode of transmission of STIs. Further studies by Richard and Jay, (2002) revealed that STIs are most common in young sexually active people. It has been reported that the incidence declines with age and that adolescents and young adults experience the highest risk of exposure to STI. The advent of traditional healers and self-treatment with antibiotics among those contracting STIs has further increased the extent of under-reporting and ineffective treatment in the country (Green, 1992a).

In Ghana, a lifetime self-reported prevalence of sexually transmitted infections of about 41%, among men and women was reported (Nyarko., et al, 2014). In Nigeria, it has been reported that young people generally lack knowledge of STIs. According to National Population Commission, 2004; 62% of young women and 40% of young men lack knowledge of STIs. Thus, this reported estimate does not include knowledge on risk factors for STIs. Hence, the need to determine the knowledge of market dwellers on risk factors for STIs.

Data on incidence and prevalence of STIs in Nigeria are limited. This is as a result of under-reporting of STIs which is attributable to inadequate diagnostic and treatment facilities especially in the rural areas, asymptomatic episodes, the stigma of having STIs in the community, and limited access to health care facilities among the slum dwellers. However, only 69 million (20%) of the four curable cases of STI were estimated to have occurred in sub-Saharan Africa, this region had the highest regional incidence rate (256 per 1000) (WHO, 2001). The recent WHO estimates (2005) report a 32% global increase in the number of new cases for these same four infections (448 million) in 15–49-year-olds, with an even higher 59% increase in the number of new cases in sub-Saharan Africa (110 million, almost a quarter of the worldwide burden (WHO, 2011). However, this increase for Africa is due almost entirely to higher estimates of new cases of trichomoniasis, whereas the new 2005 WHO estimates suggest that the number of new cases of chlamydial and syphilis infections have declined compared with 1999. The advent of traditional healers and self-treatment with antibiotics among those contracting STIs has further increased the extent of under-reporting and ineffective treatment in the country (Green, 1992).

Nigeria, unlike in other parts of sub-Saharan Africa, sexual intercourse is the main mode of transmission of STIs. Further studies by Richard and Jay, (2002) revealed that STIs are most common in young sexually active people. It has been reported that the incidence declines with age and that adolescents and young adults experience the highest risk of exposure to STI. The advent of traditional healers and self-treatment with antibiotics among those contracting STIs has further increased the extent of under-reporting and ineffective treatment in the country (Green, 1992a).

According to National Population Commission, 2004; 62% of young women and 40% of young men lack knowledge of STIs. Thus, this reported estimate does not include knowledge on risk factors for STIs. Hence, the need to determine the knowledge of market dwellers on risk factors for STIs.

Research findings by Chesson et al, (2004) revealed that apart from the huge costs associated with identifying the risk factors for STIs and treatment of STIs, young men and women infected constitutes the work force, particularly in developing countries and are consequently hindered in their ability to provide for their families and contribute to the socio-economic growth of the community. It is estimated that STIs account for about 17% of economic losses due to ill health in developing countries (Mayaud et al, 2004). In America, the life time medical costs of STIs acquired by youths ages 15-24 in the year 2000 were estimated at about 6.5 billion dollars (Chesson et al, 2004).

In contrast to the NARHS 2012, research findings by Florence et al, (2011) revealed that the level of awareness of risk factors for STIs is still very low as low levels of awareness and knowledge of sexually transmitted diseases, with the exception of HIV/AIDS. Although, some of the findings on condom use, knowledge does not always translate into behaviour change, adolescents' sex education and awareness of risk factors for STIs is important for STDs prevention. Beyond HIV/AIDS, attention should be paid to STIs such as chlamydia, gonorrhoea and syphilis.

Chisembu et al, (2008) revealed that most studies on the knowledge and awareness of STIs in this part of the world, high concentration is placed on schools and adolescents usually categorized as vulnerable (Mmari et al and Okereke, 2010). There are various interest groups and the extent of knowledge and awareness vary. Wherein the market dwellers that are perceived to be vulnerable have been under researched and have not been included in study population over time.

2.6. Prevalence of Sexually Transmitted Infections

Globally, Sexually Transmitted Infections have reportedly reached an alarming prevalence in several countries especially in sub-Saharan Africa. According to research finding by the National Institute for Allergy and Infectious Diseases (2003) there are more than 20 STIs. Some of the bacterial infections are venereal syphilis, gonorrhoea, chancre, candidiasis, trichomoniasis, non-gonococal urethritis and some others.

According to research findings by Green, (1992) revealed that the data on the incidence and prevalence of STIs in Nigeria are limited. This is as a result of underreporting of STIs which is attributable to inadequate diagnostic and treatment facilities, especially in the rural areas, asymptomatic episodes, the stigma of having an STI, limited access to health care facilities. This research findings further revealed that the use of traditional healers and self-treatment with antibiotics among those contracting STIs further increase the extent of under-reporting and ineffective treatment.

Research findings by Suryakantha, (2009) revealed that in India, the annual incidence of STI is estimated to be about 5 percent of population (approximately 50 million infections annually) and it is on the increase, because of the changes in the lifestyle. That is, one out of 20 sexually active Indians has STI. Research findings by the Federal Ministry of Health and Social Services, (1996) reported that the National average prevalence rates for the various STIs such as Non-gonococal Urethritis (NGU) as 26.3%; post-pubertal gonorrhoea, 18.03%; trichomoniasis, 9.8%; candidiasis 9.62%; chancroid, 4.28% and primary syphilis, 2.2%. Also, in a Technical Report (2001) the Federal Ministry of Health (FMOH) in a survey conducted in 2000 reported higher rates of STIs of about 11.5%.

Sexually transmitted infections continue to present major health, social and economic problems in the developing world, leading to considerable morbidity, mortality and stigma. The prevalence rates apparently are far higher in developing countries where STI treatment is less accessible (Choudhry et al., 2010; Chin, 1990). Most of the STIs, both ulcerative and non-ulcerative, are prevalent in Nigeria and constitute one of the major public health problems. Their profile varies with changes in socioeconomic, cultural, geographic and environmental factors prevalent in different parts of the country (Thapa,

2.6. Prevalence of Sexually Transmitted Infections

Globally, Sexually Transmitted Infections have reportedly reached an alarming prevalence in several countries especially in sub-Saharan Africa. According to research finding by the National Institute for Allergy and Infectious Diseases (2003) there are more than 20 STIs. Some of the bacterial infections are venereal syphilis, gonorrhoea, chancre, candidiasis, trichomoniasis, non-gonococal urethritis and some others.

According to research findings by Green, (1992) revealed that the data on the incidence and prevalence of STIs in Nigeria are limited. This is as a result of underreporting of STIs which is attributable to inadequate diagnostic and treatment facilities, especially in the rural areas, asymptomatic episodes, the stigma of having an STI, limited access to health care facilities. This research findings further revealed that the use of traditional healers and self-treatment with antibiotics among those contracting STIs further increase the extent of under-reporting and ineffective treatment.

Research findings by Suryakantha, (2009) revealed that in India, the annual incidence of STI is estimated to be about 5 percent of population (approximately 50 million infections annually) and it is on the increase, because of the changes in the lifestyle. That is, one out of 20 sexually active Indians has STI. Research findings by the Federal Ministry of Health and Social Services, (1996) reported that the National average prevalence rates for the various STIs such as Non-gonococal Urethritis (NGU) as 26.3%; post-pubertal gonorrhoea, 18.03%; trichomoniasis, 9.8%; candidiasis 9.62%; chancroid, 4.28% and primary syphilis, 2.2%. Also, in a Technical Report (2001) the Federal Ministry of Health (FMOH) in a survey conducted in 2000 reported higher rates of STIs of about 11.5%.

Sexually transmitted infections continue to present major health, social and economic problems in the developing world, leading to considerable morbidity, mortality and stigma. The prevalence rates apparently are far higher in developing countries where STI treatment is less accessible (Choudhry et al., 2010; Chin, 1990). Most of the STIs, both ulcerative and non-ulcerative, are prevalent in Nigeria and constitute one of the major public health problems. Their profile varies with changes in socioeconomic, cultural, geographic and environmental factors prevalent in different parts of the country (Thapa,

Singh, Singh, 1999; Bairy, Balachandran, Shivananda, 2001). However, the availability of baseline information on the epidemiology of STIs and other associated risk behaviours remains essential for the designing, implementing and monitoring successful targeted interventions (WHO, 1994; Risbud, 2005).

2.7. Vulnerable Groups

According to a study conducted by Tracey Pérez, Uddin, Ali, Mashida et al, 2009; Ogunjuyigbe, 2003, Oke, 2012) in Dhaka, the vulnerable groups include the homeless, On-the street children and the youths not-in-school and young people, are extremely vulnerable in terms of their high-risk behaviours. Women especially suffer from physical violence and from all kinds of harassment, a majority of them two to three times per week, ranging from unwanted advances and rude gestures to rape.

This study demonstrates that the designated vulnerable groups are long-term residents of the same areas and that they routinely engage in high-risk behaviour and experience alarming rates of violence and sexual harassment. Thus this study further suggests awareness of risk factors for STIs among the market dwellers.

Furthermore, Ikeako et al, (2014) reported that the risk factors for STIs identified among female traders of reproductive health in Enugu were multiple sexual partners (75.5%), non-use of condoms (62%) and early sexual debut (58%) of the entire study population (200). Stating that the risk factors for STIs is still on the increase. Thereby increasing the prevalence of STIs among this study population and in Nigeria generally.

The table 2.7. below shows the regional estimates of the prevalence and incidence of STIs.

Singh, Singh, 1999; Bairy, Balachandran, Shivananda, 2001). However, the availability of baseline information on the epidemiology of STIs and other associated risk behaviours remains essential for the designing, implementing and monitoring successful targeted interventions (WHO, 1994; Risbud, 2005).

2.7. Vulnerable Groups

According to a study conducted by Tracey Pérez, Uddin, Ali, Mashida et al, 2009; Ogunjuyigbe, 2003, Oke, 2012) in Dhaka, the vulnerable groups include the homeless, On-the street children and the youths not-in-school and young people, are extremely vulnerable in terms of their high-risk behaviours. Women especially suffer from physical violence and from all kinds of harassment, a majority of them two to three times per week, ranging from unwanted advances and rude gestures to rape.

This study demonstrates that the designated vulnerable groups are long-term residents of the same areas and that they routinely engage in high-risk behaviour and experience alarming rates of violence and sexual harassment. Thus this study further suggests awareness of risk factors for STIs among the market dwellers.

Furthermore, Ikeako et al, (2014) reported that the risk factors for STIs identified among female traders of reproductive health in Enugu were multiple sexual partners (75.5%), non-use of condoms (62%) and early sexual debut (58%) of the entire study population (200). Stating that the risk factors for STIs is still on the increase. Thereby increasing the prevalence of STIs among this study population and in Nigeria generally.

The table 2.7. below shows the regional estimates of the prevalence and incidence of STIs.

Table 2.7. Regional Estimates of the Prevalence and Incidence of Sexually Transmitted Infections

Region	Prevalence (per 1000)	Incidence (per million)
Sub-Saharan Africa	119	69
South and South East Asia	50	151
Latin America and Caribbean	71	38
Eastern Europe and Central Asia	29	22
North America	19	14
Australasia and New Zealand	18	1
Western Europe	20	17
North Africa and Middle East	21	10
East Asia and Pacific	7	18
Total		340

Source: World Health Organisation Global, Prevalence and Incidence of Selected Curable Sexually Transmitted Infections: Overview and Estimates: WHO, Geneva 2001

2.8. Control of Sexually Transmitted Infections

Good STI control has been shown in the past to reduce HIV transmission in situations where the rates of bacterial STI are high and the HIV epidemic is on the rise, a situation pertinent to youth even in mature epidemics (Grosskurth, Gray, Hayes, et al. 2000). Over the past decade, the syndromic management approach for STI has been successfully integrated into regional primary healthcare settings. It is widely believed to be the most cost-effective approach to STI control, has the key advantage of providing STI treatment on the same day as the first clinical presentation, and avoids the need for expensive laboratory tests.

The control of STIs is an important element of reproductive health. In Nigeria, according to the research findings by NARHS Plus II, (2012) there are indications that many people self-medicate or patronize traditional healers where the diagnostic equipment are not available and accessible. Because the presence of STIs can increase the likelihood of HIV transmission, hence the need for proper education and control of STIs are important strategies for preventing the spread of HIV. Moreover, only part of the symptomatic population seeks health care and even a smaller number of cases are reported. The social stigma that usually is associated with STIs may result in people seeking care from alternative providers or not seeking care at all. The control of STIs is an important element of reproductive health. In Nigeria, according to research findings, there are suggestive indications that many people self-medicate or patronize traditional healers where the diagnostic equipment are not available and accessible. Because the presence of STIs can increase the likelihood of HIV transmission, hence the need for proper education and control of STIs are important strategies for preventing the spread of HIV WHO, 2001; NARHS Plus II, 2012).

The control of STIs include elimination of reservoirs, breaking the channel of transmission, protection of the susceptibles. Furthermore, Research findings by Suryakantha, (2009) revealed the Practice of "safe-sex" to include having a faithful sexual partner, practicing monogamy, using Condom, if the sexual partner is more than one, and condom to be used Correctly, Continuously and Consistently (that is one condom for every act of sexual intercourse)

2.8.1. Sexually transmitted infections control programmes in Nigeria

Control programme on STIs has not been absolutely effective among the young people in Nigeria. However, targeted programmes have only been directed to the health facilities and school settings, neglecting the health needs of young people who reside and work in market settings. The principles of effective control include the prevention of new infections, treatment of symptomatic infections, identification and treatment of asymptomatic individuals through screening and contact tracing, and promotion of prompt health seeking behaviour among those who are infected but delay or avoid treatment (Ajuwon et al., 2007).

However, according to research findings by Ajuwon et al., (2007) this principle has been enhanced by the establishment of Youth Friendly Services in Nigeria. Although the YFS is still limited to few States in Nigeria. Even with the advent of the YFS, young people in Nigeria still do not have access to the centres at will. This is due to low knowledge of STIs and STIs symptoms as reported by several studies conducted in Nigeria.

2.8.2. Symdromic approach for sexually transmitted infections

Over the past decade, the syndromic management approach for STI has been successfully integrated into regional primary healthcare settings. It is widely believed to be the most cost-effective approach to STI control, has the key advantage of providing STI treatment on the same day as the first clinical presentation, and avoids the need for expensive laboratory tests. Several key improvements in STI/HIV research have been reported from Africa, and quite a lot have been translated into daily clinical practice. However, a key challenge for the region is to scale up successful interventions, which requires sustainable funding, adequate infrastructure and a well-trained workforce. The unrelenting success of syndromic management is currently being challenged by a number of issues. First, the emergence and spread of antibiotic-resistant gonorrhoea within the African region, which requires on-going and close monitoring. Second, it has to be appreciated that syndromic management is a tool to treat symptomatic STI in a cost-effective manner and therefore has little impact on the larger burden of asymptomatic infections (Mabey, Ndowa, Latif. 2010).

Significant fragment of the market dwellers are under-researched in this part of the world. Thus, they have a distinct frame of life which is critical as it observed across various markets in the country, and are known to live in their respective market slums. They are the marginalized group, and do not have access to quality and comprehensive health care. They are sexually active and vulnerable, have poor knowledge on how to protect themselves against STIs and they are in the low socio-economic group which can predispose them to various diseases like STIs.

2.9. Intervention on Sexually Transmitted Infections

2.9.1. Vaccines and other biomedical interventions

According to literature reviews, safe and highly effective vaccines are available for 2 STIs: hepatitis B and human papillomavirus (HPV). These vaccines have represented major advances in STI prevention. The vaccine against hepatitis B is included in infant immunization programmes in 93% of countries and has already prevented an estimated 1.3 million deaths from chronic liver disease and cancer. HPV vaccine is available as part of routine immunization programmes in 45 countries excluding Nigeria, most of them high-and-middle-income. HPV vaccination could prevent the deaths of more than 4 million women over the next decade in low- and middle-income countries, where most cases of cervical cancer occur, if 70% vaccination coverage can be achieved. Research to develop vaccines against herpes and HIV is advanced, though no viable vaccine candidates for either infection have yet emerged. Research into vaccines for chlamydia, gonorrhoea, syphilis and trichomoniasis is in earlier stages of development. Other biomedical interventions to prevent some STIs include adult male circumcision and microbicides. Male circumcision reduces the risk of heterosexually acquired HIV infection in men by approximately 60% and provides some protection against other STIs, such as herpes and HPV (WHO media centre, 2013).

2.9.2. Intervention on sexually transmitted infections in Nigeria

One of the interventions that have been put in place to address the increasing rise in the incidence and prevalence of STIs in Nigeria is the establishment of Youth Friendly Health Services Centres in South western part of the country which is just for the in-school and out-of-school youths whereas, the market dwellers do not have access to such facilities nor information on their arising health issues (FMOH, 2009).

According to the survey conducted by Osanyin, (2012) youth friendly health services in Nigeria, has been beneficial to young people and significant achievements as been recorded. Although, there is still room for improvements because the centres are not yet representative of the young people's population in Nigeria.

2.9.3. Current efforts to contain the spread of sexually transmitted infections

Behaviour change is complex

Current efforts to contain the spread of STIs are not yet sufficient despite considerable efforts to identify simple interventions that can reduce risky sexual behaviour, behaviour change remains a complex challenge. Research has demonstrated the need to focus on carefully defined populations, consult extensively with the identified target populations, and involve them in design, implementation and evaluation (WHO, 2013).

Health services for screening and treatment of sexually transmitted infections remain weak

According to research findings reported by the WHO media centre, (2013) reveals that people seeking screening and treatment for STIs face numerous problems. These include limited resources, stigmatization, poor quality of services, and little or no follow-up of sexual partners. In many countries, STI services are provided separately and not available in primary health care, family planning and other routine health services. Also, in many settings, services are often unable to provide screening for asymptomatic infections, lacking trained personnel, laboratory capacity and adequate supplies of appropriate medicines. Marginalized populations with the highest rates of STIs—such as sex workers, men who have sex with men, people who inject drugs, prison inmates, mobile populations and adolescents—often do not have access to adequate health services. WHO develops

global norms and standards for STI treatment and prevention, strengthens systems for surveillance and monitoring, including those for drug-resistant gonorrhoea, and leads the setting of the global research agenda on STIs. The approach is guided by Millennium Development Goals 4, 5 and 6, the global strategy for the prevention and control of STIs adopted by the World Health Assembly in 2006 and the 2010 United Nations Secretary-General's Global Strategy for Women's and Children's Health, which highlights the need for a comprehensive, integrated package of essential interventions, including information and services for the prevention of HIV and other sexually transmitted infections. WHO works with countries to, scale-up effective STI services, promote strategies to enhance STI-prevention impact, support the development of new technologies for STI prevention.

2.10. Prevention of Sexually Transmitted Infections

In diagnosis and treating patients with STIs, we can effectively prevent complications and reduce the spread of these diseases to the general community. All persons who seek evaluation and treatment for STDs should be screened for HIV infection as well. Screening should be routine, regardless of whether the patient is known or suspected to have specific behavioural risks for HIV infection. Individuals who are infected with STDs are 5 – 10 times more likely than uninfected individuals to acquire or transmit HIV through sexual contact. The breaking of the genital tract lining or skin creates a portal of entry for HIV, and HIV infected individuals with other STDs are more likely to shed HIV in their genital secretions. The most effective male method available for protection against STDs is the condom (Carlos, 2008).

2.10.1. Prevention of sexually transmitted infections among young people

STI, being the consequence of unprotected sexual intercourse and young people who are sexually active and are often involved in high risky sexual practices as the sexual contact among them are unprotected. The use of contraception by youth is generally poor and they are less likely to use condoms than adults because of lack of access and, for girls in particular, inability to insist on their use. The correct and consistent use of condoms is highly effective in preventing sexual transmission of STDs and HIV among males. However, condom use is increasingly everywhere except in developing countries

(Wellings, 2006). Among sexual practices and believe is that condom-free intercourse has been viewed as a sign of trust (CDC, 2006). Despite these facts, the sexual behaviour determinants of STIs and HIV transmission are often difficult to study and identify for cultural and religious reasons.

However, counselling and behavioural interventions offer primary prevention against STIs (including HIV), as well as against unintended pregnancies. These include comprehensive sexuality education, STI and HIV pre- and post-test counselling, safer sex/risk-reduction counselling, condom promotion, and Interventions targeted at key and vulnerable populations, such as adolescents, sex workers, men who have sex with men and people who inject drugs. In addition, counselling can improve people's ability to recognize the symptoms of STIs and increase the likelihood they will seek care or encourage a sexual partner to do so. Unfortunately, lack of public awareness, lack of training of health workers, and long-standing, widespread stigma around STIs remain barriers to greater and more effective use of these interventions. When used correctly and consistently, condoms offer one of the most effective methods of protection against STIs, including HIV. Female condoms are effective and safe, but are not used as widely by national programmes as male condoms (Ajuwon et al., 2007).

2.11. Diagnosis of Sexually Transmitted Infections

Accurate diagnostic tests for STIs are widely used in high-income countries. These are especially useful for the diagnosis of asymptomatic infections. Since symptoms of common STIs tend to be non-specific and typically have a variety of different potential causal agents that may require different treatments (WHO, 2013). However, in low- and middle-income countries, diagnostic tests are largely unavailable. Where testing is available, it is often expensive and geographically inaccessible; and patients often need to wait a long time (or need to return) to receive results. As a result, follow up can be impeded and care or treatment can be incomplete. These tests vary greatly in terms of their level of complexity (i.e. the technical requirements for optimal test performance), in the costs required to perform them (both material-and-labour-related), and in terms of performance (WHO, 2013). It should be noted that when considering the type of test, the

time required for the test results to become available to guide management should be considered, since infected persons transmit infection to others, may suffer complications of infection, or maybe lost to follow-up in the interval between testing and notification of results (Unemo et al., 2013).

The only inexpensive, rapid blood test currently available for an STI is for syphilis. This test is already in use in some resource-limited settings. The test is accurate, can provide results in 15 to 20 minutes, and is easy to use with minimal training. Rapid syphilis tests have been shown to increase the number of pregnant women tested for syphilis. However, increased efforts are still needed in most low- and middle-income countries to ensure that all pregnant women receive a syphilis test (WHO, 2013). Several rapid tests for other STIs are under development and have the potential to improve STI diagnosis and treatment, especially in resource-limited settings. Syndromic management is effective in treating UD in men and in treating syphilis and chancroid in men and women when laboratory diagnostic techniques are not possible. Focusing and strengthening programs to improve detection and treatment of male gonococal infections and male and female genital ulcers is important; however, management of cervical infection using VD algorithms is problematic (Pettifor, 2000).

Remarkably, STIs are preventable diseases and their prevention is even a priority for the World Health Organization (WHO). WHO further stated that Sexuality is an integral part of the personality of everyone: man, woman and child including young people need to know their own personal values and beliefs about relationships and sex (WHO, 2011 and Oke 2012). However, the market dwellers do not have access to useful information, attention and care concerning their sexuality. It must, however, be emphasised that sexually transmitted infections and AIDS are highly stigmatised in Nigeria and persons infected are likely to keep the news to themselves. There is, therefore, reason to believe that the proportion which reported ever having STD or AIDS is on the conservative side Ogunjuyigbe (2003). Hence the need for pragmatic interventions and studies that will help reduce the prevalence of this STIs across various groups.

Research findings by IBBSS, (2007) revealed that the prevalence of self – reported STIs is consistently on the increase among Transport workers, Armed forces, Police officers, Injection drug users and Men having sex with men in selected States in Nigeria, and this population includes those within the high socio – economic groups. Hence the need for this study among the market dwellers who are reportedly disadvantaged and within the low socio – economic group in the society.

Researches and interventions on STIs have been done among various groups in the country. Studies in STIs have been carried out among males, females, pregnant women, traders, In-school and Out-of-school youths, truck drivers among others. But I am yet to come across any study on that has been done on risk factors for STIs among the market dwellers with the exception of the study conducted by Ogunjuyigbe (2003), among youths not-in-school, who revealed that about 40% of the study participants live in the market.

CHAPTER THREE

3.0. METHODOLOGY

3.1. Study Area

This study was carried out in Agbeni and Bodija Markets which are located in Ibadan North West and Ibadan North LGAs Oyo State, Nigeria. The capital of Oyo State is Ibadan, the most populous city in black Africa and is also reputed to be the largest indigenous city in Africa, south of the Sahara. Ibadan had been the centre of administration of the old Western Region, Nigeria since the days of the British colonial rule. Ibadan, surrounded by seven hills, is the second largest city in Nigeria. It is situated 78 miles inland from Lagos, and is a prominent transit point between the coastal region and the areas to the north. Parts of the city's ancient protective walls still stand till today, and its population is estimated to be about 3,800,000 according to 2006 estimates. The principal inhabitants of the city are the Yoruba.

Ibadan grew into an impressive and sprawling urban centre so much that by the end of 1829, Ibadan dominated the Yoruba region military, politically and economically.

3.2. Study Setting

Agbeni market

Agbeni market is located in the Ibadan North West Local Government area, in the heart of the ancient city of Ibadan and is surrounded by other neighbouring markets. The market is a wholesalers market that serves as a feeder to other markets or traders who are involved in the sale of processed household provisions and supplies produced by the manufacturing industry in the state and beyond. Any visit to the market is often characterized by clumsy transit of light industry vehicles that have come to let off goods for wholesalers in this major market. These goods mostly arrive very late at night, hence require the services of market dwellers for the offloading and security of the goods. Some of the market dwellers, popularly known as the "Alabarus/Porters" also help with goods carrying/lifting during the day due to the long distance of the car/taxi parks to the stalls.

CHAPTER THREE

3.0. METHODOLOGY

3.1. Study Area

This study was carried out in Agbeni and Bodija Markets which are located in Ibadan North West and Ibadan North LGAs Oyo State, Nigeria. The capital of Oyo State is Ibadan, the most populous city in black Africa and is also reputed to be the largest indigenous city in Africa, south of the Sahara. Ibadan had been the centre of administration of the old Western Region, Nigeria since the days of the British colonial rule. Ibadan, surrounded by seven hills, is the second largest city in Nigeria. It is situated 78 miles inland from Lagos, and is a prominent transit point between the coastal region and the areas to the north. Parts of the city's ancient protective walls still stand till today, and its population is estimated to be about 3,800,000 according to 2006 estimates. The principal inhabitants of the city are the Yoruba.

Ibadan grew into an impressive and sprawling urban centre so much that by the end of 1829, Ibadan dominated the Yoruba region military, politically and economically.

3.2. Study Setting

Agbeni market

Agbeni market is located in the Ibadan North West Local Government area, in the heart of the ancient city of Ibadan and is surrounded by other neighbouring markets. The market is a wholesalers market that serves as a feeder to other markets or traders who are involved in the sale of processed household provisions and supplies produced by the manufacturing industry in the state and beyond. Any visit to the market is often characterized by clumsy transit of light industry vehicles that have come to let off goods for wholesalers in this major market. These goods mostly arrive very late at night, hence require the services of market dwellers for the offloading and security of the goods. Some of the market dwellers, popularly known as the "Alabarus/Porters" also help with goods carrying/lifting during the day due to the long distance of the car/taxi parks to the stalls.

The market is largely occupied by Yorubas and very few Hausas, who are majorly illiterates, but the art with which they trade is second to none in any market around the state. Even cigarettes and other tobacco products are sold on a wholesale scale in this market.

The four sections in this market which include; General traders section, Labourers section, Truck pushers section, and the Load Carriers/Lifters (porters) Section were sampled for this study.

Bodija market

Bodija market is located in the Ibadan North Local Government area, just about one kilometre from the University of Ibadan along Oyo State Government's Secretariat road. It's mainly occupied by Yorubas and Hausas, who have in time past been involved in a few inter-tribal clashes. But the strength of this market also lies in its ability to make peace and coexist despite differences. This ethnic diversity has however helped the market to stand as the main recipient and distributor of cattle moved from different parts of northern states to Ibadan. Bodija market is one of the biggest markets in Ibadan.

The major goods sold at this market include beef, onions, bags of rice, Palm and groundnut oil, yam flour, and other food stuff in general. Most of the goods sold in the market usually arrive very late at night, hence require the services of market dwellers for the offloading and security of the goods. Some of the market dwellers, popularly known as the "Alabarus" also help with goods carrying/lifting during the day due to the long distance of the car/taxi parks to the stalls.

Being a very big and busy market, Bodija market has various types of solidarity associations, based on goods or services being sold. Though this market is surrounded by banks, no sign of cashless payment, transactions are still principally via cash payment.

The three sections in this market include the Abateur section, Food stuff/provision section, and Saw mills section were sampled for this study.

3.3. Study Design

In carrying out this study, cross-sectional study design was adopted.

In order to answer the objectives of this study, and gain a better understanding of the stated problems, the research focused on collecting and analysing data by making use of both quantitative and qualitative data with the use of questionnaires and key informant interviews respectively (Creswell, 2006).

Qualitative research method was used to gather data and gain an in-depth understanding about the markets dwellers in Ibadan. The researcher also looked at numerical descriptions through quantification of the differences in the knowledge and awareness of the market dwellers on types and symptoms of sexually transmitted infections, alongside determining the presence of symptomatic self – reported STIs.

The application of both quantitative and qualitative methods enabled the researcher to gain a comprehensive and in-depth understanding on the reasons why young people live in the market and also determine their level of susceptibility.

3.4. Study Population

The study population of this study were the market dwellers in Ibadan. This included people who are homeless and reside in the market 12 months preceding this study. Such as those who engaged in load carriers/lifters (porters), the on-the street youths, youths not-in-school, security guards and young adults in Agbeni and Bodija Markets.

3.5. Sample Size Estimation

The sample size used for this study was calculated using the formula below:

$$\cap = \frac{Z_{\alpha}^{2} P (1 - P)}{D^{2}}$$

Where:

Z_{α}^{2} = 1.96 (Standard normal deviation at 95% confidence level)

P = 11.5% (Prevalence rate of self – reported STIs, FMOH, 2001).

1 – P = 88.5% (Proportion of those who did not have symptomatic self – reported STIs).

D = 0.05 (Precision level set at 5%).

$$\cap = \frac{1.96^{2} \times 0.115 (1 - 0.885)}{0.05^{2}}$$

$$\cap = 156$$

$$N = \frac{\cap}{1 - \cap_{r}}$$

$$N = \frac{156}{1 - 10}$$

After calculating the non – response rate, a minimum sample size of 174 was obtained for this study.

3.6 Sampling Technique

3.6.1. Quantitative method

For the purpose of this study among those who are homeless and reside in the market, a consecutive sampling technique was used to sample respondents in this study. From the seven sections in the market, where Agbeni market has four sections and Bodija market three sections, market dwellers were stratified based on goods sold.

3.6.2. Qualitative method

For the qualitative aspect of this study, Purposive sampling was used to select four key informants. However, only three out of the four informants were available for the interview despite their busy schedule. The criteria used for selecting the key informants were as follows:

a). The key informants were members of the Oyo State Traders Association.

b). The key informants was also part of the market heads in the sampled market sections.

3.7 Study Variable

3.7.1. Dependent variables

Knowledge about risk factors for STIs and presence self-reported STI in the past twelve months – Questions asked include number of partners, type of partners (regular and multiple sexual partners).

Condom use with partner(s) – Sometimes, never, or every time.

Sexual Behaviour – Participants were queried about multiple sexual practices and unprotected sexual practices (condom use in the past 12 months with regular, casual and multiple sexual partners).

History of STIs – Participants were queried on their STI status in the past 12 months, using STIs syndromic approach as the standard.

3.7.2. Independent variables

The independent variables were the Socio-demographic factors such as, age, gender, ethnicity, marital status, educational qualification, religion, market dwellers, and years lived in the market).

3.7.3. Variable definition/indicators

- Consistent condom use is defined as always using a condom for vaginal and anal sex; otherwise condom use was considered to be inconsistent (Chakrapani et al, 2010).
- Risky sex was defined as inconsistent or no condom use with partners of STI/HIV-negative or unknown zero-status in the past six months (Bunnel et al, 2006).
- Condom usage will be divided into almost always or everytime, sometimes and never usage group. Always-use indicates that a condom was used for 100% of vaginal penetrative acts (0%). Sometimes-use includes all intermediate estimates of usage (1-99%) and never and sometimes (0-99%) or always.
- Regular partners was defined as "your main or primary partners with whom you have an ongoing sexual relationship (the partner may be referred to as your lover or husband/wife).
- Casual partners was defined as sexual relations not involving a love relationship, especially brief encounters or an encounter on one occasion.

3.8. Research Instrument

3.8.1. Questionnaire

The use of questionnaires enabled the researcher to collect data by engaging in a special type of conversation with respondents in which the researcher asked questions relevant to the study problem and the objectives of the study (Olsen & George, 2004). Quantitative data with closed ended questions, had predetermined responses that restricted the answer set, and made them easier to administer and analyse using the statistical package for social sciences (SPSS). Open ended questions were also asked on respondents suggestions towards the reducing the persistently high prevalence and incidence of STIs. An interviewer administered semi-structured questionnaire was used to collect data in this study. The questionnaire was sub divided into four sections (A to D) to provide relevant information on each section. The sections include:

Section A: Describes socio-demographic characteristics such as age, sex, ethnicity, occupation, market dwellers and years lived in the market.

Section B: Describes knowledge of the risk Factors of sexually transmitted infections such as regular, casual, and multiple sexual partners).

Section C: Describes sexual behaviour and history of sexually transmitted Infections such as sexual debut and condom use.

Section D: Describes self – reported sexually transmitted infections (WHO syndromic approach).

3.8.1.1. Knowledge of the Respondents

Knowledge on sexually transmitted infections was categorized into good, fair, and poor on a percentile scale. A total score was computed based on the fact that a score of 1 was assigned to each correct response while 0 was assigned to each wrong response. Those who had a score less than the 33rd percentile were graded as having poor knowledge, those who scored between 33rd – 66th percentile were graded fair while those who had a score greater than the 66th percentile were graded as having good knowledge.

3.8.1.2. Response to Sexual behaviour and Presence of symptomatic sexually transmitted infection

Response to sexual behaviour and presence of symptomatic sexually transmitted infection were asked with questions that had a "Yes" or "No" response and were categorized into Poor or Good. A total score was computed based on the fact that a score of 1 was assigned to each correct response while 0 was assigned to each wrong response. Those who had responses scores less than the 60th percentile were graded as having good response.

3.8.2. Key Informant Interview

Key informants were identified purposively as those who could give relevant information as regards the objectives of the study. Participants invited include the sectional market heads from Agbeni and Bodija markets in Ibadan. Agbeni market leader was also

interviewed as a key informant to have a concrete understanding on why people live in the market and the exact place they sleep at night.

The interview was semi-structured, allowing the researcher to probe for clarification and ask follow-up questions in order to gain a better understanding of the research problems (Leedy & Omrod, 2001). All interviews were conducted at the participants store in the market and each session lasted 45 minutes on average.

3.9. Pre-test of Research Questionnaire

Two pre-test were carried out in two similar markets (Ogunpa and Sango) to the study area in Ibadan which were not included in the study with a prior introduction letter written to the market heads. The questionnaire was pre-tested within three days (10^{th} – 12^{th} August, 2015). The developed questionnaire was pre-tested on a sample of 35 respondents. This was followed by a discussion with the participants in order to determine their understanding of the questionnaire. Their responses were then coded, entered and analysed with SPSS software. The questions were adjusted and ambiguous questions were corrected following the pre-test. The process of modifying the questions was to ensure clarity and simplicity of language, and also to enhance appropriate response from the respondents.

3.9.1. Validity of research questionnaire

Validation of the research questionnaire which was done through drafting of a proposed questionnaire involved consultation from experts (Dr. Christiana Nyarko-Ghana & Dr Sekoni-Lagos) in Public health, comments from supervisors and lecturers in the department. Also, similar literatures to the study were consulted to validate the content of the questionnaires.

3.10. Data Management and analysis

3.10.1. Quantitative data

Data from the questionnaire was entered, coded and then analysed using descriptive statistics with SPSS version 21. Descriptive statistics such as means, standard deviations, proportion and frequency tables were used to summarize quantitative variables. Chi square

test was used to determine an association between categorical variables while logistic regression was used to determine the presence of symptomatic self – reported sexually transmitted infection. Results of the logistic regression analysis were presented with a 95% confidence interval (CI). A probability level of $p < 0.05$ was accepted as being statistical significant.

3.10.2. Qualitative data

Qualitative data from key informant interviews were organized into five sub sections: General Information, Market Dwellers, Occupation, Sexual Behaviours and Interventions. Responses from the interviews were transcribed accordingly to meet the objectives of the study. (Please refer to Appendix 4).

3.11. Ethical Consideration

a) Prior to the commencement of the research, an ethical approval letter was obtained from the Ethics Review Committee of the Oyo State Ministry of Health for the approval of the research protocol and study instrument.

b) Before commencement of the administration of the questionnaire, permission was obtained from each market head.

c) The purpose of the research was explained to the participants, and informed consent was obtained from each participant before attempting data collection.

d) Information gathered from the respondents was kept confidential. All documents were stripped off participants' names and unique numbers/identifiers were used for identification. Only concerned individuals were allowed to handle documents containing participants' information. Similarly, Participants responses from the key informant interviews were audio recorded and note taking was also done simultaneously. All recorded and noted information were deleted and destroyed on completion of the research.

e) Data collected was saved on a password protected computer and data obtained was back-up to an external hard drive. Only authorized individuals were allowed to handle the respondents' information.

f) Participation in this research was entirely voluntary. Eligible individuals were assured of their choice to either participate in the study or not.

g) The external validity of the outcome of this study is perceived to be promising based on the findings generated. Thereby providing policy makers with baseline information on market dwellers for extensive programme planning and implementation towards achieving the MDG 6. All participants were educated on practicing safer sexual practices during the data collection in other not to place themselves at risk of disease progression of sexually transmitted infection, super-infection and also not placing others at risk.

h) The risk of harm to study participants was low. Participants were educated on the best practices in preventing transmission of sexually transmitted infections, also correct and consistent use of condom at every sexual intercourse or vulnerable stage of their job was demonstrated. Password protected computerized systems was used for data management.

i) Filling the questionnaire took about 20-30 minutes of the participants' time. Each participant was given a pack of detergent and also, male and female condoms were made available to all participants voluntarily.

j) All the protocols used which include the consent forms and procedures for collection of samples for this study were communicated to the consenting participants in the language best understood by them, to ensure holistic understanding of all the processes involved in this study. The questionnaire was translated into Yoruba Language for individuals who are more comfortable with the local language.

CHAPTER FOUR

4.0. RESULTS

4.1. Socio-Demographic Characteristics of the Respondents

Two hundred and thirty – Four (234) questionnaires were administered and Two Hundred and Twenty – Nine questionnaires were retrieved and it was an interviewer – administered questionnaire. Out of this number, five (5) questionnaires were not analysed due to poor filling. The data analysis was therefore carried out with Two Hundred and Twenty – Nine questionnaires.

The table 4.1.below shows that majority 40.2% of the respondents were within the age category of 25 and above. A greater proportion of the respondents were males (81.3%). majority (64.6%) were single, higher proportion (33.2%) had primary education, majority (84.3%) were Muslims and almost all 82.1% were of the local Yoruba tribe.
Majority of the participants studied engaged in Load carrying and lifting (LCL) 71.6%, and those who have lived in the market below 5 years had the highest proportion (69.4%) of the market dwellers. The respondent's mean age was 25.24 ± 8.85 years.

Table 4.1.1. Percentage Distribution of Socio – Demographic Profile

Variable	Frequency (N=229)	Percentage (%)
Age (years)		
<15	17	7.4
15 – 19	38	16.6
20 – 24	82	35.8
25 and Above	92	40.2
Mean ± SD		**25.24 ± 8.85**
Sex		
Male	187	81.7
Female	42	18.3
Marital Status		
Single	148	64.6
Married	75	32.8
Separated	6	2.6
Highest Educational level		
No Formal Education	70	30.6
Primary School	76	33.2
Completed JSS	49	21.4
Completed SSS	34	14.8
Vocation		
Load Carriers/Load Lifters Semi-skilled	164	71.6
Food Vendors	13	5.7
Load Carriers/Load Lifters & Other Jobs	22	9.6
Apprentice & Other Jobs	30	13.1
Ethnic Group		
Yoruba	188	82.1
Hausa	30	13.1
Igbo	8	3.5
Others	3	1.3
Religion		
Christianity	35	15.3
Islam	193	84.3
Traditional	1	0.4
Market Dwellers		
Yes	161	70.3
No	68	29.7
Years Lived in the Market		
<5 years	159	
5 – 9	34	32.8
10 – 14	23	50.0
15 and Above	13	17.2
Mean		**1.52±0.89**

4.2. Association between Respondents' Socio-Demographic Characteristics and Symptomatic Self-Reported Sexually Transmitted Infections

The table 4.2. below shows that there was a statistically significant association between respondents' age, sex, level of education, occupation, years lived in the market and presence of symptomatic self – reported STI 12 months preceding the study.($p<0.05$).

However, the association between market dwellers and presence of symptomatic self – reported STI was not statistically significant ($p<0.05$).

Table 4.2. Association between Respondents Socio-Demographic Characteristics and Presence of Self-Reported Sexually Transmitted Infection

Variables	Frequency	Total	Percentage	X^2	P – Value
Age (Groups)					
<15	2	17	0.9	24.994	<0.001*
15 – 19	12	38	5.2		
20 – 24	32	82	14.0		
25 and Above	59	92	25.8		
Sex					
Male	74	187	32.3	16.193	<0.001*
Female	31	42	13.5		
Educational Level					
No Formal Education	6	11	2.6	12.470	0.014*
Primary School	23	76	10.0		
Completed JSS	23	49	10.0		
Arabic School	34	59	14.8		
Completed SSS	19	34	8.3		
Occupation					
Load Carriers/Lifters	83	164	36.2	17.351	<0.001*
Food Vendors	9	13	3.9		
Load Carriers/Lifters+	9	22	3.9		
Apprentice and Other Jobs	4	30	1.7		
Market Dwellers					
Yes	69	161	30.1	1.958	0.162
No	36	68	15.7		
Years Lived in the Market					
<5	63	159	27.5	8.296	<0.040*
5 – 9	21	34	9.2		
10 – 14	13	23	5.7		
15 and Above	8	13	3.5		

*Statistically significant at 5%. CI: Confidence interval, OR: Odds ratio

4.2.1. Relationship between Respondents' Socio-Demographic Characteristics and Symptomatic Self-Reported STI

The table 4.2.1. shows that after adjusting for confounders, only age, sex and number of years lived in the market remained statistically significant ($p<0.05$).

Relationship between sex and the presence of symptomatic self-reported STI

Female respondents are 4.2 times more likely to have had symptomatic self – reported STIs in the past 12 months (OR= 4.16, 95% CI= 1.41 – 12.34), compared to the male respondents. There is a strong positive statistically significant relationship between sex and symptomatic self – reported STIs.

Relationship between Market Dwellers and the presence of symptomatic self-reported STI

Market dwellers are 1.2times more likely to have had symptomatic self – reported STI the past 12 months (OR= 1.15, 95% CI= 0.42 – 3.17), compared to those who do not live in the market. There is a weak positive not statistically significant relationship between respondents who live in the market compared to those who do not.

Relationship between duration of years lived in the Market and the presence of symptomatic self – reported STI

Respondents who have lived in the market between 5 – 9 years are 3.4times more likely to have had symptomatic self – reported STI the past 12 months (OR= 3.44, 95% CI= 1.34 – 8.83), compared to those who have lived <5years.

The higher the number of years lived in the market, the lower the exposure of the respondents to symptomatic self – reported STIs.

Relationship between Occupation and the presence of symptomatic self – reported STI

Load carriers/lifters are 3.7 times more likely to have had symptomatic self – reported STI the past 12 months (OR= 3.69, 95% CI= 1.12 – 12.18), compared to those who engage in other jobs. There is a strong positive statistically significant relationship between occupation and symptomatic self – reported STI.

Table 4.2.1. Relationship between Respondents' Socio-Demographic Characteristics and Presence of Symptomatic Self-Reported STI

Variables	OR	P – Value	95% CI	
			Lower	Upper
Age (Groups)				
<15	0.20	0.090	0.03	1.29
15 – 19	0.33	0.040*	0.11	0.95
20 – 24	0.37	0.022*	0.16	0.86
25 and Above (ref)	1			
Sex				
Male (ref)	1			
Female	4.16	0.010*	1.41	12.34
Educational Level				
No Formal Education (ref)	1			
Primary School	0.38	0.207	0.08	1.72
Completed JSS	0.78	0.751	0.16	3.71
Arabic School	1.35	0.708	0.28	6.58
Completed SSS	1.80	0.843	0.23	6.08
Occupation				
Load Carriers/Lifters	3.69	0.032*	1.12	12.18
Food Vendors	5.03	0.124	0.64	39.42
Load Carriers/Lifters+	1.72	0.480	0.38	7.74
Apprentice & Other Jobs (ref)	1			
Market Dwellers				
Yes (ref)	1			
No	1.15	0.781	0.42	3.17
Years Lived in the Market				
<5 (ref)	1			
5 – 9	3.44	0.010*	1.34	8.83
10 – 14	1.23	0.733	0.38	3.97
15 and Above	1.5	0.860	0.25	5.24

*Statistically significant at 5%. CI: Confidence interval, OR: Odds ratio

4.3. Prevalence of Symptomatic Self – Reported Sexually Transmitted Infections

The table 4.3. shows that the symptomatic self – reported prevalence of STI among market dwellers is about (30.1%) while the remainder (15.7%), reported not to have had symptomatic self – reported STI in the past 12 months preceding the study. However, there was no statistically significant association between Marker dwellers and symptomatic self – reported STI.

Overall, about 45.9% of the respondents reported to have had symptomatic self – reported STI in the past 12 months preceding the study while others 54.1 % reported otherwise.

Table 4.3. Percentage Distribution of Respondents' Presence of Symptomatic Self – Reported STI in the Past 12 Months

Market Dwellers Responses	Frequency	Percentage
Yes	69	30.1
No	36	15.7
No response	124	54.2
Total	**229**	**100**

All Respondents Responses	Frequency	Percentage
Yes	105	45.9
No	24	54.1
Total	229	100

4.4. Knowledge of the Respondents about Risk Factors, Symptoms and Types of STIs

4.4.1. Awareness about Sexually Transmitted Infections (STIs)

The table 4.4.1. shows that adequate knowledge is of utmost importance in the fight against the rampaging effects of STIs, particularly, HIV/AIDS because almost all the respondents reported high knowledge.

4.4.2. Awareness and Knowledge about Risk Factors of STIs

Majority (64.6%) of the respondents reported to have heard of the risk factors of STIs in the past 12 months preceding the study. However, after the study was concluded, almost all the respondents reported to have good knowledge of the risk factors of STIs.

About (33.6%) of the respondents reported to be aware of the fact that STIs can be asymptomatic while others (64.6%), reported otherwise.

Table 4.4.1. Percentage of the Distribution of Respondents' Awareness about STIs

Response	Frequency	Percentage
Yes	221	96.5
No	8	3.5
Total	**229**	**100**

Percentage Distribution of Respondents' Awareness and Knowledge about Risk Factors of STIs

Variables	Frequency	Percentage
Awareness of Risk Factors of STIs		
Yes	148	64.6
No	81	35.4
Total	**229**	**100**
Knowledge of Risk Factors of STIs		
Yes	222	96.9
No	3	1.3
No Response	4	1.7
Total	**229**	**100**
Knowledge of Asymptomatic STIs		
Yes	77	33.6
No	148	64.6
No Response	4	1.7
Total	**229**	**100**

4.4.3. Respondents' Source of Knowledge on Sexually Transmitted Infections

The results in Figure 4.4.3. shows a relatively high level of awareness of STIs among the respondents. Television/radio set were the highest source of information among those who have heard of STIs 12 months preceding the study reported.

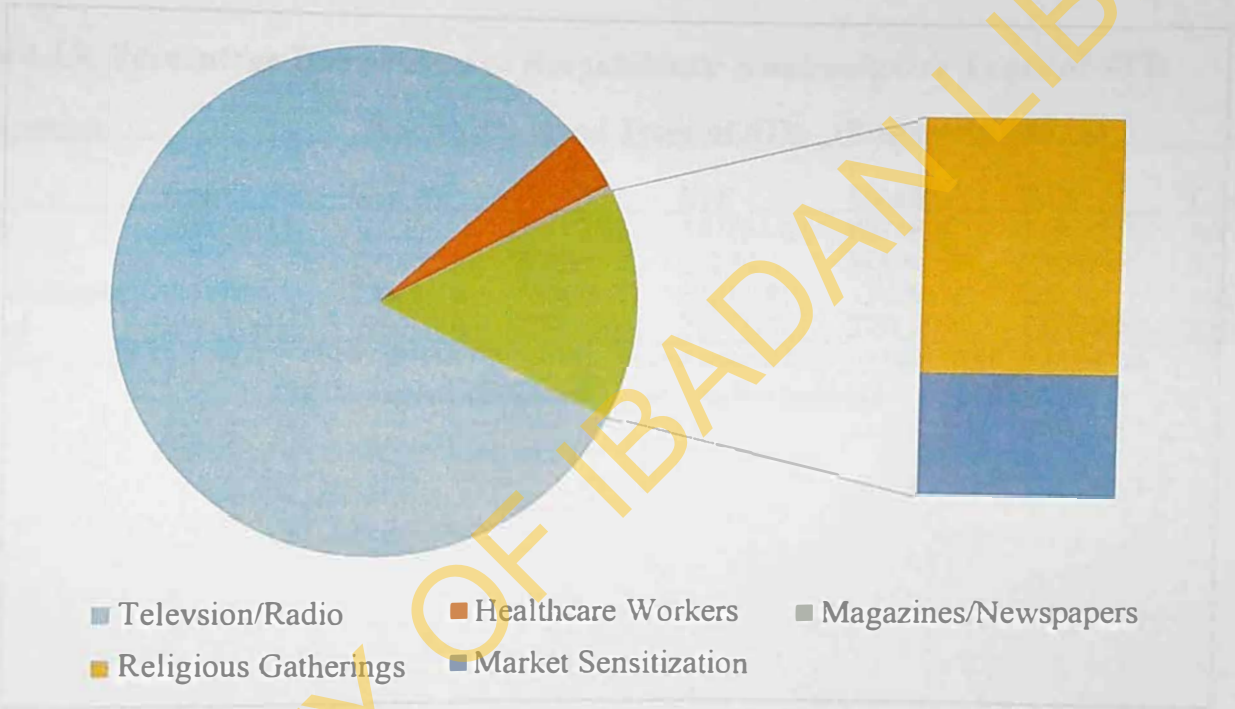

Figure 4.4.3. Showing the Distribution of Respondent's Source of Knowledge on STI

4.4.4. Knowledge about Types of Sexually Transmitted Infection

The conventional STIs include Gonorrhoea, Syphilis, Chancroids, Herpes Genitalis, Chlamydia infection amongst others. Fig. 4.4.2. shows the distribution of knowledge of STIs according to types among the respondents. The figure showed that the most known types of STIs among the respondents were HIV, Gonorrhoea, Syphilis and Hepatitis B while the least known STI was Chancroids, Trichomoniasis and Genital Warts which reported 20.1%, 10% and 46% respectively.

Table 4.4.4. Percentage Distribution of Respondents' Knowledge on Types of STIs

Responses	Knowledge about Types of STIs (Frequency and %)						
	GonO	GenW	TriC	SyP	HepB	HIV	ChanN
Yes	220(96.1)	7(3.1)	23(10.0)	141(61.6)	88(38.4)	226(98.7)	46(20.1)
No	-	2(0.9)	2(0.9)	6(2.6)	8(3.5)	1(0.4)	35(15.3)
No response	9(3.9)	220(96.1)	204(89.1)	82(35.8)	131(58.1)	2(0.9)	148(64.6)
Total	229(100)	229(100)	229(100)	229(100)	229(100)	229(100)	229(100)

Key: GonO: Gonorrhoea; GenW: Genital Warts; TriC: Trichomoniasis; SyP: Syphilis; HepB: Hepatitis B; HIV: Human Immunodeficiency Virus; ChaN; Chancroid.

4.4.5. Knowledge about Symptoms of HIV/AIDS

Generally, knowledge of STI symptoms was low among respondents who reported to have had symptomatic self – reported STIs 12 months preceding this study. Majority of the respondents reported that the most known symptoms of STIs were itching followed by discharge from the genitals, pain during urination, sores/ulcer and lower abdominal pain while groin swelling and pain during sex were least reported.

Table 4.4.5. Percentage Distribution of Respondents' Knowledge on Symptoms of STIs

Responses	Knowledge about Symptoms of STIs (Frequency and %)						
	Itc	**Dis**	**S/U**	**GnS**	**PdS**	**PdU**	**LaP**
Yes	229(100)	214(93.4)	188(82.1)	145(63.3)	107(46.7)	214(93.4)	162(70.7)
No	-	-	-	2(0.9)	3(1.3)	-	-
No response	-	15(6.6)	41(17.9)	82(35.8)	119(52.0)	15(6.6)	67(29.3)
Total	229(100)	229(100)	229(100)	229(100)	229(100)	229(100)	229(100)

Key: Itc: Itching; Dis: Discharge; S/U: Sores/Ulcers; GnS: Groin swelling; PdS: Pain during sexual intercourse; PdU: Pain during urination; LaP; Lower abdominal pain

4.4.6. Knowledge about Preventive Measures of STIs

Poor knowledge of preventive measures of STIs was reported by the respondents (Fig. 4.4.4). However, majority of the respondents reported to know about the use of condoms and antibiotics as preventive measures of STIs.

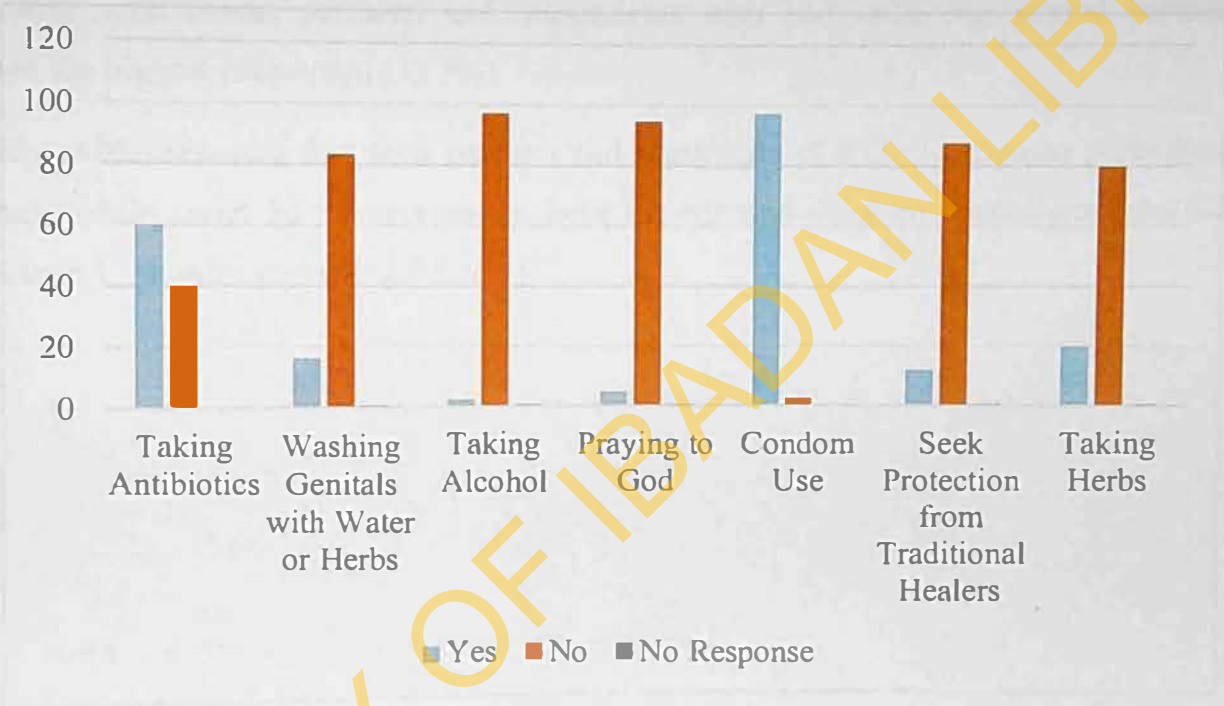

Figure 4.4.4. Distribution Showing Respondents' Knowledge about Preventive Measures of STIs

4.5. Sexual Behaviours of the Respondents

About 14% of the respondents reported not have initiated sexual intercourse in the past 12 months preceding the study. Among the respondents, those who have initiated sexual intercourse early between the age groups (8 – 15; 16 – 23) accounted for about 39.7%; 42.4% respectively.

Higher proportion (66.8%) of the respondents knew of condoms and have used them in the past 12 months preceding the study, 79.0% reported to have initiated sexual intercourse with casual partners, and respondents who had only one sexual partner reported the highest proportion (32.3%).

Majority (48%) reported that their partners had symptoms of STIs 12 months preceding the study while about 30.1% reported to have experienced condom burst during sexual intercourse 12 months preceding the study.

Table 4.5. Percentage Distribution of Respondents' Sexual Behaviours

Variable	Frequency (N=229)	Percentage
Age at Sexual Debut		
No Sexually Active	32	14.0
8 – 15	91	39.7
16 – 23	97	42.4
24 and Above	9	3.9
Mean ± SD		**1.36 ± 0.77**
Condom		
Yes	153	66.8
No	76	33.2
Types of Sexual Partners		
Regular Partners	19	8.3
Casual Partners	181	79.0
Number of Sexual Partners		
No Sexual Partner	33	14.4
1 Sexual Partners	74	32.3
2 Sexual Partners	63	27.5
3 Sexual Partners	59	25.8
Respondents' Partners with Symptomatic STIs		
Yes	110	48.0
No	91	39.7
Respondents Who Had Condom Burst		
Yes	69	30.1
No	133	58.1

4.5.1. Association between Sexual Behaviours And Presence Of Symptomatic Self-Reported STI

There was a statistically significant association (Table 4.5.2.) between Sexual behaviours and symptomatic self – reported STI in the past 12 months preceding the study, except the types of sexual partners ($p>0.05$).

Age at Sexual Debut

Respondents who initiated sexual debut between the ages 16 and 23 reported the highest proportion of those who have had symptomatic self – reported STI in the past 12 months preceding the study, while others including those who had not initiated sexual intercourse reported lower proportion. However, there is a statistically significant association between sexual debut and symptomatic self – reported STI ($p<0.05$).

Condom Use

Respondents who used condoms (35.8%), reported to have had symptomatic self – reported STI in the past 12 months, while those who did not use condoms reported lower proportion. However, there is a statistically significant association between condom use and symptomatic self – reported STI ($p<0.05$).

Number of Sexual Partners

Those who did not have sexual intercourse in the past 12 months preceding this study, reported not to have had symptomatic self – reported STI, and this is unlike those who had one or multiple sexual partners. However, there is a statistically significant association between number of sexual partners and symptomatic self – reported STI ($p<0.05$).

Respondents Partners with Symptomatic STIs

About 38.3% of the respondents whose partners reported to have had symptoms of STI, had symptomatic self – reported STI in the past 12 months, and this is unlike those whose partner reported (13.9%) otherwise. However, there is a statistically significant association between respondents partners with symptomatic STIs and symptomatic self – reported STI ($p<0.05$).

4.5.1. Association between Sexual Behaviours And Presence Of Symptomatic Self-Reported STI

There was a statistically significant association (Table 4.5.2.) between Sexual behaviours and symptomatic self – reported STI in the past 12 months preceding the study, except the types of sexual partners ($p>0.05$).

Age at Sexual Debut

Respondents who initiated sexual debut between the ages 16 and 23 reported the highest proportion of those who have had symptomatic self – reported STI in the past 12 months preceding the study, while others including those who had not initiated sexual intercourse reported lower proportion. However, there is a statistically significant association between sexual debut and symptomatic self – reported STI ($p<0.05$).

Condom Use

Respondents who used condoms (35.8%), reported to have had symptomatic self – reported STI in the past 12 months, while those who did not use condoms reported lower proportion. However, there is a statistically significant association between condom use and symptomatic self – reported STI ($p<0.05$).

Number of Sexual Partners

Those who did not have sexual intercourse in the past 12 months preceding this study, reported not to have had symptomatic self – reported STI, and this is unlike those who had one or multiple sexual partners. However, there is a statistically significant association between number of sexual partners and symptomatic self – reported STI ($p<0.05$).

Respondents Partners with Symptomatic STIs

About 38.3% of the respondents whose partners reported to have had symptoms of STI, had symptomatic self – reported STI in the past 12 months, and this is unlike those whose partner reported (13.9%) otherwise. However, there is a statistically significant association between respondents partners with symptomatic STIs and symptomatic self – reported STI ($p<0.05$).

Table 4.5.2. Association between Respondents' Sexual Behaviours and Presence of Symptomatic Self – Reported STIs

Variables	Frequency (%)				
	Yes	No	Total	X^2	P – Value
Age at Sexual Debut					
Not Sexually Active	3 (1.3)	29 (12.7)	32	20.16	<0.001*
8 – 15	47 (20.5)	44 (19.2)	91		
16 – 23	51 (22.3)	46 (20.1)	97		
24 and Above	4 (1.7)	5 (2.2)	9		
Condom Use					
Yes	82 (35.8)	71 (31.0)	153	11.13	0.001*
No	23 (10.0)	53 (23.1)	76		
Types of Sexual Partners					
Regular Partner	10 (5.0)	9 (4.5)	19	<0.001	0.990
Casual Partner	95 (47.5)	86 (43.0)	181		
Number of Sexual Partners					
No Sexual Partner	-	33 (14.4)	33		
1 Sexual Partner	38 (16.6)	36 (15.7)	74		
2 Sexual Partner	33 (14.4)	30 (13.1)	63	33.22	<0.001*
3 Sexual Partner	34 (14.8)	25 (10.9)	59		
Respondents' Partners with Symptomatic STIs				30.72	<0.001*
Yes	77 (38.3)	33 (16.4)	110		
No	28 (13.9)	63 (31.4)	91		
Respondents Who Had Condom Bursts				4.49	0.034*
Yes	43 (21.3)	26 (12.9)	69		
No	62 (30.7)	71 (35.1)	133		

*Statistically significant

4.5.2. Relationship between Sexual Behaviour And Presence Of Symptomatic Self-Reported Sexually Transmitted Infection

After adjusting for confounders (Table 4.5.3.), sexual behaviours remained statistically significant, except condom use and types of sexual partners (p>0.05).

Sexual Debut

Those who had initiated sexual intercourse early between the ages 8 – 15 are 10 times more likely to have had symptomatic self – reported STI in the past 12 months preceding the study compared with those who are not sexually active (OR: 10.33; 95% CI: 2.94 - 36.32), those who had initiated sexual intercourse between the ages 16 – 23 are 11 times more likely to have had symptomatic STI compared with those who are not sexually active (OR: 10.72; 95% CI: 3.06 - 37.55), the associations reported are statistically significant except those who initiated sexual activities between the ages 24 and above (OR: 7.73; 95% CI: 0.42 - 45.51).

Number of Sexual Partners

Those who have one sexual partner are 17 times more likely to have had symptomatic self – reported STI compared to those who had no sexual partner in the past 12 months preceding the study (OR: 17.27; 95% CI: 2.21 - 134.98), those who have two sexual partner are 20 times (OR: 19.50; 95% CI: 2.49 -152.98) more likely to have had symptomatic self – reported STI, while those that have more than two sexual partner are 24 times more likely to have had symptomatic self – reported STI compared to those that had no sexual partner. The associations were all statistically significant.

Respondents Partners with Symptomatic STIs

Respondents whose partners did not have symptomatic STIs 12 months preceding the study are 1.2 times less likely to have had symptomatic self – reported STI compared with those whose partners had symptomatic STI (OR: 0.81; 95% CI: 0.09 – 0.35). The association is statistically significant.

4.5.2. Relationship between Sexual Behaviour And Presence Of Symptomatic Self-Reported Sexually Transmitted Infection

After adjusting for confounders (Table 4.5.3.), sexual behaviours remained statistically significant, except condom use and types of sexual partners (p>0.05).

Sexual Debut

Those who had initiated sexual intercourse early between the ages 8 – 15 are 10 times more likely to have had symptomatic self – reported STI in the past 12 months preceding the study compared with those who are not sexually active (OR: 10.33; 95% CI: 2.94 - 36.32), those who had initiated sexual intercourse between the ages 16 – 23 are 11 times more likely to have had symptomatic STI compared with those who are not sexually active (OR: 10.72; 95% CI: 3.06 - 37.55), the associations reported are statistically significant except those who initiated sexual activities between the ages 24 and above (OR: 7.73; 95% CI: 0.42 - 45.51).

Number of Sexual Partners

Those who have one sexual partner are 17 times more likely to have had symptomatic self – reported STI compared to those who had no sexual partner in the past 12 months preceding the study (OR: 17.27; 95% CI: 2.21 - 134.98), those who have two sexual partner are 20 times (OR: 19.50; 95% CI: 2.49 -152.98) more likely to have had symptomatic self – reported STI, while those that have more than two sexual partner are 24 times more likely to have had symptomatic self – reported STI compared to those that had no sexual partner. The associations were all statistically significant.

Respondents Partners with Symptomatic STIs

Respondents whose partners did not have symptomatic STIs 12 months preceding the study are 1.2 times less likely to have had symptomatic self – reported STI compared with those whose partners had symptomatic STI (OR: 0.81; 95% CI: 0.09 – 0.35). The association is statistically significant.

Respondents who had Condom Burst

Respondents who experienced condom burst in the past 12 months preceding the study are 2 times more likely to have had symptomatic self – reported STI compared with those who did not (OR: 2.04; 95% CI: 1.00 – 4.16). The association is statistically significant.

Table 4.5.2. Relationship between Respondents' Sexual Behaviours and Self – Reported STIs

Variables	OR	P - Value	95% CI	
			Lower	Upper
Sexual Debut				
Not Sexually Active (ref)	1			
8 – 15	10.33	<0.001*	2.94	36.32
16 – 23	10.72	<0.001*	3.06	37.55
24 and Above	7.73	0.024*	1.13	45.51
Condom Use				
Yes	0.81	0.52	0.42	1.56
No (ref)	1			
Types of Sexual Partners				
Regular Partner	0.99	0.990	0.39	2.56
Casual Partner (ref)	1			
Number of Sexual Partners				
No Sexual Partner (ref)	1			
1 Sexual Partner	17.27	0.007*	2.21	134.98
2 Sexual Partner	19.50	0.005*	2.49	152.98
3 Sexual Partner	23.75	0.003*	2.92	193.00
Respondents' Partners with Symptomatic STIs				
Yes (ref)	1			
No	0.18	<0.001*	0.09	0.35
Respondents Who Had Condom Bursts				
Yes	2.04			
No (ref)	1	0.050*	1.00	4.16

*Statistically significant at 5%. CI: Confidence interval, OR: Odds ratio

4.6. Consequences of Sexually Transmitted Infections

Higher proportion of the respondents reported not to have had abortion 12 months preceding the study, while those who had one or more abortion reported the least proportion.

Majority of the respondents reported not have had abdominal pain/pelvic pain, abdominal pain in men and testicular pain while the remainders reported otherwise.

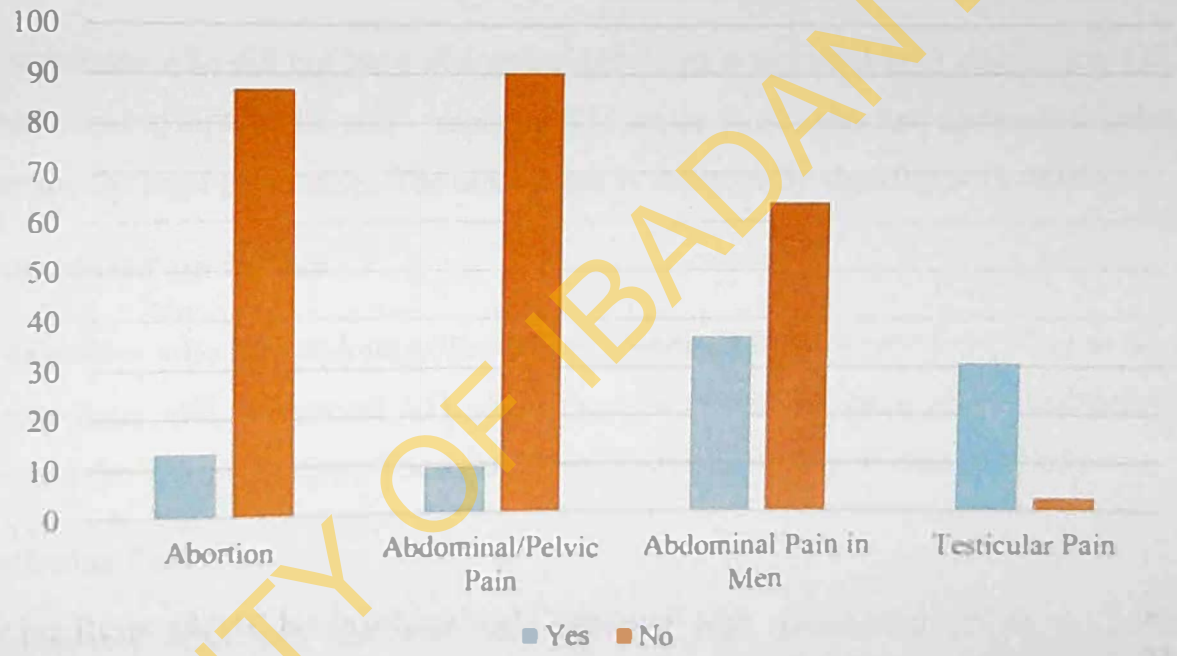

Figure 4.6.1. Distribution of the Consequences of Sexually Transmitted Infections

4.6. Consequences of Sexually Transmitted Infections

Higher proportion of the respondents reported not to have had abortion 12 months preceding the study, while those who had one or more abortion reported the least proportion.

Majority of the respondents reported not have had abdominal pain/pelvic pain, abdominal pain in men and testicular pain while the remainders reported otherwise.

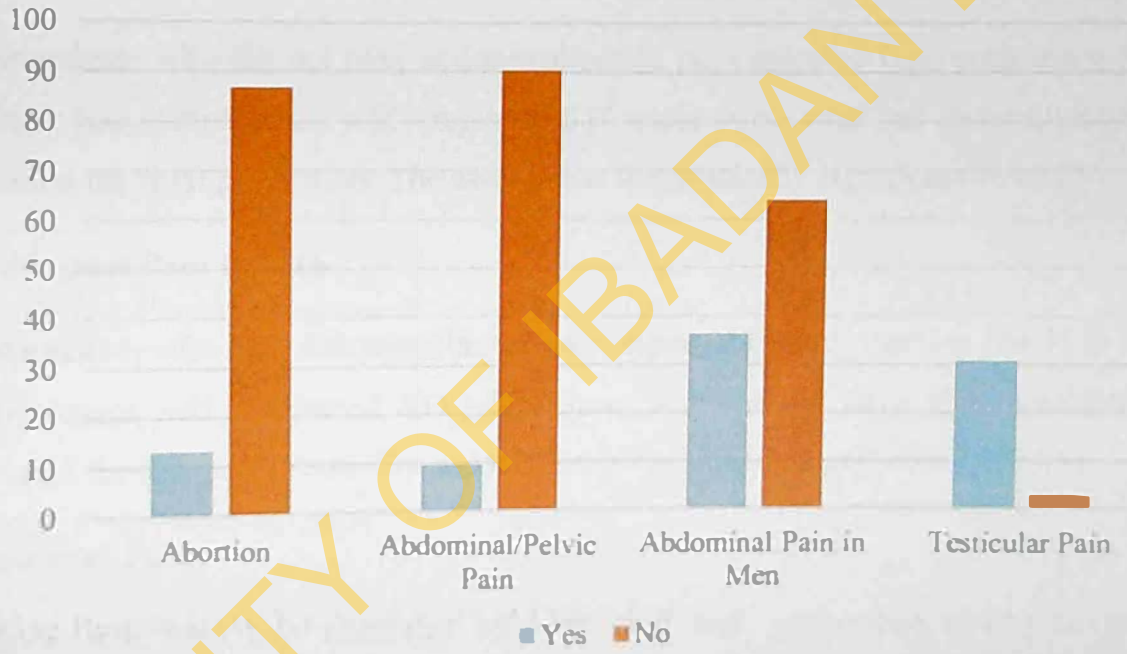

Figure 4.6.1. Distribution of the Consequences of Sexually Transmitted Infections

4.6.1. Association Between Consequences of Sexually Transmitted Infections and Symptomatic Self – Reported STI

There was a statistically significant association (Table 4.6.1.) between all the consequences of STIs and self – reported STIs except for abortion ($p>0.05$).

Abortion

Among the respondents, those who had no abortion in the past 12 months preceding this study reported the highest proportion (36.2), not to have had symptomatic self – reported STI while those who had one or more abortion reported lower proportion (7.9, 1.7) to have had symptomatic self – reported STI. The association is statistically significant ($p<0.05$).

Abdominal/Pelvic Pain

Respondents who did not have abdominal/pelvic pain reported high proportion (37.1) not to have had symptomatic self – reported STI while those who had abdominal/pelvic pain reported the least proportion. The association is statistically significant ($p<0.05$).

Abdominal Pain in Men

Respondents who had abdominal/pelvic pain reported high proportion (24.1) to have had symptomatic self – reported STI while those who did not have abdominal/pelvic pain reported the low proportion. The association is statistically significant ($p<0.05$).

Testicular Pain

Respondents who had testicular pain reported high proportion (24.5) to have had symptomatic self – reported STI while those who did not have testicular pain reported the low proportion. The association is statistically significant ($p<0.05$).

Table 4.6.1. Association between Consequences of Sexually Transmitted Infections and Symptomatic Self – Reported STI

Variables	Frequency (%)				
	Yes	No	Total	X^2	P – Value
Abortion					
No Abortion	83 (36.2)	116 (50.7)	199	10.64	0.005*
1 Abortion	18 (7.9)	6 (2.6)	24		
2 and More Abortion	4 (1.7)	2 (0.9)	6		
Abdominal/Pelvic Pain					
Yes	20 (8.7)	2 (0.9)	22	19.90	<0.001*
No	85 (37.1)	122 (53.3)	207		
Abdominal Pain in Men					
Yes	55 (24.0)	28 (12.2)	83	21.85	<0.001*
No	50 (21.8)	96 (41.9)	146		
Testicular Pain					
Yes	56 (24.5)	14 (6.1)	70	47.35	<0.001*
No	49 (21.4)	110 (48.0)	159		

*Statistically significant

4.6.2. Relationship Between Consequences of Sexually Transmitted Infections and Symptomatic Self – Reported STI

After adjusting for confounders (Table. 4.6.2.), consequences of STIs remained statistically significant, except abortion and abdominal pain in men ($p<0.05$).

Abdominal/Pelvic Pain

Those who had abdominal pain/pelvic pain in the past 12 months preceding this study are 38 times more likely to have had symptomatic self – reported STI compared with those who did not have abdominal pain/pelvic pain (OR: 37.77; 95% CI: 8.11 – 175.88). The association is statistically significant.

Testicular Pain

Those who had testicular pain in the past 12 months preceding this study are 10 times more likely to have had symptomatic self – reported STI compared with those who did not have testicular pain (OR: 9.90; 95% CI: 4.36 – 22.51). The association is statistically significant.

Table. 4.6.2. Relationship between Consequences of STIs and Presence of Symptomatic Self – Reported STI

Variables	OR	P – Value	95% CI	
			Lower	Upper
Abortion				
No Abortion (ref)	1			
1 Abortion	0.72	0.764	0.09	5.95
2 and More Abortion	2.17	0.518	0.21	22.83
Abdominal/Pelvic Pain				
Yes (ref)	1			
No	37.77	<0.001*	8.11	175.88
Abdominal Pain in Men				
Yes	0.49	0.072	0.22	1.07
No (ref)	1			
Testicular Pain				
Yes	9.90	<0.001*	4.36	22.51
No (ref)	1			

*Statistically significant at 5%. CI: Confidence interval, OR: Odds ratio

4.7. Suggestions on the Preventions of Incidence of Sexually Transmitted Infections

Majority of the respondents suggested that awareness of the consequences of STIs, establishment of private market clinics and awareness of STIs treatment are proactive means towards reduction of the incidence and prevalence of STIs while correct and consistence use of condoms and being faithful to one faithful uninfected partner.

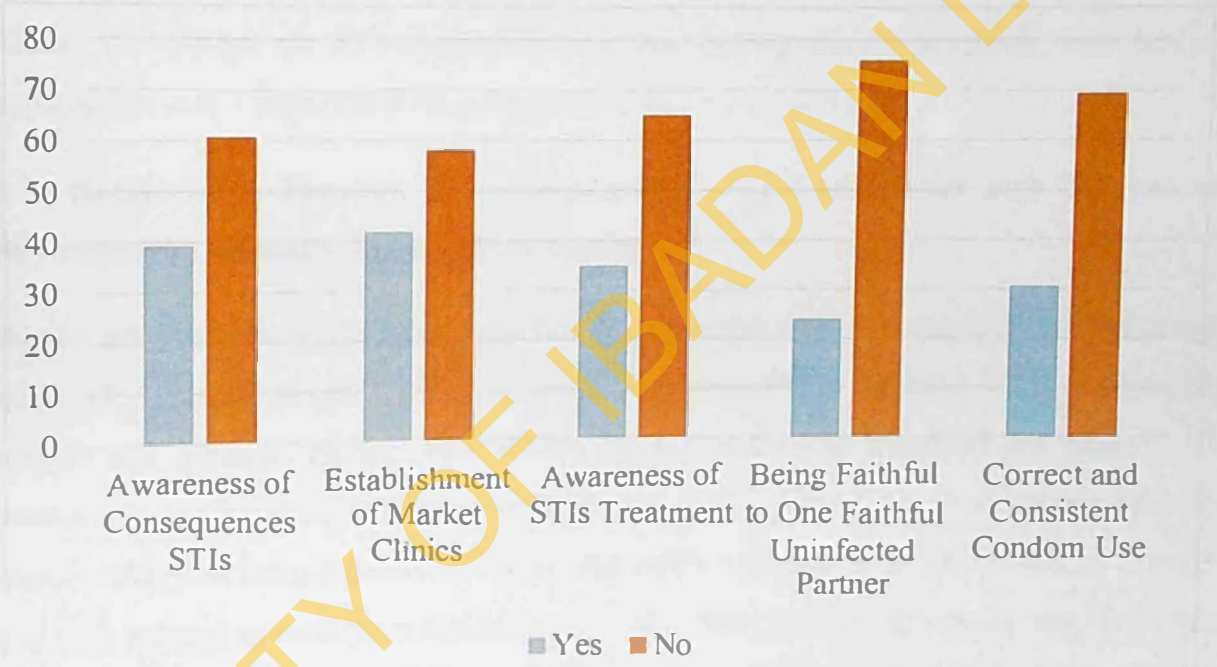

Figure. 4.7.1. Respondents' Suggestions on the Preventions of Incidence of Sexually Transmitted Infections

CHAPTER FIVE

DISCUSSION, CONCLUSION, AND RECOMMENDATION

5.1. DISCUSSION

This study was a cross sectional study that focused on the prevalence of symptomatic self – reported sexually transmitted infections among market dwellers in Ibadan. Thus, this study examined the relationship between presence of symptomatic self – reported STIs and respondents socio-demographics and sexual behaviours.

5.1.1. Knowledge on Symptoms of Sexually Transmitted Infections

Overall, knowledge on STI symptoms was low among the respondents who have had symptomatic self – reported STIs compared to those who did not.

5.1.2. Relationship between Socio-Demographic Characteristics and Symptomatic Self – reported Sexually Transmitted Infections

Females are more likely to have reported symptomatic self – reported STIs compared to males. Also young people, 15 – 24 years are more likely to have STIs compared to younger age groups. Hence, this results agrees with that obtained by Mmari, 2010; Ogunjuyigbe 2003; Patrick, 2007; NARHS II plus, 2012). Those who had Arabic education are more likely to have reported symptomatic self – reported STI. This result is similar to those who engage in load carrying/lifting (porters) compared to the apprentice. The results on education, is similar to that obtained by NPC (2014), who reported low level of education among young people. However, those who lived in the market are more likely to have STI compared to those who did not. Although, the association was not statistically significant, and this could be attributed to chance, or low sample size. The worrisome aspect is that this group of people are usually cut off from STIs including HIV/AIDS campaign programmes. First, this is because their activities hardly come to light as they basically carry or lift loads and goods in the market. Secondly, they do not operate in an organised form so as to make them accessible for intervention efforts. Thirdly, the environment within which they operate as place of work and sleeping place will generally not expose them to general public campaign programmes through the electronic and print

media except for the use of dry cell battery radio which is readily available in most markets.

The vulnerability of the market dwellers conditioned by poor economic background latently predisposes them to STIs and its spread. According to the study conducted by Sabatier (1987), "when AIDS virus is introduced into a society, it tends towards the path of least resistance. This is often the path trod by the poorest, most stigmatised (Sabatier, 1987; Muir, 1991) the group market dwellers belongs.

Higher proportion of knowledge was said to exist among the respondents, and this result is in contrast with that obtained by the National Intelligence Council, (2005) where many people especially youths were said to lack adequate information about STIs. It is therefore evident that people have adequate knowledge about STIs, yet the prevalence of symptomatic self – reported STIs is still relatively high.

5.1.3. Prevalence of Symptomatic Self – Reported Sexually Transmitted Infections

The prevalence of symptomatic self – reported STIs in this study was reported to be high among the respondents. This result slightly differs from the results obtained by Sekoni et al, (2013) and Nyarko, et al., (2014) and could be attributed to the statistically significant associations between socio-demographic characteristics of the respondents and those who reported to have had symptomatic STI.

5.1.4. Consequences of Sexually Transmitted Infections

Choudhry et al. (2014) revealed that STIs constitutes one of the major public health problems affecting hundreds of millions the people in both developed and developing countries causing far reaching socio-economic consequences. The results for this study agrees with the report based on the highest level of education attained among the respondents and the main occupation majority engage themselves in.

The consequences of STI reported in this study include abortion, lower abdominal pain, pelvic pain and testicular pain. The association between these consequences and symptomatic STI was reported to be statistically significant even after adjusting for confounders. This result is similar to that obtained by Teens and Trends et al, (2014). Adequate knowledge is of utmost importance in the fight against the rampaging effects of

STIs, particularly HIV/AIDS. The result in these findings revealed a relatively high level of awareness of STIs among the respondents. The same can also be said of the source of information relating to STIs. These results are similar to that obtained by NARHS Plus II (2012), who reported a higher proportion of awareness of STIs.

Information relating to STIs can be accessed through many sources as reported in this study. These include television/radio, health care workers, magazines, newspapers, post bills, religious gatherings and market sensitization shows varying sources of knowledge about STIs including HIV/AIDS as provided by the respondents. The results indicate that the highest source of knowledge about STIs among respondents was from television/radio. This result is in agreement with that obtained by Makwe (2014) in a similar study conducted in Abuja, Nigeria among undergraduate students of the University of Abuja, and also agrees with that obtained by Adegun (1996) in a similar study among students in Ado Ekiti, Nigeria where news media was the highest source of information about STIs. However, lower proportion of the respondents said they have never heard of STIs in the environment, this was probably because they were not well informed. Notwithstanding, the awareness and knowledge of the respondents on STIs were relatively high, but there is need to increase the respondents' knowledge on other types of STIs were poor knowledge was reported for Chancroid, Trichomoniasis, and Genital warts. This is quite different from the conventional STIs that were reported to have good knowledge. There is agreement between this result and that obtained by Makwe, (2014).

5.1.5. Symptoms of Sexually Transmitted Infections

This study reported that the most known symptoms of STIs was itching followed by discharge from the genitals, pain during urination, sores/ulcers, lower abdominal pain, groin swelling and pain during sexual intercourse as shown in where majority of the respondents had poor knowledge of symptoms of STIs while the remainder were aware that STIs could be asymptomatic. This results however is in agreement with that obtained by Nyarko et al. (2014) in Ghana, Sekoni et al., (2013) in Nigeria in a similar study.

5.1.6. Sexually Transmitted Infections Preventive Measures

Prevention remains the key strategy in the fight against STIs regardless of sexual behaviours. Correct and consistent use of condoms, faithfulness to one faithful and uninfected partner, abstinence e.t.c. are some preventive measures reported in this study. The results revealed that there was a relatively high level of prevention of STIs among those who used condoms, accounting for about 57 percent, the results equally reported that 14 percent of the respondents have not engaged in sexual intercourse 12 months preceding the study and this results is amazing in this 21 century were almost everyone has different access to all forms of information which sometimes are not edifying to the mind. However, this result is in agreement with that obtained by NPC (2014); Nyarko et al. (2014) in Ghana,; Sekoni et al in Nigeria in a similar study. The high proportion of condom use reported in this study is probably because at the time of this study condoms were given out to people at no cost for the prevention of HIV/AIDS which is highly stigmatized.

5.1.7. Sexual Behaviours

Regarding sexual behaviours, although majority of the respondents reported to have used condoms in the past 12 months preceding the study. This could be associated with their exposure to STIs if they did not practice any STI preventive measure. Low proportion reported to have experienced condom burst in the past 12 months preceding the study. This could also be said to be statistically significantly associated with the self – reported STI among the respondents. In addition, higher proportion of the respondents who reported to have initiated sexual activities early, were said to be more likely to have had STI in the past 12 months preceding the study compared to those who had not initiated sexual intercourse. This finding is in agreement with that obtained by Fagbamigbe et al. (2011); Ogunjuyigbe (2013); NPC (2014). Surprisingly, those who had one sexual partner reported highest proportion of having symptomatic self – reported STIs and were more likely to have reported STI compared to others and this could be attributed to other risky sexual behaviours.

5.2. Key Informants' Discussion and Perception about Market Dwellers

This section presents the discussion and perceptions of the key players (referred to generically in the text to respect their anonymity) involved in the market daily activities in Ibadan. Information gotten from the interview was to gain a better understanding of the research problem, why young people live in the market and also to assess the respondents' sexual behaviours.

5.2.1. General information

From the research problems, findings obtained by Kadiri, (2014), and the obvious market condition in Ibadan it appears that some group of people live and also work in the market. In line with this, I asked the following questions as regards the existence of market dwellers prior to the study: *Do people live in the market? Kindly state the group of people that live in the market?*

One of the key informant (Key informant A) said:

"Yes, infact from the onset of the existence of the market, people have been living in the market. Majority of those who live in the market are young people. The informant further explained that, besides the young people that live in the market, there are adults and few old people that live in the market".

Key informant B said:

"The people who live in the market include on-the-street-children who have deserted their Parents & siblings, youths not-in-school, children having financial & family problems, destructive youths on the run and some adults, few old people inclusive, who are financially handicapped"

5.2.2. Market dwellers

According to literature review, it has been observed across various big markets in Nigeria that some groups of people live in the market (Kadiri, 2014). In line with this, I asked the following questions: *How long have the market dwellers been living in the market? Kindly state where they sleep at night?*

One of the key informant (Key informant C) said:

"The market dwellers have been living in the market for decades, even before he started transacting business in the market and even till this moment".

Key informant (B) said:

"Majority of the market dwellers in the market where he transacts business, sleep in front of traders stores after they most have left the market. While others apprentice inclusive, sleep in specific stores/warehouse and their respective carved slums".

Key informant (B) said:

"Majority of the market dwellers in the market where he transacts business, sleep their respective carved slums, while the remainders sleep in warehouses were large quantity of goods are stored for later distribution. The informant further explained that, some of those who sleep in the market, do this often because some of them have spouses working at the other end of the town".

5.2.3. Vocation

From literature review, majority of the youths not-in-school and children on-the street constitutes nuisance in the environment they choose to live and most of them are prone to engage in odd jobs (Ogunjuyigbe, 2003). In line with this, the following question was asked: *What activity/job do the market dwellers engage in? Kindly state their major occupation/source of income?*

One of the key informant (Key informant A) said:

"Some of the market dwellers work, some apprentice while others mainly constitute nuisance in the market. The informant further explained that the market dwellers are those who carry or lift loads in the market, food vendors, petty traders and apprentice. However, their main occupation in the market is load carrying/lifting".

5.2.4. Sexual behaviours

According the findings obtained by ICF Macro NPC, (2014), where majority of the young people were engaged in risky sexual behaviours and also initiated sexual activities at an early age which predisposes them to diseases on a long run. In line with this, I asked the following questions: *Are the market dwellers sexually active? Kindly state their perceived age at sexual debut? What is their preferred choice of preventing sexualyl transmitted infections? Do they practice other STI prevention measures?*

One of the key informant (Key informant C) said:

"Very true. The market dwellers are sexually active because they are often misguided with no parental guidance nor caution. They engage in sexual activities as soon as they are conscious of the pleasures derived from their genitals. The informant further explained that he thinks their age at sexual debut is between (10 – 15) years".

Key informant B said:

"Condom is their preferred choice of preventing sexually transmitted infections. However, they combine the use of condoms with herbs for complete security of themselves from any disease".

5.2.5. Intervention made to take the market dwellers off the streets

According the findings reported by Ogunjiyigbe, (2003), the socio-economic profiles that endears the youth not-in-school to the streets have not been addressed. In line with this, I asked the following question: *What are the known interventions conducted prior to this study to take the market dwellers off the street?*

One of the key informant (Key informant A) said:

"Police Officers have made several failed attempts to keep the market dwellers off the street by arresting them and condemning them to Police cells. However, the attempts were futile because no one usually come for their bail and the Police officers have no choice than to release them afterwards".

5.3. Limitation of the Study

1. Reliance on self-reported data on sensitive issues may have affected the findings by social desirability bias, particularly on sexual practices and number of sexual partners. Although, a fair number of the participants responded freely to the questions asked.
2. There was recall bias on some issues and cultural biases especially in the disclosure of sensitive sexuality questions.
3. The total sample size was not completely obtained based on the peculiarity of the respondents.
4. Data collections were made as early as 6:00 – 6:30 am, otherwise the respondents cannot be sampled once they have started work by 7:30 am.

Although, this study has not exhausted all areas of concerns to the market dwellers on their health issues and living conditions. However, it has created more and new research opportunities to be explored by researchers who wish to carry out studies among this group, who are regarded as being vulnerable.

5.4. Conclusion

The findings from this study revealed that age, sex, vocation and number of years lived in the market are directly associated with the rampaging increase of the presence of self – reported STI. As a result, this would have derogating effects on those who live in the make and their children because off course, they are reproducing in their respective slums, and identity crisis becomes a serious issue. They remain homeless, unguided and carefree of whatever becomes of them and subsequently progress to constituting nuisance in the environment.

This study further revealed that a lower proportion of sexually transmitted infections preventive measures uptake were very high among the respondents, thereby being vulnerable to STIs and increasing its incidence in this population. Hence, sexual behaviour is one of the factors contributing to the increasing spread of STIs/AIDS among young people. This findings is in agreement with that obtained by Okekearu 2014; Juarez LeGrand, 2005. In the absence of any meaningful statistically significant preventive measure other than condoms, the respondents maybe said to spread the infection at faster rates that no one can imagine. Yet, this is a group that no one takes cognisance of let alone taking intervention strategies. The Market dwellers may therefore, be one of the potential STIs including HIV/AIDS major distribution at a low tone, thereby contributing to the increasing prevalence of STIs and HIV/AIDS in the country. Given that most of the behaviours of the Market dwellers are to help them cope and survive in their adverse environment. STIs intervention programmes must be innovative and follow an integrated approach.

From the reported prevalence of symptomatic self – reported STI in this study, sexually transmitted infection is still on the increase among the youths and this finding becomes highly worrisome because the respondents tend to have good knowledge of the risk factors, types and symptoms of STI. This calls for deep rooted strategic interventions to reduce the increasing prevalence of STI among the youths.

5.5. Recommendations

Based on the results obtained from the study and prior discussions from the interviews conducted, the researcher wishes to make the following recommendations that will help address the health and living conditions of the market dwellers.

1. There is the need to take intervention programmes beyond prevention and treatment issues to include focus on the entire life style; that is the urgent need for people to come to terms with how sexually transmitted infection affects other aspects of their lives, including their relationships with family, friends, and care providers. Hence, putting into consideration that a higher proportion of the respondents suggested the need for the establishment of private market clinics as one of the strategies to reduce the incidence of STIs.

2. Majority of those affected and at risk are among the Market dwellers who have a unique frame of life, compared to other respondents who do not live in the market. Intervention programmes must therefore have components of peer support and peer education. Although, Oyo State Ibadan is said to have a Youth Friendly Health Services Centre, but it is not accessible and functional to the respondents who live in the market due to their uncontrolled circumstances. Thus, the basis of peer-to-peer education lies in opportunities it creates for sharing rationales. and possible solutions from the personal perspectives of the educators with those who are in similar problems. "The willingness of individuals in a group to speak candidly from a personal perspective about the issues that affect the whole fosters a trust that is not afforded to people in authority or those outside the group" Battjes and Pickens. (1998). Hence the need for a functional and representative Youth Friendly Health Services Centre.

3. Beyond the need for specific programmes and services, there is a more fundamental problem that needs a frontal attack on the adverse socio-economic characteristics that is statistically significantly associated with the reported symptomatic self – reported STIs, is called for on a long run. For it is known in the past that STI occurs to a significant large extent, on a context of many other social illnesses and diseases including poverty, unemployment, inequality between sexes.

drug and alcohol use. Anderson et al, 1996 observed that increased knowledge and more importantly the behavioural skills were also to allow the individuals to refuse certain behaviours and negotiate lower – risk sexual activity.

4. Finally, a long – term solution therefore will be to address the prominent socio-economic conditions that predisposes them to into the environment they find themselves that can foster a reduction in the incidence of symptomatic self – reported STIs, taking cognisance of the risk factors for STIs.

REFERENCES

Adebiyi AO, Asuzu MC. (2009). Condom use amongst out-of-school youth in a Local Government Area in Nigeria. *African Health Science* 9:92-7.

Adegun, Solomon, Adegoke, Ade-Ojo, and Fape, (2013). Knowledge of sexually transmitted Infections among patients attending outpatient clinics at University Teaching Hospital, Ado-Ekiti, Nigeria. *Journal of Public Health and Epidemiology* 5(3), pp. 110-114.

Adenike IO, Wasiu OA. And Olugbenga LA. (2009). Sexual Risk Behaviour Among In-School Adolescents in Public Secondary Schools in a Southwestern City in Nigeria. *Internal Journal of Health Researches 2(3):243 – 25.*

Ajuwon AJ, Olley BO, Akin-Jimoh I, Akintola O. Experience of Sexual Coercion among Adolescents in Ibadan, Nigeria. *African Journal Reproductive Health.* 2001;5(3):120-131.

Ajuwon J.A, Owoaje E., Falaye F., Osinowo K. Aimakhu C., Adewole I.F. (2007). *Training Manual on Sexual Reproductive Health and Rights and HIV Prevention for Medical Students in Nigeria.* Nigeria, pp. 80-125.

Aliyu AA, Dahiru T, Ladan AM, Shue AU. Abubakar AA, Oyefabi AM., and Yahaya SS. (2013). Knowledge, Sources of information, and Risk Factors for Sexually Transmitted Infections among Secondary School Youth in Zaria, Northern Nigeria. *Journal of Medicine in the Tropics*, 15 (2), 102 – 107.

Anderson, J.E., Cheney, R., Clatts, M., Faruque, S., Kipke, M., Long, A., Mills, S., Toomey, K. and Wiebel, W.: HIV risk behaviour, street outreach, and condom use in eight high-risk populations. *AIDS Education and Prevention,* 8(3): 191-203 (1996).

Audinarayana N. 2010. Sexual behaviours and its determinants among never married male factory workers in a South Indian Knit City. *Journal of Population and Social Studies 18(2), 155 – 174.*

Bairy, I., Balachandran C., Shivananda P.G. (2001). HIV seropositivity in STD clinic attendants. *Indian Journal of Sexual Transmission Diseases*; 22: 6-9.

Barnnet, T. and Blake, P. (1992). Its Present and Future Impact. Belhaven Press, London *AIDS in Africa*, p.4.

Battjes, T. and Pickens, R.W. (1988). Needle Sharing Among Intravenous Drug Abusers *National and International Perspectives,* Rockville, MD: US Department of Health and Human Services. NUDA Research Monograph 80.

Bearingger LH, Seieving RE, Ferguson J, and Sharma V. (2007). Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. *Lancet*. 369, 1220-1231.

Berkley, S. (1992). What is the future? *Annals of Internal Medicine,* 116, 5-9.

Blankhart D, Muller O, Gresenguet G, Weis P. Sexually transmitted infections in young pregnant women in Bangui, Central African Republic. *International Journal of STD & AIDS*, 10 (9): 609-14. 1999.

Brabin L, Kemp J, Obunge OK, Ikimalo J. Dollomore N, Odu NN,Hart CA, and Briggs N. (1995). Reproductive tract infections and abortion among adolescent girls in rural Nigeria, *Lancet,* 1995, 345(8945):300–304.

Briggs LA. (1998). Parents viewpoint on reproductive health and contraceptive practice amongsexually active adolescents. *Journal. Advance Nursing*, 27:261-266.

Bunnell R.E., Ekwaru J.P., Solberg P., Wamai N., Bikaako-Kajura W., Were W., Coutinho A., Liechty C., Madraa E., Rutherford G., Mermin J. (2006). Changes in sexual behaviour and risk of HIV transmission after antiretroviral therapy and prevention interventions in rural Uganda. *AIDS Journals*; 20(1)85:92.

Carlos T, Da Ros, and Caio da Silva Schmitt. (2008). Global epidemiology of sexually transmitted diseases. *Asian Journal of Andrology, ShangaiInstitute of Materia Medica, Chinese Academy of Sciences. 36-99.*

Centre for Disease Control and Prevention. 2006. Sexually Transmitted Diseases Treatment
Guidelines. 55:1.

Chakrapani, V., Newman, P. A., Shunmugam, M. & Dubrow, R. (2010). Prevalence and contexts of inconsistent condom use among heterosexual men and women living with HIV in India: *Implications for prevention; AIDS Patient care and STDs; 24*(1), 49-58.

Chesson H.W., Blandford J.M., Gift T.L., Tao G., Irwin K.L. (2004). The estimated direct medical cost of sexually transmitted diseases among American youth. *Perspective Sexual Reproductive Health*; 36:11-9.

Chin, J. (1990). Public health surveillance of AIDS and HIV infections. *Bull World Health Organization*; 68: 529-536.

Chinsembu K.C., Siziya S., Muula A.S., Rudatsikira E. (2008). Prevalence and social correlates of sexual intercourse among school-going adolescents in Namibia. *Sahara Journal*; 5:129–3.

Choudhry S., Ramachandran V.G., Das S., Bhattacharya S.N., Mogha N.S. (2010). Pattern of sexually transmitted infections and performance of syndromic management against etiological diagnosis in patients attending the sexually transmitted infection clinic of a tertiary care hospital. *Indian Journal of Sexual Transmission Diseases;* 31: 104-108.

Creswell. (2006). *Understanding Mixed Methods Research.* Retrieved September 12, 2011, from Sagepub:http:www.sagepub.com.

Da Ros C.T.; Schmidt C. S. (2008). Global Epidemiology of Sexually Transmitted Infections. *Asian Journal of Andrology*, 10(1):110-114.

Department of Reproductive Health and Research; World Health Organization. (2007). Global strategy for the prevention and control of sexually transmitted infections: 2006 – 2015; *Breaking the chain of transmission.*

DiClemente R.J., Salazar L.F., Crosby R.A. (2007). A review of STD/HIV preventive interventions for adolescents: Sustaining effects using an ecological approach. *Journal Pediatric Psychology;* 32:888–906.

Dehne K and Riedner G. 2005. Sexually transmitted infections among adolescent-the need for adequate health services, Geneva; WHO, 10 – 14.

Egbochukwu EO, Ekanem IB. (2008). Attitude of Nigerian secondary school adolescent towards sexual practices; implications for counselling practices. *European Journals,* 22:177-83.

Fagbamigbe A. F., Adebowale A. S., Olaniyan. A. F. A. 2011. Comparative Analysis of Condom Use Among Unmarried Youths in Rural Community in Nigeria. *Public Health Research*, 1(1): 8-16.

Federal Ministry of Health. (2012). National HIV & AIDS and Reproductive Health Survey, 2007 (NARHS Plus), Federal Ministry of Health Abuja, Nigeria.

Federal Ministry of Health [Nigeria] (2013). National HIV&AIDS and Reproductive Health Survey, 2012 (NARHS Plus), Federal Ministry of Health Abuja, Nigeria.

Folashade O. (2007). The role of sexually transmitted infections in HIV transmission. *Journal of AIDS*; 92-100. www.apin.harvard.edu/chapter5.pdf.

Gangamma, R. et al. (2008). Comparison of HIV risks among gay, lesbian, bisexual and heterosexual homeless youth. *Journal of Youth and Adolescence*; 37(4):456-464.

Geneva: WHO; 2007. [Retrieved on 2009 Apr 12]. WHO (World Health Organization). Global Strategy for the Prevention and Control of Sexually Transmitted Infections: 2006-2015. Available from:http://www.who.int/reproductive health/publications/stisstrategy/pdf.

Gilson L, Mkanje R, Grosskurth H, Mosha F, Picar J, Gavyole A, Todd J, Mayaud P, Swai R, Fransen L, Mabey D, Mills, A, Hayes R. (1997). Cost-effectiveness of improved treatment services for sexually transmitted diseases in preventing HIV-1 infection in Mwanza Region, Tanzania. *Lancet*, 350: 1805-09.

Green B.C. (1992). The anthropology of sexually transmitted diseases in Liberia. *Social Science and Medicine*; 35(12):1457-1468.

Grosskurth H, Mayaud P, Mosha F. 1996. Asymptomatic gonorrhoea and chlamydia infection in rural Tanzania. *BMJ*. 1996;312:277–280.

IBBS. (2007). HIV/STI Integrated Biological and Behavioural Surveillance Survey. Federal
Ministry of Health. Pg 39 – 110

Ikeako L.C., Ekwueme O.C., Ezegwui H.U., Okeke T.O.C. (2014). Vulnerability and knowledge of sexually transmitted infections among female traders of reproductive age in Enugu, Nigeria. *Annual Medicine Health Science Research*, 4(1): 118–122.

Ikimalo J., Obunge O.K., Babatunde S., Ikokwu-Wonodi C., Briggs N.D., Kemp J., Dollimore N., Brabin L., Agbaje O., Hart C.A. (1999). Sexually transmitted infections among Nigerian adolescent schoolgirls: *Sexually Transmitted Infections*, 75(2):121.

Juarez F., LeGrand T. (2005). Factors influencing boys' age at first intercourse and condom use in Shantytowns of Recife, Brazil, *Studies in Family Planning;* 36(1): 57-70.

Kadiri Moses. (2014). Mile 12 Market: Lagos' Home of Foodstuff. New telegraph online. The Mega City.

KFF--Kaiser Family Foundation. (1998). Sexually transmitted diseases in America: How many cases and at what cost? Menlo Park, CA: Kaiser Family Foundation and American Social Health.

Kipp W, Diesfeld H, Ndyanabangi B. (2004). Reproductive health behaviour among in-school and out-of-school youths in Kabarole District, Uganda. *African Journal of Reproductuve Health*, 8:55-7.

Koehlmoos Tracey Pérez, Uddin M.J., Ashraf Ali, Rashid Mashida. (2009). Homeless in Dhaka: Violence, Sexual Harassment, and Drug-abuse. *Journal of Health Population Nutrition,* 27(4): 452-461.

Lawan UM, Abubarkar S and Aisha A. (2012). Risk Perceptions, Prevention and Treatment
Seeking for Sexually Transmitted Infection and HIV/AIDS among Female Sex Workers in Kano, Nigeria. *African Journal of Reproductive Health,* 16(1):61.

Leedy, P.D. and Omrod, J. (2001). *Practical Research Planning and Design*. New Jersy: Prentice Hall.

Lewis DA, Latif AS, Ndowa F. (2007). WHO global strategy for the prevention and control
of sexually transmitted infections: time for action. *Sexually Transmitted Infection,* 83: 508 – 509.

Mabey D, Ndowa F, Latif A. (2010). What have we learned from sexually transmitted infection research in sub-Saharan Africa? *Sexually Transmitted Infection,* 86:488–92.

Makwe Edith and Adenyuma Mercy Ovaioza (2014). Awareness of Sexually Transmitted Infections (STIs) Including HIV/AIDS among Undergraduate Students of University of Abuja, Nigeria. *British journal of applied science and technology,* (4): 705 – 717.

Markowitz L.E. et al (2009). Seroprevalence of human papillomavirus types 6, 11, 16, and 18 in the United States: National Health and Nutrition Examination Survey 2003-2004. *Journal of Infectious Disease*; 200(7):1059-1067.

Mayaud P., Mabey D. (2004). Approaches to the control of sexually transmitted infections in developing countries: Old problems and modern challenges. *Sexually Transmitted Infection,* 80:174–82.

Meekers D, Ahmed G. (1999). Pregnancy-related school dropouts in Botswana. *Population Studies*,53:195-209.

Mmari K. N., Oseni O., Fatusi A.O. (2010). STI treatment-seeking behaviours among youth in Nigeria: Are there gender differences? *International Perspective of Sexual Reproductive Health*, 36:72–9.

Muir, M.A. (1991). *The Environmental Contexts of AIDS. Praeger* New York, Westport, Connecticut, London.

Murray CJ, Michaaud C. (1997). Estimates of the burden of disease among adolescents, youths and young people: a re-analysis of the global burden of disease version 5.50 results. Working Paper, Burden of Disease Unit, Boston: Harvard Centre for Population and Development Studies.

National Intelligence Council. The Next wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India and China. Intelligence Community Assessment (ICA) 2002-04D In Adedimeji AA. Beyond knowledge and behaviour change: The social- structural context of HIV/AIDS risk perceptions and protective behaviour among young urban slum inhabitants in Nigeria. Takemi Programme in International Health. 2005;3-5.

National AIDS and STD Control Programme. (2001). The 2001 National HIV/Syphilis sentinel survey among pregnant women attending ante-natal clinics in Nigeria. National AIDS/STDs Control Programme, The Federal Ministry of Health; Department of Public Health, December, Technical report. Fact sheet No. 110, August 2011. Available at http://www.who.int/media centre/factsheets/fs110/en/. Accessed on 2/20/2011.

National Institute of Allergy and Infectious Diseases. (2003). What are some common types of STDs. http://unhsc.utah.edu/healthinfo/pediatric/ infections/std.

National Population Commission [Nigeria] & ORC Macro. (2004). Nigeria Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC Macro.

National HIV/AIDS and Reproductive Health Survey (NARHS). (2008). Federal Ministry of Health.

National Population Commission (NPC) [Nigeria] and ICF International. (2014). *Nigeria Demographic and Health Survey 2013*. Abuja, Nigeria, and Rockville, Maryland USA: NPC and ICF International.

Nsuami M.J., Sanders L.S., Taylor S.N. (2010). Knowledge of sexually transmitted infections among high school students. *American. Journal of Health Education,* 41(4):206-217.

Nyarko C., Unson C., Koduah M., Nyarko P., Galley J. (2014). Risk factors of sexually-transmitted infections (STIs) among men and women in a mining community in western Ghana: A study of lifetime occurrence. *International Journal of Scientific & Technology Research;* 3:12.

Okekearu P.S. (2004). Planning for Orphans and Vulnerable Children: A Clarion Call to all Nigerians. *Centre for Right to Health*, 4(1): 12-16.

Okereke C.I. (2010). Sexually transmitted infections among adolescents in a rural Nigeria. *Indian Journal of Social Science Research,* 7:32--40.

Oke, Olubukola A. 2012. Parental Opinion and Preference for Sexuality Education Topics: A Case Study of Lagos Mainland. *Ilorin Journal of Sociology,* 4(1):135

Olsen C, and George, D.M. (2004). Cross – Sectional Study Design and Data Analysis. Retrieved September11, 2011, from College Board: http://www.collegeboard.com.

Ogunjuyigbe (2003). Knowledge of STD/AIDS among Nigerian Youths Not-in-School and Their Risk Reduction Behaviour. *Journal of Human Ecology*, 14(2): 87-92 (2003)

Ogunjuyigbe, P.O. (1997). Perception and knowledge of out-of-school youth about human sexuality: A modest way to control AIDS epidemic in Nigeria. *Ife Social Sciences Review,* 14: 41-51.

Online Source (2014). Retrieved September11, 2014, from University of Ibadan:

http://www.oyostate.gov.com.

Onyeka IN, MieHola J, Ilika AL, Vaskilampi T. (2011). Unintended pregnancy and termination of studies among students in Anambra State, Nigeria. *African Journal of Reproductive Health*. 15:109.

Opoku, B.K., Sardoki Y.A. (2010). Prevalence of genital chlamydia and gonococcal infections in at risk women in the Kumasi Metropolis, Ghana. *Ghana Medical Journal;* 44(1):21-24.

Otolorin E. (1999). An overview of maternal mortality in Nigeria. In: Akuse JT (ed.), Proceedings of workshop on strategies for the reduction of high maternal mortality. Safe motherhood at the local government level in Nigeria. Society for *Gynaecology and Obstetrics Nigeria*, 52-64.

Osanyin. Y. (2012). Assessment of Youth Friendly Health Centres and Services in Nigeria NOTYL Consulting Services, Ibadan, Oyo State.

Patrick IO. (2007). Adolescent Sexual and Reproductive Health in the Niger Delta Region of Nigeria-Issues and Challenges. *African Journal of Reproductive Health,* 11(1): 11 – 12.

Pettifor A, Walsh J, Wilkins V, Raghunathan P. (2000). *How effective is syndromic management of STDs?:* a review of current studies. *Sexually Transmitted Diseases,* 27:371–85.

Richard E.B., Jay C.H. (2002). Sexually transmitted diseases: The classic diseases. In: Walsh PC, Retik AB, Weinberg AJ (eds.), Campbell's Urology 8th edn. Saunders Elsevier, Philadelphia. Chapter 17, pp. 671-691.

Risbud A. (2005). Human immunodeficiency virus (HIV) and sexually transmitted diseases (STDs). *Indian Journal of Medical Research;* 121: 369-376.

Sabatier, R.C.: Social, cultural and demographic aspect of AIDS. *Western Journal of Medicine,* 147: 713-718 (1987).

Samkange-Zeeb F.N., Spallek L., Zeeb Hajo. (2011). Awareness and knowledge of sexually transmitted diseases (STDs) among school-going adolescents in Europe: A systematic review of published literature; *BMC Public Health*, 11:727.

Sallah AM. (2009). Sexual behaviour and attitude towards condoms among unmarried in school and out-of-school adolescents in a high HIV prevalence region in Ghana. *Intr Q Community Health Education*, 29:167-81.

Sekoni A.O., Onajole A.T., Odeyinka K.A. (2013). Sexually transmitted infections: Prevalence, knowledge and treatment practices among female sex workers in a cosmopolitan city in Nigeria. *African Journal Reproductive Health*, 17 (1): 94-102.

Sexual & Reproductive Health – Alberta Health Services Calgary Zone. (2013). TEENS AND TRENDS Copyrights © Alberta Health Services 2002-2015.

Suryakantha, AH. (2009). Community Medicine with Recent Advances. pp 425-429.

Thapa, D.M., Singh S., Singh A. (1999). HIV infection and sexually transmitted diseases in a referral STD Centre in South India. *Sexual Transmission Infection*; 75: 191-193.

UNAIDS. 2008. Report on the Global AIDS epidemic. Geneva. Available from http://www.unaids.org/en/KnowledgeCentre/HIVData/GlobalReport/2008/2008_Global_report.asp. Accessed 29th September, 2014.

Unemo M, Ballard R, Ison C, Lewis D, Peeling R and WHO (2013). Laboratory diagnosis of sexually transmitted infections, including Human immunodeficiency virus. Department of Reproductive Health and Research, WHO, Geneva. Available from http://www.who.int/reproductivehealth

Vanessa C.Q. (2012). Naratives around sexual behaviour and decisions regarding treatment-seeking of adolescent females who contracted a sexually transmitted infection: Birth to Twenty cohort. 12 – 1.

Wellings K, Collumbien M, Slaymakers E, Singh S, Hodges Z, Patel D, and Bajs N. (2006). Sexual behaviour in context: a global perspective. *Lancet 368: 1706 – 28.*

World Health Organization. (1994). A new approach to STD control and AIDS prevention. *Glob AIDS news*; 4: 13-15.

World Health Organization. (2001). Global prevalence and incidence of selected curable sexually transmitted infections: Overview and estimates. Geneva: World Health Organization. (Website:http://www.who.int/publishers/en.html).

World Health Organization. (2004). The Second Decade: Improving Adolescent Health and

Development. Programme Brochure. Department of Child and Adolescent Health and Development, WHO, Geneva.

WHO. 2006. Weekly Epidemiology Records. 73 (26).

World Health Organization. (2007). Global strategy for the prevention and control of sexually transmitted infections: 2006-2015. Geneva: World Health Organization. http://www.who.int/reproductivehealth/publications/stisstrategy/pdf.

World Health Organisation. (2011). WHO Media centre. Sexually transmitted infections, fact sheet No. 110. Available at http://www.who.int/media centre/factsheets/fs110/en/.

WHO. (2013). Laboratory diagnosis of sexual transmitted infections, including human immunodeficiency virus. 14 – 35.

WHO/UNAIDS. (2013). Sexually transmitted diseases: policies and principles for prevention and care *WHO* Sexually transmitted infections (STIs). Fact sheet.

APPENDIX 1

QUESTIONNAIRE

RISK FACTORS FOR SEXUALLY TRANSMITTED INFECTIONS AMONG MARKET DWELLERS IN IBADAN

Dear Respondent,

My name is **Fapohunda Olanike Victoria**, I am currently a postgraduate student of Epidemiology and Medical Statistics of the Faculty of Public Health, College of Medicine, University of Ibadan. I am undertaking a study to investigate the epidemiology of the risk factors for sexually transmitted infections among market dwellers in Ibadan. The research is a requirement for the fulfilment of the award of the degree of Masters in Public Health in Field Epidemiology of the University of Ibadan.

Your sincere response is encouraged as participation in this study is voluntary, absolute anonymity and confidentiality shall be maintained and the information provided will only be used for the research purpose.

Consent: Now that the study has been well explained to me and I fully understand the content of the study, I will be willing to take part in this research.

_____ _____

Signature/Thumbprint of Participant Interview's Signature & Date

Thanks

INTERVIEWER: _____ **SERIAL NO:** _____

S/N	SECTION A: Socio-Demographic Characteristics	
01	Sex	(0) Male (1) Female
02	Date of birth	_____ (Day/Month/Year)
03	Your age at last birthday	_____ (Years)
04	Level of education	(0) No formal education (1) Primary school (2) Completed JSS (3) Completed SSS (4) Arabic School (5) Modern School
05	For respondents who did not complete their secondary school education, what is the reason for not doing so?	(1) Finance (2) Got pregnant (3) Lost interest/Diverted Interest (4) Distracted (5)Others(specify)_____
06	Marital status	(1) Single (2) Married (3) Separated (4) Consensual Union (5)Divorced/Widowed
07	Type of family	(1) Monogamous (2) Polygamous (3) Others (specify)
08	Religion	(1) Christianity (2) Islam (3) Traditional 4 Others specify)
09	Ethnic group	(1) Hausa (2) Igbo (3) Yoruba (4) Others (specify) _____
10	Number of you/your wife (s) pregnancies	
11	Number of you/your wife (s) deliveries	
12	Number of you/your wife (s) abortion	
13	No of children alive	
14	Do you live in this market?	(1) Yes (2) No
15	Who are you living with?	(1) Alone (2) Parent (3) Siblings (4) Family (4) Relative/Caregiver (6) In-Laws (7) Friends
16	How long have you been living in this market?	
17	Do you sometimes stay back in this market?	(1) Yes (2) No
18	Type of accommodation?	(1) One room (2) Room & Parlour (3) Self-contain (4) Market stores/School premises (5) Others (specify)
19	What is your occupation/what do you engage in?	
20	If unemployed, from whom do you get your income?	(1) Husband/partner (2) Parents (3) Siblings (4) Peers (5) My Boss (6) Others (specify)
21	What is your average income? Weekly	*(In Naira)*
22	Do you smoke cigarettes?	(1) Yes (2) No
23	Do you smoke any other substance?	(1) Yes (2) No
24	***If Yes to A23,*** *What substance do you take?*	
25	Do you take alcoholic drinks (including herbal alcoholic drinks)?	(1) Yes (2) No

26	Do you take herbal drinks?	(1) Yes (2) No
27	*If Yes to A25*, What type of drink(s) do you take?	(1) Beer (2) Wine (3) Spirit (4) Others (specify) _____

S/N	SECTION B: Knowledge of Risk Factors of Sexually Transmitted Infections (STIs)			
01	Have you ever heard of Sexually Transmitted Infections?	1 Yes 2 No		
02	Main source of information on STIs?	(1) Television/Radio (2) Health care workers (3) Magazine/Newspaper/Post bills (4) Church/Mosque (5) Friends/Colleagues (6) Others (specify) _____		
03	Can STI be prevented?	(1) Yes (2) No		
STIs Can be prevented by doing the following		Yes	No	Don't know
04	Take antibiotics			
05	Wash vagina/penis with herbs or water			
06	Take alcohol			
07	Pray to God			
08	Wear condoms all times for all sexual acts			
09	Seek protection from traditional healers			
10	Take herbs			
11	Others (specify)_____			
12	What can be used to cure/treat STI?	(0) Herbs (1) Antibiotics (2) Don't know (3) Others (specify) _____		
13	Is it possible for a person to have STI without knowing/showing symptoms?	(1) Yes (2) No (3) Don't know		
Types of STIs you know *You can pick more than 1*		**Yes**	**No**	**Don't know**
14	Gonorrhoea			
15	Warts			
16	Trichomoniasis			
17	Syphilis			
18	Hepatitis			
19	HIV			
20	Pubic lice			
Possible symptoms of STI *You can pick more than 1*				
21	Itching			
22	Discharge			

23	Sores/ulcers			
24	Groin swelling			
25	Pain during sexual intercourse			
26	Pain during urination			
27	Lower abdominal pain			
Causes of STIs?	*You can pick more than 1*	**Yes**	**No**	**Don't know**
29	Do you know the causes of STIs?			
30	Multiple sexual partners			
31	Unprotected sexual intercourse			
32	Previous history of STI			
33	Use of alcohol and other substances that can impair decision making ability			
34	Low socio-economic status			
35	Poor hygiene			

S/N	SECTION C: Sexual Behaviour and History of Sexually Transmitted Infections	
01	Have you ever had sexual intercourse?	(1) Yes (2) No
02	At what age did you first have sexual intercourse?	_____ ***In years***
03	Was this with your regular partner? ***If Yes, skip to C5***	(1) Yes (2) No
04	If No, was it with your casual partner?	(1) Yes (2) No
05	Does your partner have any symptoms of STIs?	(1) Yes (2) No
06	In the Past 12 months, have you been in any sexual relationship?	(1) Yes (2) No
07	How many sexual partners have you had in the last 6 months?	
08	Have you ever had sexual intercourse with more than one partner at a time?	(1) Yes (2) No
09	What was your reason for having the last sexual intercourse?	
10	Describe your partner type at the last sexual intercourse?	(1) Regular partner (2) Casual partner (3) Transactional partner
11	What contraceptive methods do you use?	(1) Condom (2) IUCD (3) Implants (4) Oral contraceptive pills (5) Emergency pills (6) Injectibles (7) Withdrawal method (8) Nothing (9) Others (specify)_____
12	How do you protect yourself against STIs?	(0) Nothing (1) Use of condoms (2) Being faithful with one partner

		(3) Others (specify) _____		
Condom Use		**Yes**	**No**	**Don't know**
13	Have you ever used condom?			
14	Does your partner approve of condom use?			
15	If Yes to Q14, Do you use male condom?			
16	If Yes to Q14, Do you use female condom?			
17	Was a condom used at every time you had sexual intercourse with partner(s)?			
18	How often do you use condom with your partner?	(1) Sometimes (2) All the times (3) Never		
19	What is your reason(s) for not using condom at all times with casual partners?	(1) Partner opposed (2) Unavailable (3) No felt need (4) No Sexual Satisfaction (5) Others (specify) _____		
20	What was the main reason for using condoms?	(1) To protect yourself from HIV and STIs (2) To prevent unplanned pregnancy (3) To protect yourself from both HIV, STIs & Unplanned pregnancy (4) Others (specify) _____		
21	Who suggested condom use that time?	(1) Myself (2) Joint Decision (3) My partner (4) Peers (5) Older Pals (6) Others (specify) _____		
22	Have you ever experienced condom burst during sexual intercourse before?	(1) Yes (2) No		
23	How many times have you experienced it in the past one year (leave as open ended, give rough estimate)			
If Yes to C22, What did you do? *(Please probe very well and write what the respondents said, explain in details)?*				
24	Have you ever had sexual intercourse while drunk on alcohol?	(1) Yes (2) No		
25	Have you ever been tested for HIV?	(1) Yes 2 No		
26	Have you ever had STIs?	(1) Yes 2 No		
27	*If Yes to C26,* please indicate the year and type of infection			

S/N	**SECTION D: Self-Reported Sexually Transmitted Infections**			
	In the past twelve months, did you experience any of the following symptoms?	**Yes**	**No**	**Don't Know**
01	Abnormal discharge in the vagina?			
02	If Yes, did it itch?			
03	Did you notice a different odour of urine			
04	Vaginal irritation?			

05	Did you notice a rash in the vagina?			
06	Feel burn, itch or tingle whenever you urinate?			
07	Did you urinate more frequently than usual?			
08	Sores in your mouth or genital area?			
09	Painful sexual intercourse?			
10	Spotting after sexual intercourse?			
11	Bleeding between menstrual cycles?			
12	Abdominal or pelvic pain?			
For *Men* only: Females *should move to D23*				
13	Abnormal discharge in the penis?			
14	If Yes, did it itch?			
15	Irritation in the penis?			
16	Sores in your mouth or genital area?			
17	Did you notice a rash in the penis?			
18	Feel burn, itch or tingle whenever you urinate?			
19	Did you urinate more frequently than usual?			
20	Painful sexual intercourse?			
21	Spotting after sexual intercourse?			
22	Pain in the testicles?			
23	Abdominal Pain?			

D24. From the mention symptoms, do you have STI? (1) Yes (2) No

D25. What are your suggestions to prevent occurrence of STI in any persons who live in this market?

_____

_____

Thank you for your time!!!

APPENDIX 2

IWE IBEERE

AWON OKUNFA FUN AISAN IBALOPO LARIN AWON TO N NINU OJA NI ILU IBADAN

Ire Olukopa,

Oruko mi ni **Fapohunda Olanike Victoria**, mo je akeko gboye digiri keji ni eka Ajakale arun ati sise igbelewon awon aisan yi, ni fasiti Ibadan. Mo n se iwadi Awon Okunfa Fun Aisan Ibalopo Larin Awon To N Gbe Ninu Oja ni ilu Ibadan. Alaye ti e ba se fun wa yio se iranlowo lati mo isoro ati bi a se pese ona abayo si. A ti yan o lati je okan ninu awon ti a fi oro wa lenu wo ninu ise iwadi yii.

Bi o ba faramon o ni anfaani so ero okan re ko si se idahun, ko si eyi to yege, kosi si eyi ti kunon. A fi dae loju pe alaye ati idahun ni a o fi pamon ti a o si se ni bon kele.

Ibere ko ni gba e ni asiko pupo, a o si mon riri idahun otito, jowo, se a le bere bayi?

Fifehan: Nigba ti eto iwadi yi ti ye mi, mo fi ara mon lati kopa ninu ise iwadi yi.

Thanks

---------- ---------

Ekowo bo we

Deeti

OLU BEERE:

IDANIMO ISE IWADI:

S/N	ABALA A: IGBE AYE OLUKOPA	
01	Okunrin tabi Obinrin	0) Okunrin 1 Obinrin
02	Ki ni ojo ibi re?	(Ojo/Osu/Odun)
03	Kini ojo ori e, ni ojo ibi ti o se keyin?	(ni Odun)
04	Isori eko	0 Nko kawe rara 1 Alakobere 2 Ile iwe oni pele kini 3 Ile iwe oni pele keji
05	Fun oludawun ti ko pari ile iwe oni pele keji, kini idi ti e ko fi pari?	1 Aisi owo 2 O ni oyun 3 Ko wunmi ka 4 Omiran _____
06	Nje oti se igbeyawo?	1 Otiseyawo 2 Ootiseyawo 3 Ati n gbe lotooto 4 Lokolaya ni aye arawa 5 Ati se ikosile/Opo
07	Orisi Idile	1 Oloko Kan 2 Oloko Meji 3 Omiran (salaye)_____
08	Esin to n se	1 kristieni 2 Musulumi 3 Ibalaye 4 Omiran (salaye)_____
09	Eya wo ni oti wa?	1 Hausa 2 Igbo 3 Yoruba 4 Omiran (salaye)_____
10	Oyun melo loti ni?	
11	Iro bi melo loti ni?	
12	Oyun melo loti wale lara e?	
13	Omo melo loni laye?	
14	N je inu oja ni o ngbe?	1 Beeni 2 Beeko
15	Tani o ngbe ni odo e?	1 Mo n da gbe 2 Lodo obi 3 Lodo awon egbon 4 Lodo olutoju 5 Lodo aanan 6 Lodo awon ore 7 Omiran (salaye)_____
16	Odun melo ni o ti n gbe ninu oja?	
17	Nje o ma n sun ninu oja le n kan kan?	1 Beeni 2 Beeko
18	Iru ile ti o ngbe?	1 Yara kan 2 Ile adagbe kekere 3 Layika oja tabi ile akeeko 4 Omiran (salaye)_____
19	Ise tabi orisi ise wo lo nse?	
20	Ti o banise, owo tani o ti ngba owo?	1 Oko tabi/partner 2 Obi 3 Awon egbon

		4 Ore 5 Omiran (salaye)_____
21	Bi elo ni o npa lo se?	1 Beeni 2 Beeko
22	Nje o ma n fa siga?	1 Beeni 2 Beeko
23	Nje o ma n fa nkan miran yato si siga?	1 Beeni 2 Beeko
24	Nje o ma n mu oti lile (pelu agbo ibile)?	1 Beeni 2 Beeko
25	***Bi Beeni si ibeere 24***, Iru oti wo lo n mu?	1 Beer 2 Wine 3 Spirit 4 Herbs 5 Omiran (salaye) _____

S/N	ABALA B: IMO NI PA OUN FA AISAN IBALOPO			
01	Nje oti gbo n pa aisan ibalopo?	1 Beeni 2 Beeko		
02	Bawo lo se gbo ni pa aisan ibalopo?	1 Telifison/Redio 2 Ijosin onigbagbo/Mosalasi 3 Iwe irohin pelebe/Iwe irohin/Asafihan 4 Ore/Akeko 5 Osise ileran 6 Omiran_salaye)_____		
03	Nje aisan ibalopo se dee nan?	1 Beeni 2 Beeko		
	Awon Ona Ti A Fi N Dee Nan Aisan ibalopo	**Beeni**	**Beeko**	**Mi o mo**
04	Lilo antibiotics			
05	Fifo oju ara ibinrin tabi tokurin pelu agbo tabi omi			
06	Mimu oti lile			
07	Gbigba adura			
08	Lilo idaabobo ni gbogbo igba ibalopo			
09	Gbigba idaabobo lowo onisegun ibile			
10	Lilo agbo ible			
11	Omiran (salaye)			
12	Oun ti a le lo lati fi se itoju aisan ibalopo?	(0) Agbo ibile 1 Lilo antibiotics 2 Omiran____		
13	Nje osese ki eniyan ni aisan ibalopo laimo tabi lai fi apere han?	1 Beeni 2 Beeko		
	Orisi Aisan Ibalopo *Ole mu ju idahun kan lo*	**Beeni**	**Beeko**	**Mi o mo**
14	Atosi			
15	Wonwon			
16	Aisan ibalopo lo ju ara obinrin			
17	Kokoro aafera			
18	Aisan jedo jedo			
19	Aisan akoran ni pa ibalopo ti o n fa riro pelu omi egbo loju ara			

20	Kokoro inu eje			
21	Ina ni oju ara			
	Apere Aisan Ibalopo *Ole mu ju idahun kan lo*	**Beeni**	**Beeko**	**Mi o mo**
22	Oju ara to n yun yan			
23	Omira lo ara			
24	Egbo oju ara			
25	Oju ara to n wu			
26	Irora nigba ti o ba nse ibanilopo			
27	Ki oju ara ma jo e nigba ti o ba n to			
28	Riro ni isale ikun			
	Awon Okunfa Aisan Ibalopo? *Ole mu ju idahun kan lo*	**Beeni**	**Beeko**	**Mi o mo**
29	Nje omo awon okunfa aisan ibalopo? ***Bi Beeko, lo dahun Abala C***			
30	Sise ibalopo pelu eniyan pupo			
31	Ibalopo lai ni idaboobo			
32	Itan Aisan Ibalopo seyin			
33	Lilo oti lile tabi owun miran ti ko ni je ki o ro nu dada			
34	**Low socio-economic status**			

S/N	ABALA C: ASA IBALOPO ATI ITAN AISAN IBALOPO	
01	Nje oti se ibalopo ri?	1 Beeni 2 Beeko
	Bi beeni, dahun awon ibeere won yi. Bi beeko losi 26	
02	Lati odun wo ni o ti n se ibalopo?	_____ *Salaye ni odun*
03	Nje ose ibalopo pelu enikan ti mo fi ara mo?	1 Beeni 2 Beeko
04	Bi beeko, nje ose ibalopo pelu patina mi lasan?	1 Beeni 2 Beeko
05	Nje partner re ni apere Aisan Ibalopo?	1 Beeni 2 Beeko
06	Ni osu mejila seyin, nje oti yan ore fun ibalopo ri?	1 Beeni 2 Beeko
07	Awon oni ibanilopo melo ni oti yan ni osu mefa seyin?	
08	Nje oti se ibanipolo ri ju enikan lo ni gba kan na ri?	1 Beeni 2 Beeko
09	Nje ki ni idi ti o fi se ibanilopo to se kehin?	
10	Se apajuwe iru eni ti o ba ni ibalopo kehin?	1 Fi ara mo enikan 2 Patina mi lasan 3 Patina fun ere
11	Fetosomobibi tabi idabobo wo lo n lo?	1 Idaboobo 2 Fiha si oju ara 3 Onikooro

		4 Onikooro kpa ja wiri (5) Fiha sa pa 6 Alabere 7 Omiran_____(salaye)
12	Bawo ni o se n se idabobo fun Aisan Ibalopo	0 Mi o lo nkan kan 1 Lilo Roba Idabobo 2 Omiran (salaye)

Bi A N Se Nlo Roba Idabobo		**Beeni**	**Beeko**	**Mi o mo**
13	Nje oti lo roba idabobo ri?			
14	Nje eni ti e jo n se ibalopo gba ki o lo roba idabobo?			
15	Bi beeni si ibeere 14, Nje roba idabobo okunrin ni o nlo?			
16	Bi beeni si ibeere 14, Nje roba idabobo obinrin ni o nlo?			
17	Nje se gbogbo igba ti o ba ni ibalopo pelu eni ti e njo se, ni e lo roba idabobo?			
18	*Bi beeni si ibeere 13*, Bawo lo nse lo roba idabobo si pelu patina mi lasan?	1 Le nkan kan 2 Nigbogbo igba 3 Rara		
19	Nje kini awon idi ti o nse kin fi malo roba idabobo pelu patina mi lasan lasan?	1 Patina mi kogba 2 Kosi n le nigba ti a nilo re 3 A ko ni ilo re 4 Ibanilopo ki n dun (5) miran_____(salaye)		
20	***Bi beeni si ibeere 17***, Nje kini idi ti o fi lo roba idabobo?	1 Idaboboo fun kokoro inu eje tabi aisan ibalopo 2 Idaboboo fun oyun ti ako fe 3 Idaboboo fun kokoro inu eje tabi aisan ibalopo pelu Idaboboo fun oyun ti ako fe 4 Omiran _____(salaye)		
21	Tani oso wipe ki elo roba idabobo nigba ti e lo?	1 Emi 2 Ajomo wa 3 Patina mi 4 Awon egbe mi (5) Awon agba ore 6 Omiran_____ (salaye)		
22	Nje roba idabobo ti ja ri nigba tin se ibanilopo ri?	1 Beeni 2 Beeko		
23	***Bi beeni si ibeere 22***, Nje ato igba melo ni oti ja ri			
24	***Bi beeni si ibeere 22***, Nje kini o ma nse? ***(Jowo se iforo wani lenu wo finifini)?***			
25	Nje oti ni ibalopo ri nigba ti oti mu oti lile yo ri?	1 Beeni 2 Beeko		
26	Nje oti se ayewo Kokoro Inu Eje ri?	1 Beeni 2 Beeko		

27	Nje oti se ayewo Aisan Ibalopo ri?	1 Beeni 2 Beeko
28	***Bi beeni si ibeere 27***, Jowo ko idahun ni odun ati iru Aisan Ibalopo to je	

	ABALA D: AISAN IBALOPO TI A FI ORO ENU GBA SILE			
	Nje ninu osu mejila seyin, se o ti ni awon awon apere won yi?	**Beeni**	**Beeko**	**Mi o mo**
01	Omira to da yato ni oju ara obinrin?			
02	Omira to da yato ni oju ara obinrin?			
03	Nje beeni si ibeere 2 & 3, Se o n yun e?			
04	Nje o n jo e, tabi ko yun e, tabi ko rin e ti o ba n to?			
05	Nje oti n to pupo ju tele lo?			
06	Akiyesi oorun to yato ninu ito tabi omi ara?			
07	Egbo ni enu tabi ni oju ara?			
08	Akiyesi kurunan ni oju ara obinrin?			
09	Akiyesi kurunan ni oju ara okunrin?			
10	***Fun Awon Okunrin Nikan:*** Nje se nkan omokunrin e ma n dun e?			
11	Ko ju ara okunrin ma yun?			
12	***Fun Obinrin Nikan: Ki awon okunrin dahun ibeere 19***			
13	Ki oju ara obinrin ma yun?			
14	Irira loju ara obinrin?			
15	Irora nigba ti o ba nse ibanilopo?			
16	Ki eje ma yo nigba ti o n se ibalopo?			
17	Nje o ma n ri eje larin igba ti o ma nse nkan osu?			
18	Nje oju ara e da yato, tabi se o ma n ni irora?			
19	Nje isale ikun ro e?			

20. Nje oni Aisan ibalopo ni osu mejila seyin? 1. Beeni 2. Beeko

19. Nje ki ni awon imoran ti a fi le se idabobo ara fun Aisan Ibalopo ni enikeni to ba ngbe ninu oja yi?

_____

_____

Ose Fun Akoko Re!!!

APPENDIX 3

TABLE 3.10. DATA MANAGEMENT

OBJECTIVES	VARIABLES	STATISTICAL TEST
Objective 1	Socio-demographic characteristics.	Frequency distribution
Objective 2	Socio-demographic characteristics and presence of symptomatic self-reported STIs.	Frequency distribution Chi-square analysis
Objective 3	Presence of self-reported STIs in the past six months.	Frequency distribution
Objective 4	Knowledge of the market dwellers on risk factors for STIs.	Frequency distribution
Objective 5	Sexual behaviours and presence of symptomatic self-reported STIs.	Multiple logistic regression

APPENDIX 4: Key Informant Interview Guide

TOPIC: RISK FACTORS OF SEXUALLY TRANSMITTED INFECTION AMONG MARKET DWELLERS IN IBADAN, OYO STATE

Name of Interviewer: FAPOHUNDA Olanike Victoria

Date of Interview: 20th August, 2015

Introduction: My name is FAPOHUNDA Olanike Victoria. I am studying for a Masters Degree in Public Health (Field Epidemiology) at the University of Ibadan. I am carrying out a research titled 'Risk Factors of Sexually Transmitted Infections among Market dwellers in Ibadan, Oyo State'. This is in partial fulfilment of the requirements for the degree. I would like to ask you some questions as regards the topic. The information you give will be instrumental in improving the health status and living condition of the market dwellers in reducing the incidence and prevalence of sexually transmitted infections.

Notes for Interviewer: This is an interview guideline and the questions provide the general information required for the study. The guideline contains five sections: General Information, Market Dwellers, Occupation, Sexual Behaviours of the Market Dwellers, Intervention to Done to Take the Market Dwellers off the Market.

Section One: General Information

1. Do people live in the market?
2. Kindly state the group of people that live in the market?

Section Two: Market Dwellers

1. How long have the market dwellers been living in the market?
2. Kindly state where they sleep at night?

Section Three: Occupation

1. What activity/job do the market dwellers engage in?
2. Kindly state their major occupation/source of income?

Section Four: Sexual Behaviours of the Market Dwellers

1. Are the market dwellers sexually active?
2. Kindly state their perceived age at sexual debut? What is their preferred choice of preventing sexual transmitted infections?
3. Do they practice other STI prevention measures?

Section Five: Intervention to Done to Take the Market Dwellers off the Market

1. What are the known interventions conducted prior to this study to take the market dwellers off the street?

3TELEGRAMS.....

TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....

All communications should be addressed to the Honorable Commissioner quoting

Our Ref. No. AD 13/ 479/____

19th October, 2015

The Principal Investigator,
Department of Epidemiology and Medical Statistics,
Faculty of Public Health,
University of Ibadan,
Ibadan.

Attention: Fapohunda olanike

ETHICAL APPROVAL FOR THE IMPLEMENTATION OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled: "Risk Factors for sexually Transmitted Infections among Market Dwellers in Ibadan, Oyo State" has been reviewed by the Oyo state Review Ethical Committees.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. Wishing you all the best.

Signature & Date

Dr. Abbas Gbolahan
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethical Review Committee