TITLE PAGE

PATTERNS OF PREVENTIVE SEXUAL HEALTH BEHAVIOURS TOWARDS SEXUALLY TRANSMITTED INFECTIONS AMONG TERTIARY INSTITUTION STUDENTS IN IMO STATE, NIGERIA.

BY

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APPROVAL PAGE

This dissertation has been approved for the award of the Degree of Doctor of Philosophy (Ph.D) in Public Health Education in the Department of Human Kinetics and Health Education, Faculty of Education, Nnamdi Azikiwe University, Awka.

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DEDICATION

This work is dedicated to my family and all youths in need of accurate and adequate sexual health information.

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ABSTRACT

This study was designed to determine the patterns of preventive sexual health behaviours towards sexually transmitted infections among tertiary institution students in Imo State. To facilitate the realization of this objective, twelve research questions and thirteen hypotheses guided the study. The cross-sectional descriptive survey design was adopted for the study. The population for the study was 63,297 tertiary institution students in Imo State. The proportional stratified random sampling technique was used in sampling the respondents. The sample for the study was 1399. The instrument used was a self-constructed questionnaire. The questionnaire consisted of 46 items. Three experts drawn from the Departments of Health Education and Public Health Technology validated the instrument, while reliability was established using the Cronbach's Coefficient Alpha method and a reliability of 0.76 was obtained. Descriptive statistics of mean was used in answering the research questions while inferential statistics of z-test and ANOVA were used in testing the hypotheses at 0.05 level of significance. In testing the interaction effect, ANCOVA was employed. The finding of the study revealed that females practised adequate primordial preventive sexual health behaviour more than males. Males practised adequate primary, secondary and tertiary preventive sexual health behaviours more than females. From the finding, age group 20-24 showed adequate primary and secondary preventive sexual health behaviours more than other age groups. Students in year 5 practised preventive sexual health behaviour more than others. There was significant difference in the patterns of primordial, primary and tertiary preventive sexual health behaviours of male and female students, students of different age groups and students of different years of study. There was no significant interaction effect of gender, age and year of study on preventive sexual health behaviours of the subjects. Based on the findings of the study, recommendations which focused on how to improve and advance the practise of preventive sexual health behaviours were proffered.

CHAPTER ONE

INTRODUCTION

Background to the Study

The adage that prevention is better, as well as cheaper than cure is a common saying, yet many preventable diseases such as sexually transmitted infections (STIs) remain one of the health problems confronting the human race. Studies have revealed that STIs are common and preventable causes of morbidity and serious complications, as well as, one of the leading causes of preventable deaths worldwide (Lopez, Mathers, Ezzati, Jamison & Murray 2006; Tamale, 2006; Pettifor, McCoy & Padian 2012). Approximately one million people contract sexually transmitted infections every day and 50 per cent of them are adolescents aged 15-25 years (Lazarus, & Hiljestrand, 2010). The World Health Organization (WHO) (2011) estimated that the number of people with STIs is increasing worldwide by about 250 million a year and that STIs rank among the five infections for which health care services are sought. Seligain and Virendra (2003) reported that except for colds and flu, STIs are the most common contagious infection with attendant complications. For instance, untreated chlamydial and gonococcal infections\ may result in pelvic inflammatory disease, which can lead to infertility, ectopic pregnancy, and chronic pelvic pain. Sexually transmitted infections as reported by Pettifor, et al., can also result in adverse outcomes in pregnancy, including spontaneous abortion, still birth, premature birth, and congenital infection. The presence of STIs can facilitate HIV transmission (Galvin & Cohen, 2004). Thus, prevention of STIs needs to be given high priority.

Daniel (2012) asserted that sexually transmitted infection is one of the major health challenges among youths. This may be because youths still indulge in high risky sexual activities despite their knowledge of this as a risk factor to STI (Hulton, Cuhben & Khalokho, 2000). Therefore, the issue of high incidence rate of STIs among youths may not be because of lack of sexual health knowledge but may be because of lack of application of such

knowledge. For instance, when one knows that unprotected sex exposes one to STI but fails to adhere to any of the measures to protect oneself, one increases one's chances of contracting STIs. Therefore, adopting positive sexual health behaviour can result to STIs risk reduction.

Health behaviours according to Gochman (2001) are those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements (e.g. personality characteristics), actions and habits related to health maintenance, health restoration, and health improvement. Kasl and Cobb (1986) classified human health behaviours into three, namely; preventive health behaviour, illness behaviour and sick-role behaviour. This study is all about preventive health behaviours. Preventive health behaviours are those habits and actions taken by a person to maintain, attain, or regain good health and prevent illness. Therefore, preventive sexual health behaviour is an aspect of preventive health behaviour.

Preventive sexual health behaviours are those behaviours that promote sexual health. According to the World Health Organization (WHO) (2002), sexual health is a state of physical, mental and social well-being in relation to sexuality. This implies that sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences void from coercion and discrimination. To be sexually healthy, one must approach sexuality with adequate knowledge, personal awareness and self-acceptance. This means that an individual's sexual behaviours, values and emotions must be congruent and integrated within the individual's wider personality structure and self- definition.

Attaining and maintaining sexual health involves the ability to be intimate with a partner, to communicate explicitly about sexual needs and desires, to be sexually functional, to act intentionally and responsibly, and to set appropriate sexual boundaries (Robinson,

Partrick, Eng & Gustaforz, 2012). The above statement indicates that sexual health involves a sense of self–esteem, personal attractiveness, and competence. Therefore, to be sexually healthy, one must have informed, enjoyable and safe sex, based on self-esteem, positive approaches to human sexuality and mutual respect in sexual relations, hence the need for preventive sexual health behaviours.

The role of preventive sexual health behaviours in promoting sexual health cannot be over emphasized. Preventive sexual health behaviours may help in reducing one's risky-sexual behaviours. Risky–sexual behaviours are those actions that expose an individual to sexually transmitted infections (STIs) and the attendant complications (Kelly, & Bain, 2003). Risky sexual behaviours also known as unsafe sexual behaviours include unchecked sexual activities, pre-marital sex, unprotected sex, and unplanned sex (The Family Planning Association (2013). The health effects of unsafe sexual health behaviours as revealed by Stoppler (2012) are sexually transmitted infections and unwanted pregnancies.

Sexually transmitted infections (STIs) are infections that are passed from one person to another through sexual contact (Trollope-Kumar & Guyatt, 2006). Sexually transmitted infections Nuwaha (2006) reported can also be transmitted non-sexually through breastfeeding, contaminated intravenous (IV) needles and other sharp objects; mother to child during birth, and transfusion of unscreened blood. Several health problems such as human papilloma virus (HPV), associated cancers, ectopic pregnancy, and eye infection in newborns are associated with STIs. Sexually transmitted infections may be acute or chronic and may have devastating health effects which may either be short term or long term. Whatever effect a particular STI may impose on an individual, it needs to be prevented, to avoid or reduce its complication.

Complications of STIs include among others, fallopian tube damage, pelvic inflammatory diseases, genital human papilloma virus (HPV), hepatitis, kidney disease, optic

neuritis and cancers (Cates & Mcpheeters, 2007). Liver cirrhosis, negative pregnancy outcomes, such as preterm delivery and low birth weight are also some of the health complications of STIs (Holmes, 2012). These complications that stem from STIs can only be checkmated if appropriate patterns of preventive sexual health behaviours are adopted especially by sexually active individuals.

Preventive sexual health behaviours can take different patterns, each aiming at achieving adequate sexual health. Pattern can be a design or a guide. In terms of behaviour, Hacker (2011) defined pattern as a reliable simple trait, act, tendencies or other observable characteristics of a person, group, or institution. As a design or guide, patterns of preventive sexual health behaviours are classified by Laaksonen, Prattala and Karisto (2001) into four, namely; primordial, primary, secondary and tertiary. This study will be guided by this Laaksonen, et al. classification of preventive sexual health behaviours. Explaining further Laaksonen, et al., explained that primordial preventive sexual health behaviours pattern encompasses those actions that aim at the prevention of the emergence or development of risk factors of STIs and efforts directed towards discouraging individuals from adopting harmful lifestyles. These risk factors of STI may include sharing innerwear, drug injecting instruments (e.g. syringe) and other sharp objects. Other risk factors associated with primordial preventive measures according to Agha, Hutchinson and Kutsannthanln (2006), include among others watching pornographic films and pictures, use of alcohol and drug, as well as inability to initiate safe sex due to low self esteem. This study will be guided by this Laaksonen, et al. classification of preventive sexual health behaviours.

Primary preventive sexual health behaviours pattern aims at preventing disease from occurring in healthy individuals. According to Laaksonen, et al. (2001), primary preventive sexual health behaviours include actions taken prior to the onset of disease, which remove the possibility that the disease will ever occur. Such actions according to Crosby and Bounse

(2012) include among others, abstaining from all sexual contacts, limiting the number of sexual partners, getting tested along with one's sexual partners before having sex, avoiding sex when under the influence of alcohol and drugs, and getting vaccinated against human papillomavirus (HPV) and hepatitis B (HBV). Practising safe sex is another primary preventive sexual health behaviours pattern. Having safer sex means using a latex or polyurethane barrier for all forms of sex. This can include among others, using male or female condom during intercourse, using condoms or dental dams for oral sex, and using gloves for manual penetration. Consistent and correct use of condoms greatly reduces the risk of contracting STIs (The Patient Education Institute, 2010). According to Dallabeta, Wi, and Nielson (2008) primary preventive sexual health behaviours include practising safer sex, getting tested regularly, having sex only within a mutually monogamous relationship, avoiding the use of alcohol and drugs before having sex and comfortably saying "No" to sexual advances when not safe. Primary preventive sexual health behaviours pattern helps to protect healthy individuals from STIs, thereby reducing the incidence of STIs.

Secondary preventive sexual health behaviours pattern aims at early detection of individuals with STIs, and taking prompt, and effective measures to prevent or reduce complications (Laaksonen, et al., 2001). Adopting secondary preventive sexual health behaviours pattern helps to shorten the course of STI, as well as reduces its prevalence. The ultimate aim of secondary preventive sexual health behaviours pattern is early detection and thorough treatment of patients. Therefore, secondary preventive sexual health behaviour patterns can be adopted by patients with an existing pathology, to reduce the risk of reoccurrence or progression. For instance, an STI patient seeking for medical treatment, as well as abstaining from unsafe sexual activity to prevent re-infection has adopted a secondary preventive sexual health behaviour pattern.

Tertiary preventive sexual health behaviour pattern focuses on helping people manage complicated long-term health problems (Gregson, Nyamukapa & Garnett, 2002). This means that the tertiary preventive pattern aims at preventing further physical deterioration, maximizing quality of life, and reducing negative impact of symptomatic diseases such as STIs. Tertiary prevention is achieved through treatment and rehabilitation (The U.S Department of Health and Human Service, 2009). The goals of tertiary preventive sexual behaviour patterns of STI include among others, preventing pain and damage, halting progression and complications from diseases, and restoring the health and functions of the individuals affected by diseases (The Centre for Disease Control and Prevention, 2006).

Preventive sexual health behaviour patterns can be modified by some variables. These variables could be social or cultural. The United States National Institute of Health (2008) stated that religion, culture and tradition are the three major factors that influence the choice of pattern of preventive sexual health behaviour. Other intervening variables identified by Adebiyi and Asuzu (2009) are peer pressure, gender, parental pressure, age, media, knowledge and family background. These variables may be hindrances to preventive sexual health behaviour patterns such as having STI screening and test. Among all the above mentioned independent variables, gender, age and year of study will be studied.

Gender is defined by The Patient Education Institute (2010) as the range of physical, biological, mental and behavioural characteristics pertaining to and differentiating between masculinity and feminity. Gender role stereotype has negative effects on females while it favours males in several ways. This assertion is supported by the findings of Lohman and Billings (2008), that males report condom use more than their female counterparts. This shows that gender stereotype can influence the adoption of preventive sexual health behaviours among females negatively. It can also lead to females shying away from or even experiencing restricted access to sexual health care provided in the community. When this

happens, the person's vulnerability to sexual threat such as unprotected sex and sexual exploitation increases. These sexual threats increase the chances of contracting sexually transmitted infections (STIs) among females.

Age on the other hand plays a significant role on preventive sexual health behaviours. Age influences not only the acquisition of knowledge and information but also affects the application of such knowledge and information (Trenholm, Forston, Clark, Quay & Wheeler, 2008). In support of this statement, Luke (2003) revealed that condom use among youths increases with age and younger youths lack the negotiating power in sexual relationship. Contrariwise, Kopele and Shumbber (2011) revealed that young people are more likely to adopt and maintain preventive sexual health behaviours than older people. It is also important to note that age interact with intervening variables such as knowledge, peer pressure that influence patterns of preventive sexual health behaviours.

Year of study in tertiary institutions depicts the period of time a student has spent in the institution. The school environment and campus life predisposes the students to high risk sexual behaviours, especially the 'freshers' (i.e. the students who gained admission into the first year in the tertiary institution). Most of the newly admitted students see this as an opportunity to live a "free man's life as they are no longer under the full control of their parents or guardians. This confirms the assertion that young people often take advantage of freedom from direct parental supervision and guidance to express their freedom by initiating sexual activities without adequate protection (Okpani & Okpani 2009). Socially, a typical tertiary environment in Nigeria (especially in Owerri, Imo State which is known for night life and club activities) offers opportunities for high level of sexual networking, and the freedom that characteristizes the permission of permissive lifestyle. Therefore, there is need to promote sexual health among tertiary institution students. This can be achieved through

practicing preventive sexual health behaviours since it reduce the chances of an individual contracting sexually transmitted infections.

Tertiary institution students according to Imaledo, Peter-Kio and Asuguo (2012) are mainly made up of male and female youths or adolescents aged 15 – 24 years. Youth age according to the United Nations definition in the United Nation Children's Fund (2006), are those people between the ages of 15 years and 24 years. The African Youth Charter (2009) on the other hand defined youth as every person between the ages of 15 years and 35 years. Youth age is a period of transition from the dependence of childhood to adulthood's independence and awareness of people's interdependence as members of a community. This means that youth age is the time of life when one is between childhood and adulthood. According to the World Bank (2010), there are about 2 billion people aged 10-24 years in the world. This age bracket represents the youths.

The choice of tertiary institution students within the age bracket of 15 – 34 years is because they are sexually active (Omoregie, 2002). This sexual activeness, according to John, et al. (2012), makes young people potentially vulnerable to sexually transmitted infections (STIs). Findings from the National Demographic and Health Survey (2008) showed that the mean age of sexual debut among youths is 17 years in females and 21 years in males. It is based on these facts that this study has been chosen to determine the patterns of preventive sexual health behaviours of tertiary institution students in Imo State, Nigeria.

Statement of the Problem

Youths at this digital age, are supposed to have adequate knowledge of sexuality and sex, and the health consequences of engaging in high risk sexual activities. This is because they can easily access sexual health information via the internet. Moreover, more youths now attend tertiary institutions when compared to what existed in the past and therefore are supposed to be more knowledgeable about sexual health issues, as well as promote their

sexual health with the sexual health knowledge acquired. But research findings as revealed by Hulton, et al. (2000) have shown that youths are the most-at-risk population of sexually transmitted infections (STI).

Non-application of knowledge about sexual health may be the reason behind the global high incidence rate of STIs among youths. The discrepancy between knowledge about sexual health and practice of preventive sexual health behaviours may be associated with certain characteristics common among youths. These characteristics include among others, engaging in impulsive sexual behaviour, sexual exploration and implementation. Youths may be deterred to exhibit the ideal sexual behaviours such as sexual abstinence, safe sex practice and avoidance of drug and alcohol use due to these characteristics.

In an effort to reduce the incidence of sexually transmitted infections and to promote sexual health in the youth population, several global efforts have been made by international organization to curb the menace. Such efforts include among others, the mapping out of guidelines on reproductive health outlines by the United Nations Population Fund (2003). These guidelines for reproductive health address such issues as harmful practices, unwanted pregnancy, unsafe abortion, reproductive tract infections including sexually transmitted infection, HIV and AIDS, gender-based violence, infertility and reproductive tract cancers among youths. In the same effort to prevent and control STIs among youths, sex education has been built into the school's curriculum.

The Nigerian government, in the bid to control STIs among youths, formulated the National Reproductive Health Policy and Strategies aimed at achieving quality reproductive and sexual health for all Nigerians (Federal Ministry of Health, 2001). The Imo State Government in an effort to provide adequate health care, as well as control STIs among the teeming population of her youths, embarked on the establishment of general hospitals in each of her 27 Local Government Areas. The tertiary institutions in the State are not left out in

this fight against STIs among youths. These tertiary institutions in the state offer general studies (GS) courses on sexual health.

Unfortunately, despite all these ongoing efforts, some youths still practice high-risk sexual behaviours but sexual health can only be attained through the application of gained knowledge about sexual health. Moreover, only few empirical studies (Bozicevic, Stuhofer, Ajdukovic & Kufrin, 2006; Dominique & Megan, 2010) have been conducted on sexual behaviours and STIs and these studies were carried out outside Nigeria. Studies (Envluado, Agbo, Ohize and Zoakah, 2013; Nwoke & Okafor, 2014; Oladimeje and Mojisola, 2011) conducted on sexual behaviours in Nigeria concentrated on risky sexual behaviours and targeted secondary school students only. There seems to be no empirical study on preventive sexual health behaviours targeted on tertiary institution students in Imo State. The need to bridge this observed gap motivated this study on the patterns of preventive sexual health behaviours about sexually transmitted infections among tertiary institution students in Imo State.

Purpose of the Study

The main purpose of this study is to examine the patterns of preventive sexual health behaviours among tertiary institution students in Imo State. The specific purposes of the study are to determine:

1. the primordial preventive sexual health behaviour patterns of male and female tertiary institution students in Imo State;
2. the primordial preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State;
3. the primordial preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State;

4. the primary preventive sexual health behaviour patterns of male and female tertiary institution students in Imo State;
5. the primary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State;
6. the primary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State;
7. the secondary preventive sexual health behaviour patterns of male and female in tertiary institution students in Imo State;
8. the secondary preventive sexual health behaviour patterns of students of different age groups in tertiary in institution in Imo State;
9. the secondary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State;
10. the tertiary preventive sexual health behaviour patterns of male and female tertiary institution students in Imo State;
11. the tertiary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State; and
12. the tertiary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.

Significance of the Study

The findings of this study will be beneficial to youths, sexual health care providers, tertiary institution administrators, researchers in reproductive and sexual health, as well as youth organizations and non-governmental organizations involved in health activities. The result of this study will be of immense significance to youths. This is because the findings of the study will unveil different patterns of preventive sexual health behaviours. Practising any of the identified preventive sexual health behaviours as will be revealed by the findings will

play a significant role in reducing the incidence of sexually transmitted infections among youths.

It is also hoped that the results of this study would provide vital and useful information that will motivate youths to promote their sexual health. This will be achieved if the findings and recommendations are properly applied. Knowledge of the findings of this study will help to checkmate the rate at which youths involve themselves in high risk sexual behaviours such as unprotected sex.

The findings will be of immense help to the existing body of knowledge on patterns of preventing sexually transmitted infections. The findings will also be of immense value to sexual health care providers. This is because the findings will help them to map out programmes that will not just end at giving information to the youths, but that which will motivate them (the youths) to adopt preventive sexual health behaviours. The results will also help sexual health care providers plan and implement sexual health care services that would be available, affordable and accessible to youths (i.e. youth friendly sexual health care services).

The findings will also be of immense benefit to tertiary institution administrators, as they will help the administrators create environment that will promote the students' sexual health if the findings are applied. This they can do by providing sexual health care units in their school clinics. This can also be achieved through offering free periodic sexual health counselling, as well as STIs testing and screening. The results will also help health educators organize seminars on sexual health promotion as well as map out sexual health programmes that will be youth centered. Researchers will find the study very useful as the findings will serve as a base-line reference point in researches on sexual behaviour and sexually transmitted infections.

The findings will also be of immense benefit to youth organizations and non-governmental organizations involved in health activities. This is because the findings will help the organizations in mapping out programmes that promote the sexual health of youths, as well as, those that discourage youths from engaging in high risk sexual activities.

Scope of the Study

This study is designed to determine the patterns of preventive sexual health behaviours about sexually transmitted infections among tertiary institution students in Imo State. The population is restricted to only students in the five government-owned tertiary institutions that admit through Joint Admission and Matriculation Board (JAMB) in Imo State. The dependent variables of the study are delimited to primordal, primary, secondary and tertiary preventive sexual health behaviour patterns. The independent variables that were considered in the study are gender, age and year of study.

Research Questions

The following research questions guided this study.

1. What are the primordial preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State?
2. What are the primordial preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State?
3. What are the primordial preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?
4. What are the primary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State
5. What are the primary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State?

6. What are the primary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?
7. What are the secondary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State?
8. What are the secondary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State?
9. What are the secondary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?
10. What are the tertiary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State?
11. What are the tertiary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State?
12. What are the tertiary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?

Hypotheses

The following hypotheses were tested at 0.05 level of significance

1. There is no significant difference in the primordial preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.
2. There is no significant difference in the primordial preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.
3. There is no significant difference in the primordial preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.
4. There is no significant difference in the primary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.

5. There is no significant difference in the primary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.
6. There is no significant difference in the primary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.
7. There is no significant difference in the secondary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.
8. There is no significant difference in the secondary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.
9. There is no significant difference in the secondary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.
10. There is no significant difference in the tertiary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.
11. There is no significant difference in the tertiary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.
12. There is no significant difference in the tertiary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.
13. There is no significant interaction of age, gender and year of study of these tertiary institution students on the patterns of their primordial preventive sexual health behaviours.
14. There is no significant interaction of age, gender and year of study of these tertiary institution students on the patterns of their primary preventive sexual health behaviours.
15. There is no significant interaction of age, gender and year of study of these tertiary institution students on the patterns of their secondary preventive sexual health behaviours.

16. There is no significant interaction of age, gender and year of study of these tertiary institution students on the patterns of their tertiary preventive sexual health behaviours.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter on review of related literature is treated under the following sub-heading.

Conceptual Framework

Preventive heath behaviours

Prevention is the act of not allowing or permitting something to happen (Centre for Disease Control and Prevention, CDC, 2006). Prevention includes a wide range of activities, known as interventions, aimed at reducing risks or threats to health. Such preventive activities or practices in relation to sexual health include among others, abstinence and reduction in number of sex partners, pre-exposure vaccination, male and female condom use, and use of cervical diaphragms (CDC, 2010b). As asserted by the American Sexual Health Association (2016), a reliable way to avoid STIs is to abstain from anal, oral and vaginal sex or to be in a long-term mutually monogamous relationship with an uninfected partner. The

Center for Disease Control and Prevention on the other hand reported that pre-exposure vaccination is one of most effective methods of preventing transmission of STIs.

The primary prevention of sexually transmitted infections begins with changing the sexual behaviours that place persons at risk of infection. Therefore, avoiding high-risk sexual behaviours plays a role in STIs risk reduction. The Center for Disease Control and Prevention (2011a) stated that the prevention and control of STIs are based on education and counseling of persons at risk on ways to avoid STIs through changes in sexual behaviours and use of recommended services; identification of asymptomatically infected persons and symptomatic persons unlikely to seek diagnostic and treatment services; effective diagnosis, treatment and counseling of infected persons; evaluation, treatment and counseling of sex partners who are infected with STI; and pre-exposure vaccination of persons at risk for vaccine preventable STIs.

There are certain behaviours associated with negative health occurrences. Such behaviours or actions, when avoided according to Choudhry, Ramachandran, Das, Bhattacharya and Mogha (2012) automatically lead to the prevention of associated complications. Furthermore, certain human behaviours are linked with certain health problems. Such human behaviours include risky sexual activities, uncleanliness, non-challant attitude to medical care, and alcohol and drug use. According to Dallabetta (2008), sexual abuse, unprotected sex and sexual intercourse for money or support for basic needs are some of the risky sexual activities that expose an individual to sexually transmitted infections (STIs). Sexually transmitted infections are preventable, and this can be achieved through exhibiting adequate preventive sexual health behaviours. Moges, et al. (2013) revealed that the most effective way to prevent sexual transmission of STIs is to avoid contact with body fluid. Therefore, consistent and correct use of condom reduces contact and risk. Concerning the effectiveness of condom in preventing STIs, Kenny (2011) asserted that although condom

use is effective in limiting exposure, some STIs transmission may occur even with condom. Therefore, adopting two or more preventive sexual behaviours is expedient in preventing STIs.

Laaksonen et al. (2001) identified four levels of prevention. They are primordal prevention, primary prevention, secondary prevention and tertiary prevention. Primordal prevention encompasses the prevention of the emergence or development of risk factors in a population in which they have not yet appeared, and the effort directed towards discouraging youths from adopting harmful lifestyle. Primary prevention includes actions taken prior to the onset of diseases, which remove the possibility that the disease will ever occur. Secondary prevention involves action which halts the progress of a disease at its incipient stage and prevents complications. On the other hand, tertiary prevention consist of all measures available to reduce or limit impairment and disabilities, minimize suffering caused by existing departures from good health and to promote the patient's adjustment to irremediable conditions. According to the Centre for Disease Control and Prevention (2011b), primary preventions focus on the health of a person or population; secondary prevention includes screening for those at risk to develop an illness or those who could have the disease diagnosed early in the process for prompt treatment; and tertiary prevention occurs when diagnosis of a long term disease or disability has already been made. In this study, all these preventive measures with regards to sexual health shall be considered.

Based on the four classes of prevention, preventive sexual health behaviours were classified by Laaksonen, et al. (2001) into primordial, primary, secondary and tertiary levels. At the primordial level, actions to minimize future hazards to health and hence inhibit the establishment factors (environmental, economic, sexual behaviours, cultural) known to increase of disease are taken. Broad health determinants rather than preventing personal

exposure to risk factors are address at this level. Promoting sanitation and promoting a healthy lifestyle are examples of primordial prevention.

The root cause of diseases is address at primary prevention level. This shows that primary prevention aims to prevent disease or injury before it ever occurs. Santelli, Brener and Larry (1998) reported that primary prevention seeks to prevent the onset of specific disease via risk reduction by altering behaviours that can lead to disease, or by enhancing resistance to the effects of exposure to a disease agent. The aim of prevention at this level is to promote healthy behaviours, improve host resistance, and foster safe environments that reduce the risk of diseases. The above is supported by Kottke (2009) report that primary prevention involves interventions that are applied before there is any evidence of disease or injury. The strategy of primary prevention is to remove causative factors (risk reduction), which protects health (e.g. sexual health) and so overlaps with health promotion

Primary prevention consists of health promotion and specific protection. As stated by Katz and Ather (2009), health promotion measures in relation to STIs include among others, avoiding microorganisms by maintaining hygiene, routine check-up, general sex education, delaying initial sexual debut, whereas, specific protective measures would be using prophylactics (such as condoms) during sex and avoiding sexual promiscuity. Santelli, et al. (1998) reported that early initiation of sexual intercourse in youths is associated with a higher number of lifetime sexual partners and a consequent higher risk of STIs. Therefore, the promotion of delayed sexual debut in this population is the first and critical step in partner reduction and the primary prevention of STIs. Sexual partners in this study include present and past partners and all their partner's partners. Therefore, to achieve the aim of primary prevention of STIs, focus on partner reduction is very important.

Secondary prevention deals with latent diseases and attempts to prevent an asymptomatic disease from progressing to symptomatic diseases (Katz & Ather, 2009). It

aims to detect and treat diseases early. It consists of early diagnosis and promotes treatment to contain the disease and prevent its spread to other individuals, as well as disability limitation to prevent potential future complications and disabilities from the disease. Secondary prevention aims to reduce the impact of a disease or injury that has already occurred. This is done by detecting and treating diseases as soon as possible to halt or slow its progress, encouraging personal strategies to prevent reoccurrence and implementing progress to return people to their original health and function so as to prevent long term problems. Secondary prevention includes procedures that detect and treat preclinical pathological changes and thereby control disease progression.

Tertiary prevention attempts to reduce damage caused by symptomatic disease by focusing on mental, sexual and physical rehabilitation. The sole objective is to maximize the remaining capabilities and functions of an already disabled patient. The goals include preventing pain and damage, halting the progression and complication of the disease and restoring the health and functions of the individual affected by disease (CDC 2007). Tertiary prevention seeks to soften the impact caused by the diseases in the patient's function, longevity and quality of life. In all the levels of prevention so far discussed, human behaviour plays a significant role.

Human behaviour is the collection of behaviours exhibited by human beings and influenced by culture, attitudes, emotions, ethics, authority, rapports, hypnosis, persuasion, coercion (Gochman, 2001). According to Glatz and Maddock (2002) health behaviour refers to the actions of individuals, groups, and organization as well as the determinant correlates and consequences of these actions which include social change, policy development and implementation, improved coping skill and enhanced quality of life. Gochman defined health behaviour as those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive element; personality characteristics, including affective and

emotional states and traits; and overt behaviour patterns, actions, and habits that are related to health maintenance, health restoration and health improvement.

Kasl and Cobb (1986) identified and defined three categories of health behaviour as follows: preventive health behaviour; illness behaviour; and sick-role behaviour. Preventive health behaviour involves any activity undertaken by individuals who perceive themselves to be healthy for the purpose of preventing or detecting illness in an asymptomatic state. This include self-protective behaviour, which is an action intended to confer protection from potential harm, such as avoidance of drug use which may predispose one to casual sex, or wearing a condom during sexual intercourse. Self-protective behaviour is also known as cautions behaviour (Kasl & Cobb, 1986). Illness behaviour involves any activity undertaken by individuals who perceive themselves to be ill for the purpose of defining the state of health, and discovering a suitable remedy. Sick-role behaviour involves any activity undertaken by those who consider themselves to be ill for the purpose of getting well (Kasl & Cobb). It includes receiving treatment from medical providers, a whole range of dependent behaviours, and leads to some degree of exemption from one's usual responsibilities.

There are two dimensions of health behaviour according to Rothman (2000).These dimensions are positive and negative dimensions. When a health behaviour is positive, it is termed healthy, healthful or health enhancing (Ajzen & Fishbein, 1980). Such behaviours include regular medical check-up or using a condom with a new sexual partner. Negative health behaviour is termed risky, unhealthy, health-compromising or impairing health behaviour. Such behaviour includes having casual sex, irregular medical check-up and poor personal hygiene. Behaviour occurs in stages. This is because individuals show varying and complex patterns of change in particular health behaviour over the life course. Take initial sex contact for example, some adolescents may try having sex before marriage while others remain virgins. Some of those who try having sexual intimacy may continue to experiment

while others may not continue. Some of those who continue to experiment may become regular while others may stop. Some of those who become regular may try to quit while others do not. Some of those who try to quit may succeed while others relapse. Some of those who relapse may make further attempts to quit. This process is simplified by defining behaviour stages as adoption or initiation, maintenance, cessation and relapse, conceived of as a series of dichotomous dependent variables.

Preventive health behaviour is classified under positive health behaviour. According to Gochman preventive health behaviours include not only observable, overt action but also the mental events and emotional states that can be reported or measured. Therefore, those actions taken by a person to maintain, attain, or regain good health and prevent illness are termed preventive health behaviour Preventive health behaviour according to Steve (2007) refers to all those things humans do to prevent diseases and to detect diseases in asymptomatic stages. Schlebasch (1990) described preventive sexual health behaviour as what people do in the belief that it facilitates or protects sexual health Preventive health behaviour generally follows from a belief that such behaviour will benefit health (Laaksonen, et al., 2001). For instance, people abstain from sex or use condom to reduce their chances of contracting STIs and invariably avoid early morbidity and mortality. Since prevention entails any activity which reduces the burden of mortality and morbidity from disease, preventive health behaviours can reduce, but may not totally eliminate the chances of contracting infections.

Common preventive health behaviours against STIs as outlined by Laaksonen et al. (2001) includes vaccination, safe sex, personal hygiene, abstinence and protected sex. These preventive sexual health behaviours in one way or the other play a key role in reducing the incidence of sexually transmitted infections.

Sexual Health Behaviour

Sexual health is fundamental to the physical and emotional health and well-being of individuals, and to the social and economic development of communities and countries. Therefore, every individual should be given the right to have knowledge and opportunity to pursue a safe and pleasurable sexual health. This is because the ability of individuals to achieve sexual health and well-being according to the World health Organization (2010) depends on their access to comprehensive information about sexuality, knowledge about the risks they face, their vulnerability to the adverse consequences of sexual activity, their access to good quality sexual health care, and an environment that affirms and promotes sexual health. Therefore, to be sexually healthy, an individual must have informed, enjoyable and safe sex, based on self-esteem, a positive approach to human sexuality, and mutual respect in sexual relations.

Sexuality is a centred aspect of human being throughout life. Human sexuality is constructed through interactions between the individual and the wider society, and its development depends on the expression of basic human needs including intimacy, emotional expression, and love (World Association for Sexual Health, 1999). Sexuality encompasses sex, gender, identities and roles, sexual orientation, criticism, pleasure, intimacy and reproduction (World Health Organization, 2006a). Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships. According to the World Health Organization, sexuality is influenced by interaction of biological, psychological, social, economic, political, cultural, ethical, legal and religious factors.

All the above mentioned factors-biological, psychological, social, economic, political, cultural, ethical, legal and religious factors equally affect sexual health. Sexual health according to the World Health Organization (2006b) is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease,

dysfunction or infirmity. Elaborating on this definition, sexual health requires a positive, respectful approach to sexuality and sexual relationships and the possibility of having pleasurable and safe sexual experiences, free from coercion, discrimination and violence. According to the World Health Organization (2006d) sexual health is the experience of the ongoing process of physical, psychological and socio-cultural well-being related to sexuality. Sexual health could also mean the ability of individuals to enjoy and express their sexuality and to do so free from risk of sexually transmitted infections, unwanted pregnancy, coercion, violence and discrimination.

Therefore, sexual health includes the ability to understand and weigh the risks, responsibilities, outcomes and impacts of sexual actions and to practice sexual abstinence when appropriate. Essential elements of good sexual health as outlined by Adler, French, McNad, Smith and Wellstead (2002) are equitable relationships and sexual fulfillments with access to information and services to avoid the risk of unintended pregnancy, illness or disease. These elements can be attained through showing appropriate preventive sexual health behaviours.

There are certain factors associated with sexual health outcomes. Some of these factors predispose to harm, while some diminish risk. Those factors that predispose to harm are termed risk factors, while those that diminish risk are termed protective. According to Kirby (2002), factors are called protective if they discourage one or more behaviours that might lead to negative sexual health outcomes (e.g., having sex with many partners) or encourage behaviours that might prevent a negative health outcome (e.g., using condom and contraception).

Similarly, factors are labeled ‘risk’ if they either encourage or are associated with one or more behaviours that might lead to a negative sexual health outcome or discourage behaviours that might prevent them. These risk and protective factors shape human sexual

behaviours and can have an impact on sexual health and practice of responsible sexual behaviours. These include biological factors, parents and other family members, schools, friends, the law, and the availability of sexual health services (Miller, Naini & Brewer, 2009). The Center for Disease Control and Prevention (2002), listed the three major risky sexual behaviours to include early onset of sexual activity, non-use of contraceptive and non-use of condom. The four key factors associated with risky sexual behaviours are race and ethnicity; socioeconomic status; social influences; and attitudes toward contraception, condom and safer-sex behavioural skills (CDC).

These factors that influence sexual health equally influence sexual health behaviours. Health behaviour according to Conner and Norman (1996) is any activity undertaken for the purpose of preventing or detecting disease or for improving health and well-being. Health behaviour could be enhancing or impairing. Impairing behaviours have harmful effects on health or otherwise predispose individuals to diseases, while enhancing behaviours protect individuals from diseases (Conner, 2002). Sexual health behaviour is any activity that induces sexual arousal. According to Jha and Thakar (2010) sexual health behaviour is the manner in which sexuality is experienced and expressed. This definition connotes sexual health behaviour to what a person does sexually.

Sexual health behaviour could be risky or protective. Risky sexual health behaviour according to the Centre for Disease Control and Prevention (2010a) is a behaviour that increases one's risk of contracting sexually transmitted infection and experiencing unwanted pregnancies. Risky sexual health behaviours include among others, sex at early age, having multiple sexual partners, changing sexual partners frequently, having sex while under the influence of alcohol or drugs, and unprotected sexual behaviour. Protective or preventive sexual health behaviour is a behaviour that encourages or promotes sexual health. Protective sexual health behaviour reduces one's chances of contracting sexually transmitted infections.

Sexual health of individuals, family and community is undermined by not showing appropriate preventive sexual health behaviour. This in turn, may trigger sexual health problems and challenges. Therefore, effective approach to sexual health promotion should go beyond curative to preventive approach. Sexual health could be attained when individuals have the knowledge, skills and ability to make informed and appropriate sexual health decisions that are capable of protecting their health and that of others.

Sexually Transmitted Infection

Infection according to Farlex (2009) is the invasion and multiplication of microorganisms in the body tissues, especially that causing local cellular injury due to competitive metabolism, toxins, intracellular replication, or antigen-antibody response. The term invasion in the definition depicts that these microorganisms are not normally present within the body. Some of these infectious microorganisms that cause infection include among others, bacteria, viruses and fungi. An infection may or may not cause symptoms. It may remain localized, or it may spread through the blood and lymphatic vessels to become systematic (body wide) (Nathan, 2005). On the other hand, disease is any condition that impairs normal body functions and is therefore associated with the dysfunction of normal homeostasis (Kalling, 2008). Therefore, by way of differentiation, infection is the invasion and growth of pathogenic microorganisms in the body, whether or not body functions are impaired, while disease is any change from a state of health or impaired body functions. Hence, infection connotes contamination while disease is the end result of infection. Based on the differentiation in meaning between infection and disease, sexually transmitted infection (STI) is a broader term than sexually transmitted disease. Therefore STI is preferred for this study.

Sexually transmitted infection (STI) also known as sexually transmitted disease (STD) or veneral disease (VD) is an illness that has a significant probability of transmission

between humans by means of human sexual behaviour, including vaginal intercourse, oral sex, and anal sex. Sexually transmitted infection can also be transmitted non-sexually through breastfeeding, contaminated intravenous (IV) needle and other sharp objects or mother- to-child during birth. According to Trollope- Kumar and Guyatt (2006) sexually transmitted infections are diseases that are passed on from one person to another through sexual contact (including kissing, oral genital contact and use of sexual toys) and sometimes by genital contact. This definition is incomplete because non-sexual means of transmission was not included. Nuwaha (2006) explained that STIs can be passed on sexually via vaginal intercourse, oral sex and anal sex; and non-sexually through the use of unsterilized intravenous (IV) drug needles, from mother to baby during childbirth or breastfeeding and blood transfusion (e.g. HIV, Hepatitis B).

The term sexually transmitted infection (STI) is recently preferred to STD or VD because it has a broader range of meaning. A person may be infected, and may potentially infect others, without showing signs of the disease (Stoppler & Shiel, 2010). The Centre for Disease Control and Prevention (2010a) stated that the term sexually transmitted infection was introduced by public health officials. Although STI and STD can be used interchangeably, they do not actually mean the same thing because infection is different from disease. Disease means that the infection is actually causing the infected person to feel sick (Kallings, 2008).

Kay and Zoulim (2007) stated that the organisms that cause STIs may pass from person to person through blood, semen, vaginal and other body fluids. Sexually transmitted infections are transmitted through two major primary ways. Some infection such as human immunodeficiency syndrome, gonorrhea, Chlamydia and trichomoniasis, are transmitted when an infected urethral or vaginal secretions contact mucosal surfaces such as the male urethra, vagina or cervix (Centre for Disease Control and Prevention, CDC, 2013). In

contrast, according to CDC, genital ulcer infection (such as genital herpes, syphilis and chanchroid) and papillomavirus (HPV) infections are primarily transmitted through contact with infected skin or muscosal surfaces.

Sexually transmitted infections may be caused by viruses, bacteria, parasite or fungi. The Mayor Foundations for Medical Education and Research (2013) grouped the causative agents of STI into four families: Viral family, bacterial family, fungus family, and parasitic family. The Centre for Disease Control and Prevention (2013) grouped sexually transmitted infections under the viral family include among others hepatitis B & C, HIV, genital herpes and warts, and Human Papillomavirus; bacterial family include syphilis, gonorrhea, Chlamydia and chanchroid; parasitic family include scabies, trichomoniasis and public lice; and fungus family-candida. Carlson, Normitz and Stilller (2010) reported that all STIs can be prevented. The preventive measures against STIs include among others consistent and correct use of condom, sexual abstinence, safe sex, long term monogamous relationship (Moges, et al., 2013). Moreover, Oladimeji and Mojisola (2011) identified personal hygiene, safe sex, regular medical check-up and STI screening and test as patterns of preventive sexual health behaviour.

Sexually transmitted infection is one of the health problems confronting adolescents globally. It was initially termed sexually transmitted disease or veneral disease. Sexually transmitted infections, though a current health issue, have been in existence for years. The first well- recorded European outbreak of what is now known as syphilis occurred in 1494 when it broke out among French troops besieging Naples (Daniel, 2012). Sexually transmitted infection can be caused by virus, bacteria, fungi, and parasites.

Common symptoms of STIs according to the Mayor Foundation for Medical Education and Research (2013) include vaginal discharge; abnormal vaginal bleeding; discharge from penis, sore ulcer, rash or lump that appear on the penis or around the vagina, vulva, anus,

painful urination, and swelling of the groin glands. Amoran, Onadeko and Adeniyi (2005) stated that a woman who has an STI may bleed when she is not menstruating, or have abnormal vaginal discharge. Vaginal burning, itching, and odour are common symptoms of STI in women, as well as pelvic pain when having sex. Other general symptoms of STI as outlined by the Capital Women's Care (2012) are fever, chills, skin rashes over large parts of the body, arthritis like pains or aching in the joints, and throat swelling and redness that lasts for three weeks or longer.

Acquired Immunodeficiency Syndrome (AIDS) caused by HIV is the single largest cause of mortality in present day sub-Saharan Africa (Stopppler, 2012). Experience has shown that majority of HIV infections are acquired through unprotected sexual relationship between partners, one of whom has HIV. In Nigeria, the prevalence rate of HIV among adults (ages 15-49 years) is 0.9 per cent (Capital Womens' Care, 2012). The U.S Department of Health and Human Service (2009), opined that youth and young adults in Nigeria are particularly vulnerable to HIV, with young women at higher risk than young men. Risk factors that contribute to the spread of HIV include prostitution, high-risk practices among itinerant workers, high prevalence of sexually transmitted infections, clandestine high-risk heterosexual and homosexual practices; international trafficking of girls and women and irregular blood screening.

One may ask why youths are particularly vulnerable to STIs. Habef (2009) asserted that it could be biological, behavioural or cultural reasons. This is because majority of youths are sexually active and young age at first initial sexual intercourse is a strong risk factor for STIs as revealed by Habef. Younger youth's (15 – 19 years) immature reproductive and immune system make them more vulnerable to infections by various STI agents (Family Planning Association, 2013). As stated by Habef, adolescents, especially young girls, are less able to refuse sex and, or less able to insist on adequate protection. Moreso, conditions such

as poverty, homelessness, political strife, and dislocation are increasingly common among young people in developing countries. As asserted by Babalola, (2005) these conditions are associated with sexual abuse and sexual intercourse exchange for money or support for basic needs. Dallabetta (2008) explained that it could be because young people are ill informed about STIs, their symptoms, patterns of prevention, the need for treatment, and where to obtain treatment. Combined with adolescents' fear of the medical system, these circumstances often result in avoidance and delays in seeking health care. Delay in seeking health care and untreated STIs result in increased susceptibility of HIV infection.

Sexually transmitted infections can be prevented through preventive sexual health behaviour. There are different patterns of preventive sexual health behaviour; it includes primary and secondary prevention. Primary prevention is the key in addressing incurable STIs, such as HIV and herpes. Moges, et al. (2013) revealed that the most effective way to prevent sexual transmission of STIs is to avoid contact with body parts or fluids which can lead to transfer with an infected partner. Proper use of condoms reduces contact and risk. Although a condom is effective in limiting exposure, some disease transmission may occur even with condom (Kenny, 2005).

Male and Female condoms only provide protection when used consistently and properly as a barrier, and only to and from the area that it covers. Uncovered areas are still susceptible to many STIs. Proper usage of condoms according Daniel (2012) entails: not putting the condom too tight at the end, leaving 1.5cm (3/4 inch) room at the tip for ejaculation; avoiding inverting, spilling a condom once worn; avoiding condoms made of substances other than latex, polysoprene or polyurethane that do not protect against HIV; avoid the use of oil lubricants with latex condom, as oil can eat holes in them; and avoid wearing condom too loose.

Vaccination is another preventive measure against STIs, such as hepatitis B, and some types of HPV. Stoppler and Shiel (2012) explained that vaccination before initiation of sexual contact assures maximum protection. Researchers had hoped that nonxynol would decrease STI risk. Trials, however, according to Daniel (2012) have found it ineffective and it may put women at a higher risk of HIV infection.

Alter (2003) listed STI prevention methods to include abstinence, use of male condom, female condom, vaginal spermicidal sponges and diaphragms, condoms an N -9 vaginal spermicidal, rectal use of N-9 spermicidal, no barrier methods, surgical sterilization and hysterectomy. According to Alter, the most reliable way to avoid transmission of STIs is to abstain from sexual intercourse (i.e. oral, vaginal or anal sex). The second most reliable is to be in a long-term mutually monogamous relationship with an uninfected partner. Comprehensive sex education including education on importance of abstinence, contraception and condoms in preventing STIs also play a significant role in preventing STIs (Cohen and Tate, 2006)

Patterns of prevention

Pattern is a design or guide, which appear among people. According to Horrnby (2000) pattern is the regular way in which something happens or is done. Pattern has to do with any set of conventional principles and expectation that is binding on any person who is a member of a particular group. Webster (1981) defined patterns as a reliable sample trait, acts, tendencies, or other observable characteristics of a person, group, or institution (e.g. a behaviour pattern). This last definition relates pattern to behaviour. Patterns of sexual behaviour could be preventive or curative.

Preventive sexual health behaviour patterns depict a positive and respectful approach to sexuality and sexual relationships. It also connotes the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence. Therefore, those

behaviours that promote sexual health are termed preventive sexual health behaviour. These behaviours take different forms and patterns. Preventive sexual health behaviour patterns according to Wellings, Wadsworth, Johnson, Field, Whitaker and Field (2008) include among others, condom use, sexual abstinence, STI screening and treatment, vaccination and keeping a long-term monogamous relationship with an uninfected partner.

Sexual abstinence is a way of refraining from some or all aspects of sexual activity. This statement depicts that one can practice complete abstinence or incomplete abstinence pattern. Therefore, there are two patterns of sexual abstinence: complete abstinence and incomplete abstinence patterns. People abstain from sex for various reasons. According to Donovan (2010), the reason could be medical, psychological, legal, social, financial, philosophical, moral or religious. Common reasons for practicing sexual abstinence according to Capital Women's Care (2013) include among others, health reasons (to prevent undesired pregnancy or sexually transmitted infection); psycho-sociological reasons (e.g. clinical depression, social anxiety disorder, increased testosterone in males, or negative past experiences); circumstantial reasons such as incarceration or geographical isolation, sublimation, religious or philosophical.

As reported by Nicolina (2008), sexual abstinence may be indulged in voluntarily as a result of social circumstance or legally mandated. It is voluntary when an individual chooses not to engage in sexual activity due to moral, religious, philosophical or health reasons. Moreover, sexual abstinence could be said to be a social circumstance when one cannot find a suitable sexual partner. In countries where sexual activity outside marriage is illegal, abstinence is said to be mandated. No matter the reasons for abstinence, it helps to prevent the transmission or contraction of sexually transmitted infections among youths.

Nicolina (2008) further revealed that one of the most effective ways to prevent the transmission of sexually transmitted STIs is through sexual abstinence. To promote the

adoption of sexual abstinence among adolescents, some countries like United States of American run abstinence programmes for teens. It was one of the preventive sexual health behaviour patterns adopted by the Uganda's government (Cohen and Tate, 2006). Abstinence programmes focus upon the importance of abstinence until marriage.

Sexual abstinence has social, psychological and health gains (Sabia, 2006). Some of the health gains of sexual abstinence as stated by Trenholm, et al. (2008) include prevention of STIs and unplanned pregnancy with their attendant consequences and complications. To promote the adoption of sexual abstinence as a pattern of preventive health behaviour to sexually transmitted infection there is need for abstinence education.

Abstinence education according to Kohler and Munadi (2008) aims at increasing STI and HIV knowledge, strengthening behavioural beliefs, supporting abstinence, and increasing skills to negotiate abstinence and resist pressure to have sex. Gultmacher Institute (2009) explained that abstinence education teaches abstinence as a way of avoiding sexually transmitted infections, and other associated problems. Based on the aim of abstinence education and what it teaches as highlighted by Kohler and Munadi; in the above, abstinence education should be paramount in sex education. Therefore, curriculum planners should take note.

Safe sex is another pattern of preventive sexual health behaviour. It is simply called protected sex. Safe sex involves practices intended to prevent the transmission of body fluids, especially semen. Therefore, safe sex practices provide protection from sexually transmitted infections. To appreciate the importance of safe sex, it is pertinent to consider the effects of unsafe sex. Unsafe sex behaviours are those that violet norms and expose individuals to risk, injury or loss (Family Health International, 2003).

Unsafe sexual behaviours include unchecked sexual activity, having multiple sexual partners, pre-marital sex, unprotected sex and unplanned sex (Family Health International,

2003). According to Center for Disease Control Prevention (2010b) unsafe sex includes unprotected sexual activity, first intercourse at lowered age, having multiple sex partners, pre-sexual and pre-marital affairs, and non use of contraceptives. The health effects of unsafe sex among youths as identified by Stoppler (2012) are STIs and unwanted pregnancy. To curb the dangers of unsafe sex, there is need to adopt safe sex practices. Such practices include condom use, maintaining faithful monogamous relationship and delaying initial sex contact (Nolen & Waiters, 2008).

Condom is a flexible sheet, usually made of thin rubber or latex, designed to cover the penis during sexual intercourse for contraceptive purposes or as a means of preventing sexually transmitted infections. The above definition depicts condom as a contraceptive. It serves dual purposes: prevention of pregnancy and STIs. There are two types of condom, male condom and female condom. Male condom consists of a disposable one-time-use tube-shaped piece of thin latex. It is a barrier that prevents sperm and other seminal fluid from entering the woman's uterus (or coming in contact with sex partner). It is also used in anal sex to prevent STIs. Male condoms are available in a wide variety of sizes, styles, textures, and colours. A female condom is a similar device, consisting of a loose-fitting polyurethane sheath close at the end and is inserted intra-vaginally before sexual intercourse.

According to Alter (2003) condom is used for protection against STIs and as a contraceptive. When condom is used correctly and consistently, though it does not guarantee 100 per cent protection, it greatly reduces the risk of getting STIs (The Patient Education Institute, 2010). The above statement portrays condom use as a preventive measure against STIs. Hatcher, et al. (2004) reported that youths who engaged in sex can decrease their risk of pregnancy and STIs by using contraceptives more effectively and consistently and by combining use of a condom with use of a hormonal contraceptive method. Condoms are the most effective contraceptives for preventive STIs (Bupa Health Information Team, 2011).

Though condom use decreases adolescent's risk of contracting STIs, Njua, Mwakalo and Mushi (2013b) reported that sexually active adolescents practise risky sexual behaviours, with a low proportion of condom use. This low proportion of condom use among adolescents may be due to some barriers to condom use. Nolen and Waiters (2007); Toroitich (2014); and Ochueng, Kakai and Abok (2011) identified these barriers to condom use among adolescents as myths, misconceptions, and suspicious of condom's accuracy in the protection of sexually transmitted infection. Other identified barriers include cost, the belief that condom reduces sexual pleasure, less discussion of condom with partners, and fear of partner's reaction if adolescents initiate condom use (Brown, DiClemente, Crosby, Fernadze, Murphy, 2008). Alcohol and drug use also play a role in altering the condom use intentions (Alter, 2003).

To motivate youths to engage in preventive sexual health behaviours, measures that counter these barriers to condom use should be encouraged. Such measures should include access to free condoms, counteracting the misconception surrounding condom use, its efficacy, and the belief that it reduces sexual pleasure. Adolescents should also be encouraged to avoid the use of drugs and alcohol, since their use may utter condom use intentions. Nolen and Waiters (2008) observed that personal knowledge about STIs, influence of significant others or peers; perceived vulnerability and self-efficacy in regards to condom use were primary motivators to condom use.

Another pattern of preventive sexual health behaviours is delaying initial sexual contact. Early initiation of sexual behaviour is viewed as a health risk. According to Nkansah and Agbanu (2011), youths who initiate sexual behaviours at an earlier age, spend relatively more years as potential risk persons for HIV. Moreover, they are exposed to a range of other sexually transmitted infections when compared to those who are not sexually active until a later point. The study carried out by Lohman and Billings (2008); and Magnusson, Masho and Lapane (2011) found that among a sample of female high school students, aged 13 to 19

years, having vaginal intercourse before 15 years was associated with high risk-taking sexual behaviour. These high risk-taking behaviours such as not using a condom, unplanned intercourse due to substance use, having a casual partner, and having multiple sexual partners increase the chance of contracting STIs.

de Carvalho, Naval-Silver and Ramos (2006) and Pettifor, O' Brien, MacPhial, Miller and Rees (2009) opined that earlier sexual initiation was associated with STIs transmission. Njua, Mwakola and Mushi (2013a) found an association between early initiation of sexual activity and STIs. The above study findings revealed that early initiation of sexual activities expose adolescent to STIS. To curb this, there is need to delay initial sexual contact to a later age, since earlier sexual initiation carries serious implications for STI risk.

Theoretical Framework

The Theory of Reasoned Action

The theory of reasoned action was developed by Fishein and Aizen in 1967 (Morisky, 2002). It was derived from previous research that began as the theory of attitude and it is one of the three classic persuasion models of psychology. The theory aims to explain the relationship between attitudes and behaviours within human action. The theory of reasoned action is used to predict how individual will behave based on their pre-existing attitudes and behavioural intentions. For instance, an individual's decision to engage in particular preventive sexual health behaviour is based on the outcomes the individual expects will come as a result of performing the behaviour.

The theory of reasoned action serves majorly to understand an individual's voluntary behaviour and the ideas have to do with an individual's basic motivation to perform an action. According to the theory, intention to perform certain behaviour precedes the actual behaviour. This intention is known as behavioural intention and is important to the theory

because these intentions are determined by attitudes, behaviours and subjective norms (Colman, 2015). The theory of reasoned action suggests that a stronger intention leads to increased effort to perform the behaviour, which also increases the likelihood for the behaviour to be performed.

Fishbein, et al. (1991) described the theory variables and their definitions as follows; **Behaviour:** A specific behaviour defined by a combination of four components; action, target, context and time (e.g. implementing STI risk prevention strategy (action) by abstaining from sex or using condom with a commercial sex worker (target) in brothels (context) every time (time). **Intension:** the intent to perform behaviour is the best predictor that a desired behaviour (abstinence) will actually occur. Both attitude and norm influence one's intention to perform behaviour. **Attitude:** A person's positive or negative thinking toward performing the defined behaviour (abstinence). **Behavioural beliefs**: They are combination of a person's belief, regarding the outcome of a defined behaviour (abstinence) and the person's evaluation of the potential outcome (STI free). **Norms:** A person's perception of other people's (teachers, parents, role models) opinion regarding the defined behaviour (preventive sexual health behaviour) and the person's willingness to conform to those views.

The profounder, Ajazen and Fishbein, suggested two factors that determine behaviour: attitude and subjective norms. An attitude is a person's positive or negative opinion toward performing a defined behaviour (e.g. abstinence), while a subjective norm is a person's perception of significant other's (teachers, parents, role models) opinion regarding the defined behaviour and the person's willingness to conform to those views. A subjective norm describes the social pressure an individual feels to perform or not to perform the behaviour at hand. Therefore, based on TRA, attitudes and subjective norms determine behavioural intention and behavioural intention leads to performing the defined behaviour.

The TRA theorist notes that there are three conditions that can affect the relationship between behavioural intention and behaviour. The first condition is that the measure of intention must correspond with respect to their level of specificity. This means that to predict a specific behaviour, the behavioural intention must be specific. The second condition is that there must be stability of intention between time of measurement and performance of behaviour. The intention must remain the same between the time that is given and the time that the behaviour is performed. The third condition is that the degree to carry out the intention is under the volitional control of the individual. The individual always has the control of whether or not to perform the behaviour. As revealed by Ajazen (1992), the theory of reasoned actions profounder, Fishbein and Ajazen (1975) pointed out that a person's intention remains the best indicator that desired behaviour will occur. Thus from the theory of reasoned action perspective, the likelihood that an individual will practice preventive sexual health behaviours depends on the person's positive opinion toward performing these health behaviours (correct and consistent use of condom, abstinence etc) and the person's perception of significant others' (peers, teachers, parents, role models) opinion regarding these health behaviours. Several other studies on sexual behaviour especially among youths applied the TRA. For instance, Roggers, et al. (2002) and Doswell, Braxter, Chia and Kim (2011) indicated that youth's belief about sex, values, attitudes and the intention were the most important factors related to sexual behaviours.

The theory of reasoned action can explain preventive sexual health behaviours in that youths' behavioural intention to engage in these behaviours is influenced by their pre-existing attitudes and subjective norms. For instance if youths evaluate prevent sexual health behaviours as positive (attitude), and if they think their significant others want them to perform the behaviour (subjective norm), this will result in higher intention (motivation) and they are more likely perform the behaviour. See appendix B for TRA diagrams.

The Theory of Planned Behaviour

The theory of planned behaviour was proposed by Icek Ajazen in 1985 through his article "from intention to Actions: A theory of planned behaviour (Ajazen 1985). The theory was developed from the theory of reasoned action, which was propounded by Martin Fishbein and Icek Ajazen in 1975. This theory was propounded based on the proof by Ajazen that behavioural intention cannot be the exclusive determinant of behaviour where an individual's control over the behaviour is incomplete. Ajazen introduced the theory of planned behaviour by adding a new component, perceived behavioural control.

Perceived behavioural control is a function of control beliefs in just the same way a subjective norm is a function of control beliefs. It is assumed to have a direct influence on intention. Greater perceived behavioural control should lead to stronger intention for desirable behaviour (Redding et al. 2000). For instance; if intention to avoid STIs is high, showing adequate preventive sexual health behaviours may be affected, but, if the intention is low, the behaviours may not be practised adequately (Gollmitzer, 2008). Intension may also provide direct predictive effect on patterns of preventive sexual health behaviours through these mechanisms. Firstly, by holding intention constant, for instance, an individual with higher perceived behavioural control is likely to try harder and persevere longer in sticking to a particular pattern of preventive health behaviour than an individual with lower perceived behavioural control. Secondly, people may have accurate perception of the amount of actual control they have over the pattern of preventive health behaviour. Studies have shown that intention is influenced by three major variables: subjective norms, attitudes, and self-efficacy (Quellette & Wood, 2008). With regard to this study, it is assumed that tertiary institution students in Imo State can persevere longer in showing adequate preventive sexual behaviours if they have higher perceived behavioural control.

Perceived behavioural control originates from self-efficacy construct proposed by Bandura in 1977 which came from social cognitive theory. According to Bandura (1977), expectations such as motivation, performance and feelings of frustration associated with repeated failures determine effect and behavioural reaction. Bandura separated expectations into two distinct types: self-efficacy and outcome expectancy. He defined self-efficacy as the conviction that one can successfully execute the behaviour required to produce the outcomes. The outcome expectancy refers to a person's estimation that a given behaviour will lead to certain outcomes. Bandura stated that self-efficacy is the most important precondition for behavioural change, since it determines the intention of coping behaviour.

The key variables of theory of planned behaviour are: behavioural belief and attitude toward the behaviour; normative belief and subjective norms; control belief and perceived behavioural control; and behavioural intention and behaviour. Behavioural belief refers to an individual's belief about consequences of a particular behaviour, it is based on the subjective probability that the behaviour will occur. Tertiary institution students' belief that preventive sexual health behaviour will prevent them from contracting STIs will help them practise these behaviours. On the other hand, the attitude toward behaviour is an individual's positive or negative evaluation of self-performance of the particular behaviour. The students of the study will practise preventive sexual health behaviour if they believe they can.

Normative belief is an individual's perception of social normative pressure, or relevant others' belief that he or she should not perform such behaviour. Subjective norm is an individual's perception about the particular behaviour, which is influenced by the judgement of significant others. Tertiary institution students in Imo State, may not show preventive sexual health behaviours if they believe their significant others did not want them to practise these behaviours but will do so if their significant others' have positive opinion about these behaviours.

Control belief is an individual's belief about the presence of factors that may facilitate or hinder performance of the behaviour. Perceived behavioural control is an individual's perceived ease or difficulty in performing the particular behaviour. The likelihood that youths of this study will practise preventive sexual health behaviours depends on how much they are convinced that these behaviours' benefits (good sexual health status) outweigh the barriers (cost, convenience, availability).

Behavioural intension is an indication of an individual's readiness to perform a given behaviour (preventive sexual health behaviours). Behavioural intension is based on attitude toward the behaviour, subjective norm, and perceived behavioural control, with each predictor weighted for its importance in relation to the behaviour and population of interest. Behaviour as explained by Bandura (1977) is an individual's observable response in a given situation with respect to a given target. Tertiary institution students in Imo State will show preventive sexual health behaviours only when their perceived control for these behaviours is strong .See appendix C for TPB diagram.

AIDS Risk Reduction Model (ARRM)

The AIDS Risk Reduction Model (ARRM) was propounded in 1990 by Catania, Kegeles and Coates. The AIDS Risk Reduction Model provides a framework for explaining and predicting the behaviour change efforts of individuals, specifically in relation to the sexual transmission of HIV and AIDS and other STIs. AIDS Risk Reduction Model is a three stage model. It incorporates several variables from modern behavioural change theories, including Health Belief Model (HMB), Efficacy Theory, and Emotional Influence, and Interpersonal Processes. Catania, et al. (1990), listed the three stages, as well as the hypothesized factors as follows:

The first stage is recognizing and labeling one's behaviour (unprotected sex) as high risk. The hypothesized influences under this stage include: knowledge of sexual activities associated

with HIV (and other STIs) transmissions; believing that one is personally susceptible to contracting HIV and other STIs; believing that AIDS and other STIs is undesirable; and social norms and networking. Tertiary institution students can reduce their chances of contracting STIs if they recognize their high risk sexual behaviours.

The second stage involves making a commitment to reduce high-risk sexual contacts and to increase low risk activities. The second stage hypothesized influences include: cost and benefits (e.g. can I be able to abstain from sex, if yes? What are the gains, enjoyment (e.g. will abstinence or use of condom affect my enjoying sex?); response efficacy (e.g., will the changes successfully reduce my risk of contracting HIV and other STIs); self-efficacy; and knowledge of the health utility and enjoyability of a sexual practice, as well as social factors (group norms and social support) are believed to influence an individual's cost and benefit, and self-efficacy beliefs. Tertiary institution students can make a commitment to reduce high-risk sexual contacts and to increase low-risk sexual activities.

The third stage is broken into three: information seeking, obtaining remedies; and enacting solutions. Depending on the individual, these may occur concurrently or some phases may be skipped. The third stage hypothesized influences include social networks (peer group association) and problem-solving choices (self-help, informal and formal help); prior experiences with problems and solutions; level of self-esteem; resource requirements of acquiring help; ability to communicate verbally with sexual partner; and sexual partner's beliefs and behaviour. For instance, an individual who has resolved to reduce high risky behaviour invariably may begin to seek information on preventive health behaviour or measures to STI. The information will help the individual to discover various patterns of preventive health behaviour that will greatly reduce his/her chances of contracting STIs. Tertiary institution students in Imo State should be encouraged and helped to seek adequate information on preventive sexual behaviours so as to avoid STIs and other related disease

Catania, Kegeles and Coates (1990) identified other internal and external factors that may motivate individual's movement across stages. For instance, aversive emotional state (e.g., high levels of distress over HIV and AIDS and other STIs, alcohol and drug use that blunt emotional stress) may facilitate or hinder the labelling of one's behaviour (abstinence or condom use). External motives such as public education campaigns, an image of a person dying from AIDS, or informal support group (social network) may also cause a youth to examine and potentially change his or her sexual activities by adopting adequate preventive sexual health behaviour patterns. Report on studies show that AARM has been applied to studies on preventive health behaviours with respect to prevention and modification of unhealthy lifestyles, and different risky health behaviours. See appendix D for AARM diagram.

Health Belief Model (HBM)

The Health Belief Model (HBM) is the most commonly used theory in health education and health promotion (Glantz, et al. 2002; National Cancer Institute (NCI), 2003). It is a psychological model that attempts to explain and predict health behaviour by focusing on the attitudes and beliefs of individual. According to Glanze, et al., Health Belief Model is one of the first models that adapted theory from behavioural science to health problems and has the largest history of the theories reviewed. According to Redding, et al. (2000), HBM remains one of the most widely used theoretical frame works for understanding behaviours. Health Belief Model is influenced by the theories of kurt, Lewin which state that it is the world of the perceiver that determines what an individual will and will not do (Hochbaun, 1958; Rosenstock Stretcher & Becker, 1988). Originated in 1952 with Hochbaun's study on factors underlying decision-making for early detection of tuberculosis (TB), it is generally regarded as the beginning of systematic theory-based research in health behaviour (Janz & Becker, 1984).

According to Janz and Becker (1984), the HBM prepared by Houchbaun presented only four key variables: perceived susceptibility, perceived severity; perceived benefits and perceived barriers. Jeja (2002) stated that the adoption of appropriate behaviour to the prevention or control of some diseases and infections depends on the individual's perception of a threat to personal health and the conviction that the recommended action will reduce the threat. Practically, the model is based on the understanding that a person will take a health-related action if that person; feels that a negative health condition (STIs) can be avoided; has positive expectation by taking a recommended action; believes that he or she can successfully take a recommended health action (condom use, abstinence), and beliefs the benefits of reducing the threat of the condition exceed the cost (convenience) of taking actions.

Janz and Becker (1974) added cues to action; modifying variables, and self-efficacy to the original four components of HBM. Health belief from Janz and Becker point of view is based on the idea that an individual must be willing to participate in health interventions and believe that being healthy is a highly valued outcome. According to Rosenstock, et al. (1988), self-efficacy was added to address the challenges of habitual unhealthy behaviour such as sexual risky behaviour. For instance, STIs including HIV and AIDS have negative health consequences. The desire to avoid the consequences of STIs including HIV and AIDS can be used to motivate sexually active adolescents to adopt any pattern of preventive health behaviour against STIs such as practicing safe sex, not sharing sharp objects with people, and sexual abstinence. But, such practices can be avoided, ignored or overlooked if the adolescent believes that he or she cannot be able to practice any of the preventive health behaviour patterns. The students should be encouraged to avoid the consequences of STIs by adopting healthy preventive sexual practices.

Perceived susceptibility is the first construct of HBM. Susceptibility of personal risk is one of the most powerful perceptions in motivating people to seek for professional advice

from a health personnel on a health issue they consider themselves susceptible to. The greater the perceived risk, the greater likelihood to adopt preventive health behaviour pattern which will decrease the risk. Perceived susceptibility simply is one's subjective perception of the risk of contracting a health condition. Perceived susceptibility is what prompts men who have sex with fellow men to accept being vaccinated against hepatitis B (De wit, Vet, Schutten & Van Steenburgen, 2005) and to use condom in an effort to decrease their susceptibility to STIs and HIV infection (Belcher, Sternberg, Wottski, Halkitis & Hoff, 2005). It motivates people to participate in preventive health programmes (Chen, Fox, Cantrell, Stockdale & Kagama- Singer, 2007). Imo State tertiary institution students should be encouraged to believe that they are highly susceptible to STIs, so as to show adequate preventive sexual health behaviours.

It is only logical that when people believe they are at risk for a disease, they will likely seek information to prevent it from happening or to be better equipped when it happens. Unfortunately, the opposite also occurs. When people believe they are not at risk or have a low risk of susceptibility, they tend to turn deaf ears or they become indifferent to preventive health education programmes or information.

Experience has shown that perception of increased susceptibility is linked to participation in preventive health programmes, and decreased susceptibility to indifferent attitudes towards available preventive health information. However, this is not always the case. Among youths, perception of susceptibility is rarely linked to application of preventive health knowledge or information. Lewis and Malow (2007) reported that although youths consider themselves at risk of STIs because of their unsafe sexual behaviours, they still do not practice safer sex (Lewis & Malow, 2007). Perception of susceptibility explains health information applies in some situation but not in all. When perception of susceptibility

combines with perception of severity, it results in perceived threat (Stretcher & Rosenstock, 1997).

The second HBM construct is perceived severity which is an individual's belief about the seriousness or severity of a disease. The perception of severity is often based on medical information or knowledge, it may also come from belief a person has on the difficulties a disease would create or the effects it would have on his or her life in general. For instance, most Nigerian youths view STIs as relatively minor ailments which cannot kill a clever adolescent. Students of this study can show adequate preventive sexual behaviour if they are convinced to believe the seriousness of the health implications of STIs.

A perceived benefit is a person's opinion of the value or advantages of the alternative course of action including the extent to which it reduces the risk of the disease (STIs) or the severity of its consequences. People tend to make use of preventive health information or participate in preventive health education and promotion programmes when they believe this will decrease their chances of developing a disease (STIS). Perceived benefits may play an important role in the adoption of secondary preventive behaviours such as STIs screening. Imo state tertiary institution students will definitely show adequate preventive sexual health behaviours if they are motivated to believe these behaviours will reduce their chances of contracting STIs.

Perceived barriers (or perceived cost) refers to the perceived disadvantages of adopting the recommended pattern of preventive health behavior, as well as, perceived obstacles that may prevent or hinder its successful performance. This is an individual's own evaluation of the obstacles (e.g. peer influence) in the way of adopting a pattern of preventive sexual health behaviour. Barriers relate to the characteristics of preventive measures, which may be inconvenient, expensive, unpleasant, painful, or upsetting. For instance, a youth who resolves to regularly visit health care centres for medical check-up may not be able to achieve

this if the location of such medical centres are far from his residential home and if the services are not affordable. That is to say, perceived barriers interfere with patterns of preventive health behaviour. Therefore, to successfully adopt any pattern of preventive health behaviour, the benefits have to outweigh the barriers involved. Of all the constructs of HBM, perceived barriers are the most significant in determining behaviour change (Janz & Becker, 1994). Tertiary institution students in Imo State should be helped to overcome the barriers that may hinder them exhibit adequate preventive sexual health hehaviours. They should be encouraged to see the benefits of the recommended courses of actions while minimizing barriers. See HBM diagrams on appendices E and F.

Theoritical Studies

Factors that Influence Patterns of Preventive Health Behaviour

Patterns of preventive health behaviours are influenced by many factors. According to the U.S. National Institute of Health (2008), religion, culture and tradition are the three major factors that influence patterns of preventive health behaviour. Other factors identified by the US National Institute of Health include peer and parental pressures, education, mass media and family background. Hulton, et al. (2000) asserted that knowledge of sexually transmitted infection risk and fear for pregnancy influence pattern of preventive sexual health behaviours among youths.

Centre for Disease Control and Preventive (2012) grouped factors there affect sexual (preventive) health behaviours into four, namely: individual, relational, community, and societal. Individual risk factors include among others alcohol and dry use, exposure to sexually explicit media, delinquency, early sexual initiation, coercive sexual fantasies, hostility towards women and adherence to traditional gender role norms. The relational factors include childhood history of physical, sexual and emotional abuse, emotional unsupportive family environment, poor parent-child relationship, association with sexually aggressive, hyper-masculine and delinquent peers. Centre for Disease Control and Prevention

stated poverty, lack of employment opportunities, lack of institutional support from police and judicial system, general tolerance of violence within the community, and weak community sanctions as community factors that influence preventive sexual behaviours. Moreover, Tharp, et al. (2013) enumerated the societal factors to include among others, societal norms that support sexual violence, male superiority, male sexual entitlement, maintenance of women's inferiority and sexual submissiveness, weak laws and policies related to sexual violence, gender inequity; and high levels of crime and other forms of violence.

Social norms, stigma and stereotypes based on gender, race and age influence patterns of preventive sexual health behaviours (Sabia, 2006). Alan Gultmacher Institute (2009) identified parent-adolescent communication, poverty, political strife including displaced population, peer pressure, media pressure, gender inequalities and cultural expectation as factors that influence pattern of preventive health behaviour. The Albama Women's Centre (2012) grouped the factors that influence pattern of preventive health behaviours into five, namely; individual factors, economic factors, policy factors, societal factors and organizational factors.

Agha, et al., (2006) enumerated the individual factors as knowledge and awareness, attitude, motivation and intentions, belief and perceptions, and skills. Economic factors include among others, funding of health services and socio-economic status (Agha, et al., 2006). Explaining more on these factors, Trenholm et, al. (2008) noted laws and regulations, including age consent and legal access to condom as policy factors that influence pattern of preventive health behaviour. Tinuola (2006) stated societal factors that influence preventive sexual health behaviours include among others, community or peer norms regarding safe sex, broad social attitude, accessibility to services due to location. The structure, function and services provided by an organization, the organization's ability to sustain preventive health

programmes, and availability of condom were outlined by Adebiyi and Asuzu (2008) and Kohler and Munachi (2008) as organizational factors that influence patterns of preventive health behaviour. These factors; gender, peer pressure, parental pressure, age among others, shall be discussed in details below.

Gender influence on patterns of preventive health behaviour.

The Patient Education Institute (2010) explained gender as the range of physical, biological, mental and behavioural characteristics pertaining to, and differentiating between masculinity and feminity. This depicts that gender is the amount of masculinity or femininity found in an individual. Despite the fact that the terms, gender and sex can be used interchangeably, the term sex is the biological make-up of an individual's reproductive anatomy while gender is an individual's lifestyle, personal identification or roles. Gender is used to describe those socially and culturally determined characteristics in individuals while sex refers to the biological characteristics that define humans as male or female.

Gender roles are social and behavioural norms that are generally considered appropriate for either males or females in a social or interpersonal relationship. Therefore, gender roles for males and females vary greatly from one culture or social group to another. Gender role stereotype can have both positive and negative effect on youths. For instance, if the stereotype describing a sex group is negative, it could have negative effect on that sex group's pattern of preventive sexual health behaviour and vice versa.

According to Etuck, Ihejiamaizu and Etuck (2004), the main effects of gender-role stereotypes on individuals are conformity and self-concept. Conformity implies working in line with the expectation of the society while self-concept refers to one's view on how he thinks of oneself, estimate of one's abilities and sense of control over one's life (Underwood, Hachonda, Serlemitsos & Bharath – Kumar, 2006). Generally, gender-role stereotype tend to have negative effects on females while it favours males in a number of ways (Luke, 2003).

Agha, et al. (2006) observed that cultural expectations place a lot of burden on adolescent girls and thus, affect their pattern of preventive sexual health behaviour. For instance, in some societies it is a cultural taboo for females to initiate any safe sex practice while it is not a taboo for males.

The Department of Health and Human Services (2010) reported that among youths, males are more likely to report condom use than their female counterparts. The finding of the study conducted by Njau, Mwakalo and Mushin (2013b), revealed that more males use condoms than females. This observation is probably linked to the fact that males are generally more mobile and have sexual health information more than females. Tolli (2012) explained that this is partly because males are more exposed to the concepts, have more confidence than females, and can openly discuss about their sexual lives.

The females' disadvantaged social, economic, cultural and legal status as affirmed by Luke (2003), contribute to restrictions of access to affordable quality sexual health services, unequal access to education and information, lack of control over patterns of preventive sexual health decision-making, insufficient protection of ethnic rights including the right to informed decision making, privacy, confidentiality, dignity, respect and choice. These gender stereotypes influence patterns of preventive sexual health behaviours among females. Godeau, Gabhainn and Vignes (2008) noted that adolescent girls face double discrimination as a result of their gender. For instance, adolescent girls may not like to visit sexual health care centres because it suggests sexual activity or presence of STI. Lohman and Billings (2008) reported that the low status of Nigerian adolescent girls and strict social norms regarding their sexuality deprive them of taking preventive sexual health actions.

Writing further on the influence of gender on patterns of preventive sexual health behaviour, the World Health Organization (2008); Adebiyi and Asuzu (2009); Babalola (2005); and Agweda, Dubua and Eromonsela (2013) submitted that adolescent girls' less

economic autonomy, males control over decision-making regarding sexual encounter and use of contraceptives have negative influence on the preventive sexual health behaviours of girls. Gender disparity in preventive sexual negotiation skills may explain the discrepancy of frequency of reported condom use between males and females (Badalona, Awasum & Quenum-Renaud, 2002; Njau, et al., 2006).

Parental pressure influence on patterns of preventive sexual health behaviour

Parents exert great influence on youths directly and indirectly. This significance influence of parents is exerted on youths in several ways. Advocates for Youth and Sexuality Information and Education Council of the United States (2007) and Fraser (2007) explained that youths at earlier age are most likely to seek information about sex from their parents and that nearly 80 per cent of them reported that what their parents have told them and what their parents might think influence their preventive sexual health behaviour. The more adolescents are satisfied with the mother-child relationship, the less they are to be sexually active (Kirby, 2007), while poor parent–child relationships are associated with depression in youths (Whitaker & Miller, 2000). This may lead to frequent alcohol use, which is strongly linked with early sexual activity. In the case of adolescent girls, East and Khoo (2005) submitted that estrangement at home often leads adolescent girls to seek and establish intimate relationship outside the family, seeking the warmth and support they lack at home.

Literature supports the hypothesis that open parental communication with children about sex will deter involvement in risky behaviours. Forehand, Miller, Dutra and Chance (2007) and Manlon (2003) revealed that the quality of parent-adolescent relationship has been linked to good self-control, high resistance efficacy, and less adolescent risk taking behaviour. That is to say that good parent-adolescent communication promotes preventive health behaviour among adolescents. In parent-adolescent relationship, demographic characteristics are important variables. Social norms, stigma and stereotypes based on gender,

age and race are likely to influence the view and communication behaviour (Forehand et al, 2007). For instance, parents who grew up in a society where abstinence until marriage is the order of the day would tend to pressurize their adolescents to stick to abstinence. In general, older children according to MaCphail and Campbell (2001) are less likely than younger adolescents to confide in their parents. For instance, older adolescents are more likely to discuss sensitive topics with peers instead of parents. More so, females have been shown to exhibit greater self-disclosure to parents and peers than males (Fraser, 2007). This observation is attributed to cultural values, and can influence sexual preventive health behaviours of these youths.

Maguen and Armistead (2006) indicated that parents sexual attitude and parent – adolescent relationship quality encouraged abstinence among adolescents. Youths' preventive sexual behaviour may be promoted by parents stressing the importance of communicating clear parental sexual attitudes, and highlighting the significance of the parent-adolescent relationship. Whitaker and Miller (2000) also looked at the complex relationship among parent-youth communications, peer norms and behaviour. They found that communication about sex was related to condom use. The findings of the above authors also reveal that condom use, peer norm, and behaviour relationship were moderated by parental communication for both males and females. Therefore, lack of parent-youth communication may lead youths to turn to peers, who may in turn influence their patterns of preventive sexual health behaviour.

Peer pressure influence on pattern of preventive sexual health behaviour

Peer pressure is reported to be one of the strongest influences on youths' behaviour. Research on risk- taking by youths by Gander and Steinberg (2005) supported the theory that peer influence plays an important role in explaining behaviour. This is supported by the findings of Maguen and Armistead (2005) that the odds of an adolescent engaging in sex is 2

to 4 times higher if same –sex closest friend is sexually active. In the same vein, if a youth's closest friend adopts any pattern of preventive health behaviour, it invariably motivates the friend to adopt the same behaviours. This supports the adage that says ''birds of the same feathers flock together''.

Peer influence more strongly predicts behaviour during adolescence than in adulthood. In a study involving young persons (adolescents and youths) as respondents, parents and peers were found to be of equal influence for younger youths, while of less influence for older youths (Adebiyi & Asuzu, 2009). According to Fraser (2007) peer group attitude about sex influences the attitudes and sexual behaviour of youths. Fraser also found out that younger youths (15 to 18 years) get information on sexual health issues from their peers. Therefore, peer pressure exerts a huge influence on pattern of preventive sexual health behaviour among youths.

Age influence on patterns of preventive sexual health behaviour

Age plays a significant role on patterns of preventive sexual health behaviours. According to Trenholm, et al. (2008) age influences not only the acquisition of information and knowledge but also the application of such information and knowledge. Variables influencing patterns of preventive health behaviour such as knowledge, mass media, and peer pressure interact with age. According to the Tanzanian Demographic and Health Survey (2010); Exavery, Lutambi, Mubyaiz, Kweka, Mbaruku and Masanja (2011) and Njua et al (2013) the likelihood of actual preventive sexual health behaviour was higher among older youths (24 to 34 years old) than their younger counterparts (15 to 23 years old). This observation can possibly be due to the knowledge differences regarding transmission and prevention of sexually transmitted infections because of longer exposure to sensitization messages on ways of preventing them.

Underwood, et al. (2006) affirmed that increase in age is associated with increase in self-confidence. Therefore, increase in age increases the likelihood of exhibiting or adopting different patterns of preventive health behaviours. To support this, the study carried out by Luke (2003) showed that the use of condom among youths increases with age. It was observed by Bearman and Bruckner (2001) that younger youths shy away from initiating safe sex patterns due to lack of confidence.

In many sub-Saharan African countries, adolescent girls' lack of negotiating power in sexual relationships is influenced by the large age difference common in many relationships, (Luke, 2002; Slap, Lot, Huany, Daniyam, Zink & Succop; 2003; Etuck, et al., 2004). To curb this, early marriage and sexual initiation should be discouraged. Franzetta, Terry-Humen, Manlove and Ikramullah (2006) reported that the youths who initiate sex at a younger age, show lower level of all the patterns of preventive sexual health behaviour, putting them at greater risk of contracting STIs.

The Centre for Disease Control and Prevention (2000) observed that preventive health behaviour decision-making among youths differ by age. For older youths, (age 24 to 34 years) STI risk and pregnancy were the primary influences while parents, teachers and religion advisors were the primary influences on younger adolescents (ages 15 to 23 years). Therefore, for older youths to adopt preventive sexual health behaviour, much is expected from health educators and other health personnel (Magnani, et al., 2002). They are expected to plan and execute youth friendly programmes that will educate and encourage youths to adopt preventive sexual health behaviour. On the other hand, since parents, teachers and religious advisors are the primary influences on younger youths, they should not fail in their role in communicating preventive health behaviour effectively with them (Magnani, et al.).

Denominational influence on patterns of preventive sexual health behaviour

Religious beliefs are one of the factors that influence behaviour. In fact, it is one of the major factors that influence behaviour (U.S National Institute of Health, 2008). Adolescent religiousity has been associated with delayed sexual involvement (Rostosky, Regnerus and Wright, 2003). In Christian religion, there are diverse denominations. These denominations uphold different doctrines and views about same issue.

In some denominations, anything outside sexual abstinence till marriage is not encouraged, while in some, sexual abstinence, safe sex and other preventive health behaviours are acceptable (Daniel, 2014). Youths' moral life is usually influenced by religion (Rostosky, et al., 2003). Therefore, religious beliefs on sex influence adolescents' pattern of preventive health behaviour. The study carried out by Agha, et al. (2006) revealed that female Protestants were more likely than their catholic counterparts to report condom use. This report can partly be explained by the fact that the Lutheran church generally has a more flexible stand on condom use than Catholics.

Knowledge influence on patterns of preventive sexual health behaviour

It is a common assumption that knowledge influences behaviour positively but studies revealed that this can be true if the person appreciates the knowledge and if the perceived benefits of the knowledge outweigh it's perceived barriers (Magnani, et al. 2002). Therefore, knowledge can promote positive behaviour if such knowledge is applied correctly.

Reports from previous studies (Pettifor, et al. (2009): de Carvalho, et al. (2006); and Lohman and Billings (2008) revealed that youths have some knowledge on sexuality and patterns of preventive health behaviour. According to Agha, et al. (2006), 48.8 per cent of youths aged 15 to 19 years and 78.3 per cent of youths aged 20 to 24 years in Imo State knew that diseases could be transmitted during sexual intercourse. Similarly, 71.8 per cent of these youths knew that STIs could be prevented by use of condom, abstinence, not sharing sharp objects and by blood screening before transfusion.

Agweda, et al. (2010) established that there is a gap between youths' knowledge of STIs and preventive health behaviour. This discrepancy between knowledge of STIs and preventive health behaviour may be associated with certain characteristics common to sexual behaviour among youths. Such characteristics as engaging in impulsive sexual behaviour, feeling of less vulnerable to STI risks and disaster, sexual exploration and implementation, peer pressure in the area of sexuality, and reliance upon peers as a source of information, despite the wealth of accumulated sexual health knowledge, can still lead to risk of STIs.

Some studies by Macphail and Campbell (2001); Hulton, et al. (2000); and Magnani, et al. (2002); reported that the disparity between knowledge regarding STIs and preventive health behaviours is such that many youths, despite knowing the risks associated with unprotected sexual activities, still engage in these activities. Few studies suggested that knowledge of risk is a more protective factor against risky sexual activities among females in tertiary institutions than males, with fear of unplanned pregnancy providing a greater deterrent for females than males (Gregson, et al., 2002; Slap, et al. 2003).

Economic influence on pattern of preventive health behaviour

Patterns of STI prevention such as STI screening and test, consistent condom use, vaccination and transfusion of screened blood require finances. Sabia (2006) asserted that money is a strong motivator which is capable of spurring individual youths to willingly perform preventive health behaviour. Therefore, when a youth is financially capable, he/she may seek STIs preventive health care services.

Parent's economic status influences youth's preventive behaviour. The World Health Organization (WHO) and UNAIDS (2000) reported that poor and low income of parents put their youths at a particular risk of HIV and other STIs. This is particularly true of females. For instance, the girl child may trade sex for money or rely on "sugar daddies' for economic needs and thus expose themselve to STIs risk.

Empirical Studies

Sexual health knowledge, attitude and practice among youths

Oladimeje and Mojisola (2011) carried out a study on perceptions about sexual abstinence and knowledge of HIV and AIDS prevention among in-school youths in a Western Nigerian City. The objectives of the study were to determine the sexual abstinence behaviour of in-school youths; factors promoting or obstructing the adoption of abstinence by in-school youths. A total of 420 respondents (52% males and 48% females) aged 10-19 years were used for the study. The design adopted for the study was a descriptive cross-sectional survey. Descriptive statistics of means and standard deviation were used to answer the research questions while inferential statistic of chi-square was used to test the hypotheses.

Independent variables considered in the study were age, gender, parent's level of education and religion. The findings of the study revealed that most of the respondents, 87.8 per cent knew the cause and preventive measures of HIV. Again more respondents in the 12-15 years of age bracket abstained from premarital sex compared with those aged 16 - 19 years. This finding was attributed to older youths being more vulnerable to extraneous factors such as peer and media influences, lack of parental control and development of secondary sexually characteristics. The findings of this study also revealed higher abstinence rates in comparison with the findings of the 2005 National HIV and AIDs and Reproductive Health (NARHS) survey. This contradiction could be due to the respondent's young age compared with the NARHS survey which had respondents in the 20 and 24 years age group. The findings which also revealed that fewer males than females were abstaining from premarital sex was consistent to the findings from the NARHS survey that showed a higher prevalence of sexual intercourse among the males (Federal Ministry of Health Nigeria 2005).

Another study carried out by Catania, et al. (2000) determined the patterns of preventing HIV and other STIs among youths. Cross-sectional survey was adopted for the study. The study population consists of 19,681 out of which 960 respondents were drawn. The

instrument for data collection was a structured questionnaire. Mean and chi-square were used for data analysis. The findings revealed that 91 per cent of the respondents were sexually active. The findings further revealed preventive measures against HIV and other STIs as condom use, not sharing of sharp objects such as needles and razors, sexual abstinence, long term monogamous relationship and health care seeking. The authors recommended among others, the delay of initial sexual contact among youths to a later age.

Sabia (2006) carried out a study on influence of sex education on sexual health behaviour among in-school youths. The design adopted for the study was survey. The sample for the study was 105 respondents. The instruments used for the study were interview and structured questionnaire. Frequency and chi-square were used to analyze the quantitative data, while content analysis and ethnographic summary were used for analyzing the qualitative data. The patterns of preventive health behaviour among youths as revealed by the findings include personal hygiene, condom use (though not consistent), monogamous relationship and sexual abstinence. The findings also reveal education, knowledge and peer influence as factors that influence health behaviour. Sex education is reported to exert great influence in promoting preventive health behaviour among youths of the study.

A study on the knowledge, attitude and practice of condom use among youths was conducted by Ochueng, et al. (2011). Descriptive survey design was adopted for the study. The population comprised all the senior secondary school students in Nyanza Province. Out of this population, a sample size of 600 respondents was drawn. Percentage and chi-square were used to analyze the data collected. The findings of the study revealed that though youths knew the efficacy of patterns of preventive health behaviour in preventing STIs, they still indulge in risky sexual behaviours. This finding is attributed to youth's characteristics such as age, feeling of less vulnerability, and sexual exploration

Okonta (2008) carried out a study on adolescents' sexual and reproductive health. Descriptive survey research design was adopted for the study. The sample for the study consisted of 1178 adolescent girls in Rivers State (aged 10-19 years) and 1013 adolescents in Delta State (aged 12 to 19 years). The instrument for data collection was structured questionnaire. Percentage, mean t-test and ANOVA were used to analyze the data. The findings revealed high incident rate of STIs among the respondents. This finding is attributed to high level of unsafe sexual behaviour among respondents. The findings also showed that 42.1 per cent of the sexually active youths had experienced STI and that among females aged less than 17 years, 19.8 per cent had symptomatic Candida and 11.1 per cent had trichomonas infection. Out of the 1013 respondents from Delta state, 83.4 per cent reported having vaginal discharge. Furthermore, the findings revealed that only 6.2 per cent of the respondents used condom and males only.

Jomeen and Whitfield (2010) conducted a survey on teenage sexual health knowledge, behaviour and attitudes. The problem addressed by this survey was "why the high rate of teenage sexual health problem". Does it mean the teenagers did not have adequate knowledge on sexual health or they did not show positive attitude towards the acquired knowledge? The sample size drawn for the study was 1484 respondents. The instrument for data collection was structured questionnaire. A cross-sectional survey design was adopted for the study. The obtained data were analyzed using SPSS version 17. The key finding of the study was that girls and boys used different information sources. This has clear implications for the development of sexual health promotion.

The findings also revealed that the respondents' knowledge on sexual health increased proportionately in line with sexual activity. That is, sexually active teenagers were more knowledgeable than those who were not sexually active. Therefore, there is need for sexual health education for teenagers that have not experienced sexual activity. The findings further

revealed that boys had greater interest in knowing about the potential consequences of high-risk sexual behaviour. Alcohol and drug use, and 'being judged' or 'being seen entering' as reported by the respondents in relation to accessing sexual health services were some of the factors that deterred them from seeking for sexual health care services. Jomeen and Whitfield (2010) recommended among others, that there should be increased focus on sexual health promotion; that health education programmes should promote safe sex activities, as well as acknowledge and address different maturating factors for boys and girls; and that survey providers should be aware of the key barriers for young people in accessing specialized sexual health services.

Trajman, et al. (2008) conducted a cross-sectional study on knowledge about STD and AIDS, and sexual behaviour among high school students. The study population included all the students in 10 public and private high schools in Rio de Janeiro, Brazil, out of which a sample size of 945 was drawn. Data were obtained on socio-demographics, knowledge of STD and AIDS, and sexual behaviour using a structured questionnaire. The t-test was used to compare mean while the chi-square test was used to compare proportions. Level of significance was set at 0.05. The findings revealed that although 94 per cent reported being aware of the need for preventive sexual health behavior as protection, only 34 per cent indicated that they always practiced safe sex patterns during sex. The findings further revealed that low family income was associated with unsatisfactory knowledge and inconsistent safe sex practices. However, the findings revealed that unsatisfactory knowledge was not associated with inconsistent safe sex practices. Recommendations among others was that school-based educational programmes focusing on sexual behaviour more than on transmission of knowledge, as well as targeting low-income students should be planned for the students.

Ruiker (2013) carried out a study to determine the knowledge, attitude and practices of undergraduate students with respect to STIs and preventive behaviour. The design adopted for the study was a cross sectional survey design. A structured questionnaire was used to generate data. Frequency, percentages and t-test were used for data analyses. The sample size for the study was 279. The findings indicated that the majority of undergraduates had low to moderate levels of STI knowledge while HIV related knowledge was found to be much better. Males showed relatively more acceptance for people with STI, while females expressed more negative feelings. This result is attributed to fear of pregnancy and STIs. The findings further revealed that majority of students in science performed better than other students on the aspect of knowledge but showed negative attitudes and poor practices. The findings also revealed that the students' knowledge about STIs was found to be incomplete, as well as major concerns regarding student's preventive sexual practices. The author recommended among others, specific interventions for the age group in this study, as well as need based planning and integration of the youth in the sexual health programme planning and implementation.

Fonck, Mulai, Ndinya-Achola, Bwago and Temmerman's (2002) study on health seeking and sexual behaviours among primary health care patients adopted a cross-sectional survey design. The sample size consists of 555 respondents. The instrument for data collection was a structured questionnaire. Mean, t-test and ANOVA were adopted for data analysis. The findings revealed that women's knowledge about health in general and STIs in particular was poor. A major gender difference in delay of health seeking for STIs was revealed by the findings. The authors recommended strengthening health education and health promotion, as well as improving screening test for STI detection.

In an empirical study carried out by Pinder-Butler, Fankson, Hanna, Mahase and Roberts (2013) on HIV and AIDS knowledge and sexual behaviour patterns, survey design

was adopted. Three hundred and fifty-four high school students served as the sample size. The core problem of the study was to examine the sexual behaviour patterns of subjects under study in relation to their knowledge of HIV and AIDs. The instrument for data gathering was a structured questionnaire. The methods for statistical analysis were percentages, means and Statistical Package for Social Sciences (SPSS). The findings revealed that most (88%) students identified sexual intercourse as a mode of HIV transmission. Abstinence was identified as a method of HIV prevention by 54.1 per cent of the respondents. Eighty-five per cent of the respondents also knew that condom use was a method of prevention for sexually transmitted infections. The study's conclusion was that junior high school students have fairly accurate knowledge of HIV and AIDS but misconceptions regarding transmission were still prevalent. Patterns in gender variation were fair. Highlighting the promotion of abstinence and delayed sexual activity in HIV and AIDS programmes; implementing a national strategy that can assist youths living in single parent homes to delay the onset of sexual activity; and government focusing on prevention programmes were recommended among others, by the authors.

Kopele and Shumba (2011) carried out a study to determine the sexual behaviour and attitudes of youths toward safe sex. To achieve this, survey design was adopted by the study to investigate the sexual behavior of the tertiary students toward safe sex; their knowledge towards safe sex; and the preventive measures the respondents use to protect themselves from sexual infections. The population for the study was 362 second year psychological students out of which a sample size of 30 respondents was drawn.

The instruments used for the study were both questionnaire and interviews. The data were analyzed using percentages, and SPSS version 7. The findings revealed that majority (67% of male and 33% of female) of the participants have had more than 2 sexual partners in their lives; and 68 per cent of male participants had engaged in risky sexual behaviours under

the influence of drug or alcohol. The findings further revealed that despite the availability of condom, some university students have not changed their sexual behaviours and attitudes towards safe sex. Recommended among others, were the use of therapeutic intervention; (that would make the students unlearn the behaviour) and integration of the health care unit and students counseling unit for the purpose of changing students behaviour toward unsafe sex.

Walsh and Ward (2010) in their study on magazine reading and involvement of young adult's sexual health knowledge efficacy and behaviour used a sample size of 579 undergraduates. The respondents comprised of 69 percent females and 31 percent males. The age range was 16-26 years. The instrument use for the study was questionnaire the data was analyzed using frequency, percentages and t-test. Findings showed that females scored significantly higher than males in sexual health knowledge and behaviour. The conclusion of the study was that magazine reading can improve sexual health knowledge of college students.

Jodati, Nourabadi, Hassanzedeh, Dastgiri and Sedaghat (2007) conducted the study titled impact of education in promoting the knowledge of and attitude to HIV/AIDs prevention: A trial of 17,000 Iranian students. The aim of the study was to assess the impact of an educational course on knowledge and attitude of students regarding HIV/AIDS prevention in Tabriz, Iran. The educational sessions were co-ordinated by fellow students. Data for the study were collected by self-assessment techniques using a validated questionnaire. The sample size was 17,000. Each group of the education programme had 20-40 students. The educational programme consisted of 45 minutes interactive discussion on preventive strategies and modes of transmission of HIV. The Likert scaling method was used to measure sexual health knowledge and sexual health behaviours of students both before and after intervention.

The findings revealed that there was a significant increase in sexual health knowledge and sexual health behaviours of the study subjects regarding HIV/AIDS prevention. The pre intervention score as revealed by the finding was 80 percent and the post intervention sexual health knowledge score was 90 percent. On the other hand, the finding revealed pre intervention score on sexual health behaviours as 40 percent and post intervention score as 55 percent. Although a significant increase in knowledge and behaviours was observed in both male and female students, female students showed more preventive sexual health behaviours than males. The females also performed better than males in terms of study objectives. This indicated that female students paid more attention to prevention and they are more alert than males to the disease. The improvement of sexual health knowledge and sexual health behaviours after the educational programme was significant in all age groups

Kirby, Laris and Rolleri (2007) carried out a study on the impact of sex and HIV education programs in schools and communities on sexual behaviours among young adults. The objectives were to determine the impact of curriculum based sex and HIV-education programs on sexual risk behaviours, STDs and pregnant rates, and on mediating factors such as knowledge and attitudes, and to identify characteristic of those curriculum-based programs that were effective in change of sexual risk behaviours. The studies used for the study were those that used respondent aged 9-24 years. The research methodology included: an experimental or quasi-experimental design with both intervention and comparions group and pre-test and post-test data; had a sample size of at least 100 persons; measured programs impact upon one or more of the outcomes listed below; and measured impact on behaviours that can change quickly. A total of 83 studies were included. Most of the studies reviewed revealed that more males than females have had sex.

The perception of the risks of sexual activity and their consequences among Uganda adolescents was carried out by Hulton, Cuhben and Khalokho (2000). The purpose was to

provide program-related information about their behaviours, motivations, and perceptions of risk with regard to pregnancy and HIV transmission. The sample size was 3,342. Interview and questionnaire were used for data collection. Mean and t-test were used for data analysis. The finding revealed that knowledge of safe-sex behaviours and reported behaviours had little in common and that the fundamental barriers to behavioural change lied within the economic and socio-cultural context that molded the sexual politics of youths. The finding also showed that knowledge of STIs risk and fear for pregnancy influenced sexual behaviours positively. Males' lack of responsibility for the outcome of their behaviour was identified by the study as an important barrier to improved sexual health. The study recommended the need to explore ways by which young women (youths) might achieve status and identity, and acquire material resources by means not-related to their sexuality.

Measures of Preventing sexually transmitted infections.

Envulado, et al., (2013) carried out a study on social factors associated with teenage sexual behaviour: A risk factor for STI and HIV among female youths. The study adopted survey design. The study population included all the 9,716 youths residing in the community of study. From the population, a sample size of 349 was drawn. A semi-structured interviewer administered questionnaire was used for the study. The socio-demographic characteristics considered in the study included age, religion, marital status and educational level. The data was analyzed using SPSS version 17 statistical software. Chi-square was used to test for significant association at 0.05 level of significance. The findings revealed that more youths were getting involved in risky sexual behaviour and these risky sexual behaviours, the findings revealed, predisposed the teenagers to STIs including HIV and AIDS. The findings further revealed that only about half of the youths admitted using condom as a preventive measure for STI, though not consistent.

Atere, et al. (2010) carried out a study on awareness of STIs and contraceptive use among out of school youths in Nigeria. The study adopted a survey design. The sample size for the study was 210 respondents. Questionnaire was the instrument used for data collection. The descriptive statistics of mean was used in answering the research questions, while the inferential statistics of t-test and ANOVA were used to test the hypotheses at 0.05 level of significance. The result showed high awareness level of STIs and HIV but low level of contraceptive practices among the majority of out-of-school youths in the study area. It was also found that many of out-of-school youths engaged in risky sexual behaviour such as unprotected sexual intercourse which exposes them to STIs.

The findings revealed age as one of the youths' characteristics associated with health behaviour. The findings also revealed that youths that have been exposed to sexual intercourse were mostly youths that were not living with their parents; not present in school; of single parents; and those from polygamous families. This shows that parental pressure positively influences patterns of preventive health behaviour.

Kissinger, Kovacs, Anderson-Smits, Schmdit and Hembling (2012) carried out a study on patterns and predictors of HIV and STI risk. Longitudinal and cross-sectional survey designs were adopted for the study. Environmental and cultural factors by partner type and condom and cultural factors by partner type and condom use were explored longitudinally and in cross-sections. The sample for the study was 125. The instruments used for the study were interview and HIV/STI test. The data was analyzed using frequency, mean and t-test. The findings revealed that sex with female sex workers and multiple partners decreased, sex with main partner and abstinence increased, while the number of causal partners remained stable. The finding also showed that consistent condom use was highest with female sex workers, lowest with main partner and midrange with no trends over time. The finding revealed condom use and abstinence as preventive sexual health behaviours that were

adopted by the respondents in this study. The findings also revealed that STI morbidity was low. No HIV was detected. Drug use and high mobility were associated with inconsistent use with female sex workers, whereas having family in the household was protective. The authors recommended that HIV/STI prevention should focus on drug use.

Dominique and Megan (2010) conducted a study on patterns of sexual behaviour and condom use among high school and university students in Butare and Gutarama, Rwanda. The problem the study addressed was why the gender differentials in sexual behaviour and condom use? The sample size was 3,013 students aged 15-24 years. Percentages, means, z-test and ANOVA were used for data analysis. The instrument for data collection was a reproductive health survey conducted in October-November 2000 among secondary school and university students in Butare and Gutarama. The findings revealed that less than half (45%) of males and 16 per cent of females aged 15-24 years reported being sexually experienced. The finding was attributed to the socio-economic status of the females in the study. The findings further revealed that nearly half of males (46%) and 71 per cent of females reported condom use. The authors recommended among others, the need for reproductive health programmes targeted at youth, especially those who are not yet sexually active, to help maintain high levels of abstinence and encourage condom use.

Hensel and Fortenberry (2013) carried out a multidimensional study on model of sexual health and prevention behaviour. The study was a longitudinal cohort study. The sample size for the study was 387 females aged 14-17 years. The instruments for data collection were both questionnaire and interview. The data was analyzed using, frequency, percentage and t-test. The findings revealed that greater sexual health was significantly associated with sexual abstinence, as well as with more frequency non-coital and vaginal sex. The findings further show condom use at least sex, a higher proportion of condom protection events, and use of hormonal and other methods of absence of sexually transmitted infections

(STI) were associated with greater sexual health. The conclusion of the study was that the totality of sexual health dimensions is significantly linked to a wide range of outcomes, including sexual abstinence, condom use and absence of STI. Recommended among others, was the need for primary prevention of STI and promoting positive sexual development.

Bozicevic, et al. (2006) conducted a study on patterns of sexual behaviour among young people in Croatia. The problem of the study was to describe the relationship between sexual behaviour and the distribution of risks to sexually transmitted infections (STIs). Cross-sectional probability based household survey was used for the study. The sample size for the study was 1093 respondents aged 18-24 years. Questionnaire was used as the instrument for data collected. The methods of data analysis were frequencies, percentages and means. The findings revealed that more than 80 per cent of young people know that the correct use of condom protects against STIs but only 59 per cent young men and 52.4 per cent young women reported the actual use of condom to protect themselves against STIs. This shows that gap exists between knowledge of condom use and actual use of condoms. Recommended among others, were immediate need to strengthen sexual health education and the necessity for further development of other broad-based interventions to prevent adverse sexual health outcomes among young men and women.

In the study conducted by Messersmith, Kane, Odebiyi and Adewuyi (2004) on patterns of sexual behaviour and condom use descriptive survey design was adopted. One thousand, one hundred and forty-nine respondents was used as sample size for the study. The instrument on sexual behaviour, condom use, knowledge of and experience with sexually transmitted diseases (STDs), knowledge of AIDs, and socio-demographic characteristic was structured questionnaire. Mean and chi-square were used to analyze the obtained data. Results indicated that educational level, number of lifetime sexual partners, and the experience of an STD were significantly and positively associated with the use of condoms to

prevent STDs. The findings also revealed that number of lifetime sexual partners and educational level were also positively linked to the experience of an STD. Recommendations among others, included planning for STDs and AID prevention programmes in Nigeria.

Magnani, et al. (2002) in their study on reproductive health risks and protective factors among youths in Lusaka, Zambia aimed at two objectives. One was to identify risk and protective factors for behaviours that expose Zambian youths to risk of HIV infection. The other objective was to assess whether research finding from the United State concerning protective factors in "high-risk" environments might apply to other settings. A community-based sample of 238 youths aged 10-24 years were used for the study. Interview was employed as the instrument for data collection. Multivariated statistical methods were used to isolate risk and protective factors for selected sexual and contraceptive behaviours. Seven categories of factors were considered: socio-demographic factors, sexual-reproductive health knowledge and perceptions, non-sexual risk behaviours, peer influence, connections with parents and social institutions, and communication with sexual partners.

The findings revealed that a sizeable number of factors were associated with each outcome. Only two factors, school attendance and knowledge of AIDs, were associated with both lower levels of sexual activities and consistent use of condoms. The finding also showed that only engaging in higher-risk social activities with close friends was a risk factor for lower levels of sexual activities and consistent use of condoms. The effects of the other factors considered varied by outcome and gender as revealed by the findings. Strong influence of peers was observed in the finding, but connection with parents and social institution did not emerge as protective as revealed in the finding. The conclusion of the study was that because of the number and diverse nature of factors influencing adolescent sexual behaviours, it is unlikely that a single intervention will be found to immediately change the sexual risk-taking behaviours in Zambia.

Slap, et al. (2003) conducted a study on sexual behaviour of adolescent in Nigeria: Cross sectional survey of secondary school students. The objective was to determine whether family structure (polygamous or monogamous) is associated with sexual activity among school students in Nigeria. The design adopted for the study was cross sectional survey with two stages, clustered sampling design. The sample for the study was 4,218 students aged 12-21 years but the response from 2,705 students were used for the analysis. This indicated that not all the distributed questionnaires were collected and used. The return rate was 64.1 per cent return rate. The variables of interest included sexual history, age, sex, religion, family type, educational levels of parents, having a dead parent, and sense of connectedness to parents and school.

The instrument for data collection was a structured questionnaire. Chi-square, Wilcoxon's rank sun and t-test were used to identify association between sexual intercourse, family polygamy and each of the independent variables at 0.01 level of significance. Stepwise logistic regression was used to test the hypothesis that family polygamy is independently associated with sexual activity at 0.05 level of significance.

The finding revealed that sexual activity was more common among students from polygamous families than students from monogamous families. The finding also revealed that sexual activity was less common among female than male students. The finding on influence of age on sexual behaviours showed that the mean age of sexual initiation was 14.8 years. Older age but not less of class in school was associated with sexual activity. The study conclusion is that programme planners in Nigeria could be helped by the study findings to tailor prevention strategies to the needs of in-school adolescents.

A study on condom use among undergraduates in Osun State, Nigeria: Implication for sexually transmitted infections (STIs)/HIV prevention was conducted by Asekun-Olarinmoye and Oladele (2009). The purpose of the study was to assess the knowledge, attitude and

practice of condom use among undergraduates in Osun State, Nigeria with a view towards highlighting areas needing closer attention but in interventional strategies and policy formulation. The population for the study was 13,057. A sample size of 403 was used for the study. The instrument for data collection was a structured questionnaire. Frequency and chi-square were used for data analysis. Gender, age and year of study were the independent variables studied.

The finding showed that awareness of condom was highest for male-type condom (92.4%), while only 36.2% of the respondents were aware of the female-type condom. Significantly higher percentage of males used condom than females. This finding was attributed to socially sanctioned gender roles or responsibilities in the culture of the study group. The culture placed males in a state of being in charge in sexual issues, while females were more or less placed in a state of passive sexual partners. The finding also revealed that level/year of study was statistically significantly associated with support for condom use, while it was not significantly associated with sexual behaviour and condom use. The respondents in the lower levels of study were more likely to support condom use than those in the higher level of study as showed by the finding. The respondents in age range 15-29 years were revealed to be the most sexually active group by the study finding. Moreover, age was found to be statistically significantly related to both support for condom use and actual use of condoms during sexual intercourse.

The study conclusion was that undergraduate youths had a high level of awareness of condom use as a pattern of preventive of sexual health behaviour. Moreover, gap existed between support for condom use and eventual use of condoms. The study recommended among others, health education programmes geared towards addressing reasons/ misconceptions that constitute barriers to consistent use of condom; increasing the ability

skill of females in negotiating condom use; and influencing their partner's wish to use condom for the target group.

Prata, Vahidnia and Fraser (2005) study on gender and relationship difference in condom use among 15-24 years old in Angola use aimed at identifying the determinants of condom use among Angolan adolescents and young adults. The study employed a sample size of 1,995 sexually experienced youths, aged 15-24 years. The instrument for data collection was derived from the 2001 knowledge, attitudes and practices survey in Luanda, Angola. Logistic regression analysis was used for data analysis.

The result of the study showed that for both males and females, consistent condom use was positively associated with higher levels of education, as well as, believing that condoms did not diminish sexual pleasure. The finding also revealed that females who equated condom use with lack of trust were less likely to use condom consistently. Males who believed that condoms were safe and those who had multiple sexual partners were found more likely to use condoms consistently. The conclusion is that intervention programmes aimed at less educated and semi-urban, and unemployed young people should be part of an effective HIV-prevention strategy. Such programmes must address misconception among youths about condom use and the need for protection from HIV and other STIs.

Underwood, Hachonda, Serelmistos and Beharatth-Kumar (2006) conducted a study on reducing the risk of HIV transmission among adolescents in Zambia: Psychological and behavioural correlates of reviewing a risk reduction. The purpose was to evaluate phase 1 of a theoretical informed media campaign designed by youths in Zambia to encourage their peers to adopt risk-reduction practices to protect themselves from STIs. Helping Each other Act-Responsibly Together (HEART) was used to collect data. Separate sample baseline and follow-up designs were made to evaluate phase 1 of the HEART. The baseline survey had a

sample of 368 male and 533 female adolescents; the 2000 follow-up survey comprised 496 male and 660 female adolescents.

The result revealed that controlling for age, sex, educational attainment, and urban or rural residence, logistic regression analyses demonstrated, that compared with non-viewers, campaign viewers were 16.1 times more likely to report primary and secondary abstinence and 2.38 times more likely to have ever used condom. The finding also showed that increase in age was associated self confidence in STIs prevention.

A multidimensional model of sexual health, a sexual and prevention behaviour among adolescent women was conducted by Hansel and Fortenbery (2013). The objective was to empirically operationalize a multi-dimensional model of sexual health and to evaluate its association to different sexual/ prevention behaviours. The study adopted longitudinal cohort study design. A sample size of 387 adolescents aged 14-17 years was used for the study. Second order latent variable modeling (AMOs/19-0) was used to evaluate the relationship between sexual health and dimensions, as well as, used to analyze the effect of sexual health to sexual/ prevention outcomes. The finding showed that all first order latent variables were significant indictors of sexual health. Greater sexual health was significantly associated with sexual abstinence, as well as with more frequent non-coital and vaginal sex, condom use at least sex, a higher proportion of condom-protected events, use of hormonal and other methods of pregnancy control and absence of STIs. The finding also revealed that males had more sexual partners, as well as indulged in sexual activities more than females. The study conclusion is that regardless of a young person's experiences, sexual health is an important construct for promoting positive sexual development and for primary prevention.

A study on multiple sexual partners and condom use among 10-19 years-olds in four districts in Tanzania: what do we learn? was conducted by Exavery, et al. (2011). The study adopted survey design and a sample size of 612 adolescents were used for the study. Data

from the cross-sectional household survey on maternal, Newborn and Child Health (HNCH) that was done in Kigoma, Killombero, Rufiji and Ulanga districts, Tanzania in 2008 was used. The data was analyzed using frequency and percentages to answer the research questions and chi-square and t-test to test the hypothesis. Multivariate logistic regression model was finally used to assess the effect of multiple sexual partners and condom use. The finding showed that condom use among adolescents in the four districts in Tanzania was not associated with multiple sexual partners. The finding revealed that age group and district of residence were associated with condom use. The likelihood of condom use and other preventive sexual health behaviours as revealed by the finding was higher among older adolescents (15-19 years –olds). This finding was attributed to the possibly knowledge differentials about transmission and prevention of STIs, as the older adolescents may have had longer exposure to sensitization messages. The finding also showed that the prevalence of multiple sexual patterns was similar among the younger and older adolescents. This is probably linked to the fact that both are on the transition into adulthood, thus experiencing much of physical, emotional and psychological changes. They are also influenced by peer behaviours. The finding revealed that male adolescents were times more likely than females to report multiple sexual partners. This finding shows that female adolescents are more likely than their male counterparts to engage in preventive sexual health behaviours.

The conclusion is that a notable number of adolescents were engaged in sexual activity and few use condoms probably due to limited knowledge on safe sex, cultural norms and unfriendly environment for condom accessibility. Recommended among others, were prioritizing the expansion of coverage of adolescent reproductive health services need, and emphasizing condom use during every sexual encounter among the younger and older adolescents.

Okpani and Okpani (2000) conducted a study on sexual activity and contraceptive use among female adolescents- a report from Port Harcourt Nigeria. The study adopted survey research design and a sample of 768 single senior secondary school girls were used for the study. Frequency and percentages were used in analyzing the data.

The finding showed that 210 pregnancies (24 deliveries and 186 induced abortions) had occurred in 142 out of 605 girls (78%) who admitted being sexually exposed. The mean, modal and youngest ages of initiation into sexual activity were 15.04, 15 and 12 years respectively as revealed by the study finding. The finding further revealed that at the time of the survey 190 girls (24.7%) were sexually active and 74.2 per cent of their male consorts were older working men. This finding suggests financial gain as a motive for girls' sexual activity. Other findings were high awareness (72.4%) of the relationship between sexual activity and sexual transmitted diseases; low level (56%) of knowledge of effective contraceptive methods, and limitation of contraceptive method use by sexual active girls. The study recommended that active efforts to promote sexuality education and contraceptive use should be intensified among Nigerian adolescents.

The study on pattern of risky sexual behaviour and associated factors among adolescents of the University of Port Harcourt, Rivers State, Nigeria conducted by Imaledo, Peter-Kio and Asuguo (2012) adopted descriptive cross-sectional design. The population of the study was 20,000 out of which a sample of 300 respondents was purposively drawn. Questionnaire was used to collect data. The data was analyzed with statistical package for social sciences (SPSS) software package, version 15.0 using descriptive statistics of frequency and percentage, as well as inferential statistics of chi-square at 0.05 level of significance.

The finding on the socio-demographic characteristics of respondents showed that majority of the respondents were between 15 and 24 years and mostly singles, and sexually

active. Sexual activeness of this group was attributed not only to adolescents' age but to the long years of continued education which has created a big gap between the age of puberty and age at marriage. Long years of continued education, the finding revealed, increased the likelihood of sexual initiation and unprotected premarital sex. The finding also revealed that females in this study were more than males. More than quarter of the respondents as revealed by the finding either stayed alone or lived with a boy or girl friend. This finding confirmed the assertion that young people often take advantage of freedom from direct parental supervision and guidance to express their freedom by initiating sexual activity without adequate protection. The finding also revealed that many of the respondents had ever taken alcohol before, with more than a quarter being current users. A relationship was established between current use of alcohol and sexual experience by the finding.

The finding on the respondents' sexual behaviours showed that premarital sex occurred and increased as adolescents delay marriage for the purpose of acquiring formal education. Age and gender were found to be associated with risky sexual behaviours. In conclusion, the finding showed that risky sexual behaviours existed among the respondents and only few of the respondents used any form of protection. The need to step up campaigns to address lapses in the practice of preventive sexual health behaviours was recommended by the study.

Reece, et al. (2010) study on condom use rate in a national probability sample of males and females aged 14 to 94 in the United States, aimed to establish the rate of condom use among sexually active individuals in the United States population. The sample size was 5,865. Questionnaire was the instrument used for data collection. Frequency, percentage, t-test and ANOVA were used to analyze the data. The finding revealed that condom use by males was slightly higher (21.5%) than that reported by females (18.4%). On the consistency of rate of condom use, males scored higher (24.7%) than females (21.8%). Generally, the

finding showed that condom use was highest among unmarried adults, higher among adolescents (youths) than adults, and higher among black and Hispanic individuals when compared with other racial groups. The finding also revealed clear trends in condom use across age, gender, relationship status, and race/ ethnicity. The conclusion therefore was that these contemporary rates of condom use will be helpful to those who lead efforts to increase condom use among individuals who may be at risk of STIs.

Adebiyi and Asuzu (2009) conducted a study on condom use amongst out of school youths in a local government area. The sample for the study was 367. The respondents were youths aged 15-24 years. Questionnaire was the instrument used for data collection. Frequency, percentage, t-test and ANOVA were used for data analysis. The findings showed that majority of the respondents were between the ages of 21 and24 years. The percentage of those that had ever had sex as revealed by the finding was quite high. The study reported a pattern of low and inconsistent use of condom among youths. This reflects the fact that youths may still lack the capacity to take definite decisions to protect themselves from harmful consequences of unprotected sex through the practice of preventive sexual health behaviours. The finding also revealed that more males than females used condoms. This finding may be due to the inability of females to negotiate for condom use due to socio-economic status of partnership, which subjugates women to concede to unsafe sex. More males reported having had a discussion on sexual matters than females. This shows that females generally lack self-efficacy in sexual matters and sometimes are referred to as sexual gatekeepers.

The study on abstinence among female adolescents: Do parents matter above and beyond the influence of peers' was conducted by Maguen and Armistead (2006) to determine whether parental variables predict abstinence above and beyond the influence of peer variables. The sample size consisted of 368 female adolescents. Questionnaire was the

instrument for data collection. Frequency, percentage, mean and t-test were used for data analysis.

The finding showed that for the total sample and older adolescent, both parental sexual attitudes and parent-adolescent relationship quality predicted abstinence after accounting for the variance associated with peer variables. For the younger adolescent girls, the finding revealed that perceived parental attitudes were the only significant predictor. The study also revealed that more females than males abstain from sex when compared with the finding of another study that studied both male and female youths. The study suggested that adolescents sexual risk reduction interventions may benefit from including parents, stressing the importance of articulating parental sexual attitudes. The study also highlighted the significance of the parent-adolescent relationship.

Isiugo-Abanife, et al. (2012) conducted a study on age of sexual debut and patterns of sexual behaviour in two local government areas in Southern Nigeria. The study adopted survey design. Interviews and focus group discussion were used for data collection. The sample for the study was 726. Frequency, percentage, mean and t-test were used for data analysis.The finding showed that the median age of first sex among never-married males and females were 17 and 18 years respectively. More than one in five adolescents as revealed by the finding had had sex before age 16. The finding also revealed that the never married males and females initiated sex earlier than the ever married, older respondents. The report that 14 per cent of the married kept other sexual partners beside their wives as shown by the finding is indicative of substantial extramarital relationship. The finding also revealed that 12 per cent of the never-married male partners have other sexual partners. The higher likelihood of alcohol use in sexual liaisons with non-regular sex partners was revealed by the finding. This finding is suggestive of high prevalence of transactional sex and spontaneous or unplanned sex under the influence of alcohol, with their implication for the spread of HIV and AIDS.

The study underscored the need for adolescent sexual and reproductive health education and behaviour change communication, as well as the inculcation of values less favourable for the spread of STIs.

Tsitiska, Greydanus and Konstantoulaski (2010) conducted a study on adolescents dealing with sexuality issue: A cross section study in Greece. The study evaluated the prevalence of sexual activity and contraception methods used by Greek adolescents and assessed the effect of various factors in the decision making on sexual activity. The study adopted a cross-sectional design. The sample of 1,538 was used for the study. The instrument for data collection was questionnaire. Frequency, percentage, spearman and chi-square were used for data analysis.

The finding showed that more males than females had had sexual intercourse. Although majority of the adolescents of the study used condom, only 32 per cent of them used it properly. This showed that at least more than half of the adolescents of this study do not practice adequate primary preventive sexual health behaviours. The finding also revealed that adolescents with unstable home environment or sexually experienced peers, as well as those that seek sexual education from siblings, or friends have higher possibilities of being sexually active. The study concluded that Greek adolescents can be sexually active at a young age and therefore needed sexual education on safe sex practices.

Bearman and Bruckner (2008) study on peer effects on adolescent girls' sexual debut and pregnancy risk sought to explain peer effects on girls' sexual debut. This included the timing of first intercourse, pregnancy risk, and the likelihood of becoming pregnant. Data from the National Longitudinal study of Adolescent Health (Add Health, 1994-95) was used. Follow-up in-home interviews were also conducted with above 20,000 adolescents out of the 90,000 used in the National longitudinal study and 85 percent of their parents in 1995, and with nearly 15,000 adolescents in 1996.

The finding showed that peer influence operates at many levels and that the network of close friends and the large peer group have more significant effects on female adolescent than do best friends. The study also revealed the peer influence to be positive. This finding could be attributed to the adolescent girls' possession of necessary skills to filter the negative influences of their high-risk friends and benefit from the protective influences of low-risk friends. Male and female friends and showed by the findings have different influences on sexual debut and pregnancy. Female best friends' risk status is associated with sexual debut while male friends' risk is associated with pregnancy risk. Younger adolescent females as revealed by the study lack confidence in initiating safe sex with their male friends while older adolescent females have the confidence to do so. The study recommended that peer intervention programs to reduce risky sexual behaviours should incorporate peers from the target's larger peer group.

Summary of Reviewed Literature

The purpose of this study is to determine the pattern of preventive sexual health behaviour about sexually transmitted infections among tertiary institution students in Imo State. In order to achieve the stated purpose, review of literature was carried out. Pertinent literatures were reviewed in relation to variables of interest and it covered the concepts; theoretical framework; theoretical studies and empirical studies.

Preventive sexual health behaviour is what people do in the belief that it facilitates or protects sexual health and it follows different patterns. These patterns depict a positive and respectful approach to sexuality and sexual relationships and are grouped into four levels, namely; primordial, primary, secondary and tertiary preventive sexual health behaviours. Measures of sexually transmitted infections (STIs) prevention adopted by these preventive sexual health behaviour patterns include among others, delaying initial sexual contact, condom use, STI screening and sexual abstinence. Certain factors influence preventive sexual

health behaviours. These factors include among others, religion, culture and tradition, peer pressure, parental pressure, gender, age, education, mass media and family background. They were grouped into five, namely; individual factors, economic factors, societal factors and organizational factors (Albama Women's Centre, 2012). These factors coupled with youths' characteristics (e.g. sex experimentation) play significant role in making youths vulnerable to STIs.

The literature review shows that there is an increase in youth's risky sexual activities. The increase in youth's risky sexual behaviours was attributed to youths' characteristics such as age, feeling of less vulnerability and sexual exploration. High risky sexual activities on the other hand expose and increase youth's chances of contracting STIs which is associated with several complications. The complications of STIs include among others, cervical cancer, infertility and low-birth weight (Center for Disease Control and Prevention 2011). There is need to encourage youths to show adequate preventive sexual health behaviours as this will help reduce the prevalence of STIs among youths. Moreover, practising adequate preventive sexual health behaviours will enable youths enjoy sexual health in future.

Several empirical studies had been conducted on sexual behaviours both in developed and undeveloped countries. For instance, Trajman, et al. (2008) conducted a study on knowledge of STD and AIDs, and sexual behaviours among high school students and revealed that unsatisfactory knowledge about sexual health was associated with inconsistent safe sex practice. Ruiker (2013) reported that adolescents had low to moderate levels of STIs knowledge. Pettifor, et al., (2009); Lohman and Billings (2008) and de Carvalho, et al. (2006) revealed that youths have some knowledge on sexuality and sexual health behaviours.

In Nigeria, Imaledo, et al. (2012) found that youths indulged in high-risk sexual activities. Envulado, et al. (2013) reported that only few youths admitted using a condom as a preventive measure for STI, though not consistent. Specifically in Imo State, Agha, et al.

(2006) revealed that youths knew that STIs could be contracted through unprotect sex. Nwoke and Okafor (2014) revealed that the level of sexual behaviours of older adolescents was higher than that of younger adolescents and that family structure, alcohol and drug intake, religious belief and financial strength influence level of sexual behaviours of adolescents in Imo State. All these studies were carried out either on knowledge of STI, socio-demographic correlates of sexual behavior sexual behaviours or risky sexual behaviours and not on preventive sexual behaviours towards STIs. Furthermore, these studies had secondary school students as respondents and not tertiary institution students. It is against this background that the present study was designed to determine the patterns of preventive sexual health behaviours towards sexually transmitted infections among tertiary institution students in Imo State. It is hoped that this would be a baseline study for other future work in this area in Nigeria and specifically in Imo State.

CHAPTER THREE

METHOD

This chapter presents the method and procedure that was adopted by the researcher in the conduct of this study. It is arranged under the following sub-headings, Research Design, Area of the Study, Population of the Study, Sample and Sampling Techniques, Instrument for Data Collection, Validation of the Instrument, Reliability of the Instrument, Method of Data Collection and Method of Data Analysis.

Research Design

The cross-sectional survey design was adopted in conducting this study. This was chosen because the research aimed at collecting and analyzing data from only a few people or items considered as representative of the entire group (Akuezulo & Agu, 2002). It is also concerned with the collection of data for the purpose of describing and interpreting conditions as they exist in their natural settings, that is, it is concerned with the description of "what is" and most importantly the discovery of the "meaning".

This design was adopted for this study because it has been proved useful in carrying out a number of similar reproductive health researches. Oladimeje and Mojisola (2011) used descriptive cross-sectional survey design to investigate the perception about sexual abstinence and knowledge of HIV and AIDS prevention among in-school adolescents. Envulado, et al. (2013) adopted cross-sectional survey design in conducting a study on social factors associated with teenage patterns of health behaviours. Similarly, Dominique and Megan (2010) used cross-sectional survey design to conduct a study on patterns of sexual behaviour and condom use among high school and university students. Therefore, cross-sectional survey design is considered appropriate for this study since it allows for sampling of subjects from a large group and description of a situation as it existed and is in line with the previous studies in the area.

Area of the Study

Imo State is the study area for this study. The state is one of the 36 states of Nigeria and it is known as the 'Eastern Heartland' with Owerri as the capital. Imo State has 27 Local Government Areas. These 27 Local Government Areas are grouped into three (3) geopolitical zones, namely: Owerri, Orlu and Okigwe. The state has an area of 5,289 square kilometers (Imo State Ministry of Lands, 2014). Imo State is bounded in the North by Anambra State, by Abia State in the East, and by Rivers State in the South and West. According to the 2006 National Population Census report, Imo state has a total human population of 3,934, 899. Males in the state constitute 2,032,286, while females are 1,902, 613 (Federal Republic of Nigeria (FRN, 2007).

Imo state has high regard for quality education. This is reflected by the presence of several tertiary institutions in the state. These tertiary institutions include two universities (Federal University of Technology, Owerri and Imo State University) two polytechnics (Federal Polytechnic, Nekede and Imo Polytechnic, Umuagwo), one college of education (Alvan Ikoku Federal College of Education), and four monotechnics (School of Nursing, Orlu; School of Nursing, Umulogho; School of Midwifery, Aboh-Mbaise; and School of Health Technology, Amaigbo)

These tertiary institutions were established to cater for the teeming youth population seeking tertiary education from within and outside the state. The universities, polytechnics and colleges of education are concentrated around Owerri, the state capital. The concentration of these tertiary institutions around the state capital exposes the students to metropolitan social lifestyles. Some of these metropolitan lifestyles have negative consequences on sexual health. For instance, urban areas, especially state capitals are usually associated with high cost of living. Students residing in such areas, in the bid to meet up with high cost of living, may resort to having sex for money. This singular act increases such individuals' chances of acquiring sexually transmitted infections (STIs).

Moreover, most of the tertiary institutions in the state do not have enough hostel accommodations for their students. This scenario, forces the students to seek hostel accommodation outside the campuses despite their exorbitant rents. Due to the high cost of these off campus hostels, some students pair, not minding the sex, so as to afford the hostel bill.

These situations of insufficient hostel accommodation and high cost of living in Owerri, the capital, coupled with youths' sexual activeness play significant role in pushing youths to indulge in high-risk sexual behaviours. These high risk sexual behaviours include among others, having multiple sexual partners and unprotected sex. These high risk sexual behaviours predispose these youths to sexual health problems such as illegal abortion, unplanned pregnancy, and sexually transmitted infections (STIs) including HIV and AIDS. Undoubtedly, these sexual health problems, especially, STIs are preventable. The prevention can be achieved through preventive sexual health behaviours. It therefore becomes necessary that the patterns of preventive sexual health behaviours of these students should be ascertained. The findings may help in planning intervention health programmes for these students.

Population of the Study

The population of the study comprised all the 63,297 registered regular under-graduate students of the five government-owned tertiary institutions in Imo State that admit students through Joint Admission and Matriculation Board. These tertiary institutions included two universities and two polytechnics (those registered for HND only), and one college of education (only those registered for degree programme). These tertiary institutions were targeted because they are multidisciplinary in design and operation, thereby, offering wider reach and better representation of tertiary education than the monotechnics.

These tertiary institutions are Federal University of Technology, Owerri with targeted population of 18,829 (males 13,953, females 4,876); Imo State University, Owerri, 26,522 (males 12,439, females 14,083); Alvan Ikoku Federal College of Education, Owerri, 7,086 (males 3667, females 3,419); Federal Polytechnic, Nekede (for those registered for HND only) 6,248 (males 3,539, females 2,709), Imo Polytechnic, Umuagwo, 4,612 (males 2,223, females 2,389). (Admission Units of the concerned institutions) (Appendix G).

Sample and Sampling Techniques

The five tertiary institutions in the state were selected for the study. The students' sample consisted 1399 youths that were drawn from the five tertiary institutions. The sample size represents 2.2 per cent of the entire population. The sample is considered adequate for generalization because according to Nwana (1981), if the population is a few thousands, a 10 per cent sample will do, and if several thousands, a five per cent or less sample will do. Multi-stage sampling procedure was adopted.

Proportionate stratified random sampling was used to draw the respondents from each of the tertiary institutions in the State. From Imo State University, Owerri (IMSU), a total of 587 respondents were drawn out of the population of 26,522 students. Four hundred and sixteen (416) respondents were drawn from the population of 18,829 students in Federal University of Technology, Owerri (FUTO). From the population of 7,086 students in Alvan Ikoku Federal College of Education, Owerri (AICE), 156 respondents were drawn. From the population of 6,248 students in Federal Polytechnic, Nekede (POLYNEKEDE), 138 respondents were drawn and 102 respondents were drawn from the population of 4,612 students in Imo Polytechnic (IMO POLY), Umuagwo. This yielded a total sample of 1399 respondents.

In the next stage, the researcher found the total number of males and females in each of the institutions after which proportionate stratified random sampling was used to draw 2.2

per cent of males and females respectively from each of the tertiary institutions. Two hundred and seventy-five males and 312 females (587) were drawn from the population of 12,439 males and 14,083 female students of IMSU; 308 males and 108 females (416) were drawn out of the population of 13,953 males and 4,876 female students of FUTO; 81 males and 75 females (156) were drawn from 3,667 males and 3,419 female students of AICE; 78 males and 60 females (138) were drawn from 3539 males and 2709 female POLY NEKEDE; and 49 males and 53 females (102) were drawn from 2223 males and 2389 female students of IMO POLY.

In the next stage, 20 per cent of the sampled males and females drawn from each year of study from the institutions that run up to 5 years programme were selected. From the institutions that run two years HND programme, 50 per cent of the sampled males and females were drawn (See Appendix H). The proportion of the students based on age was done after data collection. This is because the researcher has no access to the students' folders.

Instrument for Data Collection

The instrument that was used for the study is a structured questionnaire known as "Pattern of Preventive Sexual Health Behaviour (PAPSHEB) questionnaire. It was developed by the researcher based on the objectives of the study. The instrument was subdivided into five sections. Section 'A' contained three items on background information of the respondents; Sections B contained 11 items on the primordial preventive sexual behaviour patterns; Section C contained 19 items on the primary preventive sexual health behaviour patterns; Section D contained of nine items on the secondary preventive sexual health behaviour patterns, while section E contained seven items on the tertiary preventive sexual health behaviour patterns. In section 'A' the respondents were asked to tick which categories their friends belong. In section B-E, the questionnaire items were structured based on a four

point scale of measurement, ranging from never to always-thus: Never = 1, Sometimes = 2, Most of the time = 3 and Always = 4. The items are close-ended (see appendix A).

Validation of Instrument

The questionnaire was subjected to face validity. The instrument was submitted to the researcher's supervisor for input. After the supervisor's input, the same instrument was given to two lecturers in the Department of Physical and Health Education, Alvan Ikoku Federal College of Education, Owerri and one other lecturer in the Department of Public Health Technology, Federal University of Technology, Owerri. The experts were requested to scrutinize the instrument so as to justify its relevance in terms of clarity, appropriateness of language and ability to elicit accurate information in line with the objectives of the study. The final instrument was developed after due consultation with the researcher's supervisor and all corrections effected.

Reliability of the Instrument

To determine the reliability of the instrument, Crombach Coefficient Alpha (α) method was adopted. Thirty copies of the structured questionnaire were administered to 30 tertiary institution students in Nnamdi Azikiwe University, Awka, who are not part of the respondents for the study. The result was analyzed using the Crombach Alpha Reliability Coefficient and Reliability Coefficience of 0.97, 0.92, 0.97 and 0.97 were obtained on the primordial, primary, secondary and tertiary preventive sexual health behaviour patterns respectively.

Method of Data Collection

The researcher trained five (5) research assistants who helped in the administration of the instrument. The researcher paid a formal visit to the Heads of Departments (HODs) of the departments used for the study. During the visit, an introductory letter was given to each of the HODs. The HODs after consulting with the course representatives, gave the researcher

dates and time for filling out the copies of the questionnaire. On the appointed dates and within the time frame, the researcher and the research assistants administered the instrument and collected same back after filling. One thousand three hundred and ninety-nine copies of the questionnaire were distributed and collected back. One hundred and forty-three copies of the questionnaire were discarded because they were not properly filled. Therefore, one thousand two hundred and fifty-six copies of the questionnaire were used and this yielded 89.8 per cent return rate.

Method of Data Analysis

The data that was generated for the study were analyzed using descriptive statistics of mean to answer the research questions, while inferential statistics of z-test, ANOVA and ANCOVA were was used to test at .05 level of significance hypotheses. Z-test was used to test hypotheses 1, 4, 7, and 10. Hypotheses 2, 3, 5, 6, 8, 9, 11 and 12 were tested using ANOVA, while hypotheses 13, 14, 15 and 16 were tested using ANCOVA. Four point scale of Never, Sometimes, Most of the time and Always was used. The four point scale was weighted as follows, Always 4, Most of the time 3, Sometimes 2 and Never 1.The criterion mean was placed at 2.50 since this is the lowest limit for agreed. Therefore any mean 2.50 and above is adequate, while any mean below 2.50 is inadequate.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

In this chapter, results of the study are presented. Presentation of data is done using tables and in line with the twelve research questions and thirteen hypotheses.

Research Question 1

What are the primordial preventive sexual health behaviour patterns of male and female tertiary institution students in Imo State?

Table 1: Item by Item Mean Pattern of Male and Female Tertiary Institution Students on the Primordial Preventive Sexual Health Behaviours.

S/N	Primordial preventive behavior	Gender	
		Males $\overline{X}$	Females $\overline{X}$
1.	Avoids sharing inner wears	2.61	2.93
2.	Avoids use of drugs prior to sexual intercourse	2.67	2.77
3.	Avoids use of alcohol prior to sexual intercourse	2.58	2.91
4.	Avoid sharing injecting-drug instrument	2.80	3.10
5.	Does not accept unscreened blood	2.74	2.98
6.	Cleans public toilet surface before use	2.70	2.98
7.	Not easily swayed by friends negative view about sex	2.60	2.68
8.	Avoids sharing sharp objects (e.g. razor)	2.89	2.86
9.	Says 'No' to unprotected sexual advances.	2.73	2.78
10.	Uses condom despite the belief that it reduces sexual pleasure.	2.51	2.51
11.	Avoids watching pornographic films	2.56	2.81
	Grand mean	2.67	2.85

Table 1 shows the mean patterns of primordial preventive sexual health behaviours of the male and females tertiary institution students. The table shows that male students had the highest mean score of 2.89 on item 8 (avoid sharing sharp objects), followed by item 4 (avoids drug injecting instruments) with a mean score of 2.80. On the other hand, female students had the highest mean score of 3.10 on item 4 (avoids sharing drug injecting instruments), followed by the mean score of 2.98 on items 5 and 6 respectively (does not

accept unscreened blood transfusion and cleans public toilet surface before use). The overall mean scores of primordial preventive sexual health behaviour patterns of tertiary institution students as reveals by table 1 were 2.67 for males and 2.85 for females. The females had higher primordial preventive sexual health behaviour mean score than their male counterparts. The conclusion therefore, is that tertiary institution male and female students in Imo State practiced adequate primordial preventive sexual health behaviour since the mean scores for both groups were above the criterions mean.

Research Question 2

What are the primordial preventive sexual behaviour patterns of students of different age groups in tertiary institutions in Imo State?

Table 2: Item by Item Mean Pattern of Tertiary Institution Students of Different Age Groups on the Primordial Preventive Sexual Health Behaviour.

S/N	Primordial Preventive Behaviour.	15-19 $\overline{X}$	20-24 $\overline{X}$	25-29 $\overline{X}$	30-34 $\overline{X}$
1	Avoids sharing inner wears	3.03	2.82	2.45	3.05
2	Avoids use of drugs prior to sexual	2.70	2.80	2.65	2.82
3	Avoids use of alcohol prior to sexual intercourse	2.70	2.61	2.43	2.76
4	Avoid sharing injecting-drug instrument	3.06	2.99	2.75	3.00
5	Does not accept unscreened blood	3.09	2.88	2.61	3.11
6	Cleans public toilet surface before use	2.32	2.93	2.75	2.47
7	Not easily swayed by friends negative view about sex	2.54	2.56	2.76	2.70
8	Avoids sharing sharp objects (e.g. razor)	2.80	2.79	2.96	3.05
9	Says ‘No’ to unprotected sexual advances	2.61	2.71	2.74	2.85
10	Uses condom despite the belief that it reduces sexual pleasure.	2.51	2.50	2.45	2.64
11	Avoids watching pornographic films	2.67	2.85	2.43	2.76
	Grand $\overline{X}$	2.73	2.77	2.63	2.84

Table 2 reveals the mean analysis of the patterns of primordial preventive sexual health behaviours of tertiary institution students based on their different age groups. Students in age group 15-19 years had the highest mean score of 3.09 on item 5 (does not accept

unscreened blood transfusion) though all the item means as applied to questions 1-11 except item 6 were above the criterion mean, while students in 20-24 years and 30-34 years age group had mean scores above the criterion mean on all the items. Students in age group 25-29 years had mean scores above the criterion mean on 7 items with the mean score of 3.11 on item 5 being the highest. The table reveals the overall mean for each age group. Age group 15-19 years had a mean score of 2.73; age group 20-24 years had a mean score of 2.77; age group 25-29 had a mean score of 2.63; while age group 30-34years had a mean score of 2.84. This shows that age group 30-34 years had the highest primordial preventive sexual health behaviours mean pattern score of 2.84 than the rest of the age groups, while age group 25-29 years had the lowest primordial preventive sexual health behaviours mean pattern score of 2.63. Since the overall mean score for each age group was above the criterion mean, we conclude that tertiary institution students of different age groups showed adequate primordial preventive sexual health behaviours.

Research Question 3

What are the primordial preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?

Table 3: Item by Item Mean Pattern of Primordial Preventive Sexual Health Behaviours of Tertiary Institution Students of Different Years of Study.

S/N	Primordial preventive behavior	Year 1 $\bar{x}$	Year 2 $\bar{x}$	Year 3 $\bar{x}$	Year 4 $\bar{x}$	Year 5 $\bar{x}$
1	Avoids sharing inner wears.	2.25	2.84	2.53	2.76	3.13
2	Avoids use of drugs prior to sexual intercourse.	2.52	2.72	2.60	2.83	3.00
3	Avoids use of alcohol prior to sexual intercourse.	2.52	2.54	2.62	2.86	3.00
4	Avoid sharing injecting-drug instrument.	2.87	3.11	2.95	2.95	3.02
5	Does not accept unscreened blood.	2.41	3.05	2.83	3.05	3.13
6	Cleans public toilet surface before use	2.52	2.74	2.52	2.86	3.00
7	Not easily swayed by friends negative view about sex	2.62	2.54	2.48	2.98	2.77
8	Avoids sharing sharp objects (e.g. razor)	2.72	2.81	2.64	3.07	3.27
9	Says 'No' to unprotected sexual advances	2.68	2.81	2.26	3.02	3.06
10	Uses condom despite the belief that it reduces sexual pleasure.	2.70	2.69	2.93	2.81	2.29
11	Avoids watching pornographic films	2.56	2.74	2.33	2.98	2.69
	Grand $\bar{X}$	2.57	2.78	2.56	2.92	2.85

The mean scores of primordial preventive sexual health behaviour patterns of tertiary institution students of different years of study are shown in table 3 above. The table reveals that students in year I had the highest mean score of 2.87 on item 4 (avoids sharing injecting-drug instrument) seconded by the mean score of 2.72 on item 8 (avoids sharing sharp objects e.g. razor). In general, year 1 students had mean scores above the criterion mean on 9 items out of the 11 items on primordial preventive sexual health behaviours and below the criterion mean on only two (2) items. Students in years 2 and 3 had their highest mean scores of 3.11 and 2.95 respectively on item 4 (avoids sharing injecting-drug instrument), while students in years 4 and 5 had their highest mean scores of 3.07 and 3.27 respectively on item 8 (avoids sharing sharp objects e.g. razor). In general, students in years 2 and 4 had mean scores above the criterion mean on all the eleven items. Students in year 3 had mean scores above the criterion mean on 8 items and below the criterion mean on 3 items, while year 5 students had mean scores above the criterion mean on 10 items out of the 11 items. The overall mean as revealed by the table shows that year 4 students had the highest overall mean score of 2.92,

followed by year 5 students' mean score of 2.85, then year 2 students' mean score of 2.78, and year 1 students' mean score of 2.57. Students in year 3 had the lowest mean score ($\overline{x}$ = 2.56). The overall mean scores for students in different years of study groups were above the criterion mean. This signifies that tertiary institutions students in different years of study showed adequate primordial preventive sexual health behaviours.

Research Question 4

What are the primary preventive sexual health behaviour patterns of male and female students of tertiary institution in Imo State?

Table 4: Item by Item Mean Pattern of Primary Preventive Sexual Health Behaviours of Tertiary Institution Male and Female Students in Imo State.

S/N	Primary preventive behavior	Males $\overline{X}$	Females $\overline{X}$
12	He/she initiates the topic of safe sex with his/her potential sexual partner	2.39	2.39
13	He/she avoids direct contact with his/her sexual partner's blood.	2.77	2.84
14	He/she insists on correct condom use during sexual intercourse	2.73	2.61
15	He/she stops foreplay long enough to put on a condom	2.49	2.54
16	He/she maintains a long term mutual monogamous relationship with an uninfected person	2.56	2.49
17	He/she avoids direct contact with his/her sexual partner's semen or vaginal secretions	2.55	2.45
18	He/she avoids having sex with different sex partners.	2.70	2.56
19	He/she practices sexual abstinence	2.15	2.27
20	He/she abstains from sex when he/she does not know his/her partner's sexual history.	2.54	2.62
21	He/she insists on his/her partner getting tested for STI.	2.67	2.63
22	He/she uses condom if he/she knows an encounter may lead to sexual intercourse.	2.70	2.68
23	If his/her partner insists on sexual intercourse without condom, he/she refuses sex.	2.51	2.47
24	He/she visits health care centres for pre-exposure vaccination.	2.01	1.80
25	He/she avoids causal sex.	2.37	2.47
26	He/she uses condom consistently.	2.51	2.30
27	He/she avoids all forms of pre-marital sex.	2.56	2.21
28	He/she insists on knowing the STI status of his/her partner before sexual intercourse.	2.52	2.45
29	He/she avoids oral sex.	2.78	2.52
30	He/she checks his/her STI regularly.	2.53	2.27
	Grand mean $\bar{x}$	2.53	2.45

Table 4 reveals the mean responses of male and female tertiary institution students on the patterns of primary preventive sexual health behaviour. The table reveals that male students had mean scores above the criterion mean on 14 items and below the criterion mean on 5 items, while female students had mean scores higher than the criterion mean on only 8

items and below the criterion mean on 11 items. The item with the highest score of 2.78 for male students, was item 29 (avoids oral sex), while the item with the lowest mean score of 2.01 was item 24 (He/she visits health care centers for pre-exposure vaccination). The item with the highest mean score of 2.84 for female students, was item 13 (avoids direct contact with sexual partner's blood), while the item with the lowest mean score ($\bar{x}$= 2.21) for female students was item 27 (avoids all forms of pre-marital sex). The table reveals the overall mean for males as 2.53 and females as 2.45. This shows that males had higher mean score ($\bar{x}$ = 2.53) than their female counterparts. The overall mean for males was higher than the criterion mean while the overall mean for females was lower than the criterion mean. We therefore, conclude that males show adequate primary preventive sexual health behaviours while those of the females were inadequate.

Research Question 5

What are the primary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State?

Table 5: Item by Item Mean Pattern of Primary Preventive Sexual Health Behaviour Patterns of Tertiary Institution Students of Different Age Groups

S/N	Primary preventive behavior	Age Groups 15-19yrs $\bar{x}$	20-24yrs $\bar{x}$	25-29yrs $\bar{x}$	30-34yrs $\bar{x}$
12	He/she initiates the topic of safe sex with his/her potential sexual partner	2.48	2.51	2.47	2.26
13	He/she avoids direct contact with his/her sexual partner's blood.	2.74	2.79	2.63	2.76
14	He/she insists on correct condom use during sexual intercourse.	2.61	2.65	2.73	2.50
15	He/she stops foreplay long enough to put on a condom.	2.45	2.53	2.60	2.23
16	He/she maintains a long term mutual monogamous relationship with an uninfected person.	2.40	2.59	2.71	1.94
17	He/she avoids direct contact with his/her sexual partner's semen or vaginal secretions.	2.29	2.63	2.57	2.02
18	He/she avoids having sex with different sex partners.	2.41	2.76	2.57	2.38
19	He/she practices sexual abstinence.	2.19	2.36	2.14	2.29
20	He/she abstains from sex when he/she does not know his/her partner's sexual history.	2.19	2.69	2.56	2.50
21	He/she insists on his/her partner getting tested for STI.	2.35	2.73	2.58	2.88
22	He/she uses condom if he/she knows an encounter may lead to sexual intercourse.	2.12	2.69	2.57	2.54
23	If his/her partner insists on sexual intercourse without condom, he/she refuses sex.	2.29	2.69	2.29	2.35
24	He/she visits health care centres for pre-exposure vaccination.	1.32	2.21	1.89	1.17
25	He/she avoids causal sex.	2.22	2.50	2.41	2.29
26	He/she uses condom consistently.	1.74	2.54	2.48	2.23
27	He/she avoids all forms of pre-marital sex.	2.16	2.50	2.36	2.22
28	He/she insists on knowing the STI status of his/her partner before sexual intercourse.	2.19	2.56	2.53	2.41
29	He/she avoids oral sex.	2.54	2.88	2.54	2.11
30	He/she checks his/her STI regularly.	2.12	2.44	2.48	2.20
	Grand mean $\bar{x}$	2.25	2.59	2.48	2.28

Table 5 presents the mean scores of primary preventive sexual health behaviour of tertiary institution students of different age groups. Age group 15-19 years had mean score above the criterion mean on only 3 items and below the criterion mean on 16 items. Age group 15-19 years had the highest mean score ($\bar{x}$ = 2.74) on item 13. Age group 20-24 years had the highest mean score of 2.88 on item 28 (avoids oral sex), as well as mean scores above the criterion mean on 16 items out of the 19 items on primary preventive sexual health behaviours. Age group 25-29 years had the highest mean score of 2.73 on item14 (insists on correct use of condom during sexual intercourse). In general, age group 25-29 had mean scores above the criterion mean on 12 items and below the criterion mean on 7 items, while age group 30-34 years had mean scores above the criterion mean on 6 items and below the criterion mean on 13 items. Age group 30-34 years had the highest mean score of 2.88 on item 21 (insists on his/her partner getting tested for STI). The overall mean score for each age group showed that age group 15-19 years had a mean score of 2.25; age group 20-24 age group 2.59; age group 25-29 years 2.48; and age group 30-34 years had a mean score of 2.28. Age group 20-24 had higher primary preventive sexual health behaviours mean score ($\bar{x}$ = 2.59) than the rest of the age groups, while age group 15-19 years had the lowest primary preventive sexual health behaviours mean score of ($\bar{x}$ = 2.25). The overall mean for different age groups reveals that students in age group 20-24 had a mean score of 2.59 above the criterion on primary preventive sexual health behaviour, while age groups 15-19 years ($\bar{x}$ = 2.25), 25-29 years ($\bar{x}$= 2.48) and 30-34 years ($\bar{x}$= 2.28) had mean scores below the criterion mean. It implies that students within the age groups 15-19 years, 25-29 years and 30-34 years did not show adequate primary preventive sexual health behaviours, while students within 20-24 years age group practised adequate primary preventive behaviours.

Research Question 6

What are the primary preventive sexual health behaviour patterns of students of different years of study?

Table 6: Item by Item Mean Pattern of Primary Preventive Sexual Health Behaviour of Students of Different Years of Study.

S/N	Primary Preventive Behaviour	Years of Study Yr 1 $\bar{x}$	Yr 2 $\bar{x}$	Yr 3 $\bar{x}$	Yr 4 $\bar{x}$	Yr 5 $\bar{x}$
12	He/she initiates the topic of safe sex with his/her potential sexual partner	1.91	2.46	2.43	2.86	2.94
13	He/she avoids direct contact with his/her sexual partner's blood.	2.50	3.04	2.62	2.90	2.96
14	He/she insists on correct condom use during sexual intercourse.	2.56	2.80	2.55	2.48	2.79
15	He/she stops foreplay long enough to put on a condom.	2.38	2.57	2.41	2.89	2.52
16	He/she maintains a long term mutual monogamous relationship with an uninfected person.	2.38	2.65	2.66	2.59	2.68
17	He/she avoids direct contact with his/her sexual partner's semen or vaginal secretions.	2.43	2.75	2.53	2.40	2.44
18	He/she avoids having sex with different sex partners.	2.80	2.69	2.79	2.52	2.58
19	He/she practices sexual abstinence.	2.27	2.04	2.15	2.76	2.31
20	He/she abstains from sex when he/she does not know his/her partner's sexual history.	2.29	2.47	2.59	2.93	2.65
21	He/she insists on his/her partner getting tested for STI.	2.57	2.64	2.59	2.67	2.81
22	He/she uses condom if he/she knows an encounter may lead to sexual intercourse.	2.55	2.62	2.79	2.69	1.65
23	If his/her partner insists on sexual intercourse without condom, he/she refuses sex.	2.29	2.54	2.64	2.43	2.44
24	He/she visits health care centres for pre-exposure vaccination.	1.91	1.81	2.12	1.79	1.73
25	He/she avoids causal sex.	2.10	2.31	2.55	2.17	2.58
26	He/she uses condom consistently.	2.50	2.16	2.89	2.24	2.50
27	He/she avoids all forms of pre-marital sex.	2.41	2.32	2.38	2.45	2.44
28	He/she insists on knowing the STI status of his/her partner before sexual intercourse.	2.42	2.64	2.26	2.52	2.73
29	He/she avoids oral sex.	2.41	2.69	2.69	2.64	2.23
30	He/she checks his/her STI regularly.	2.17	2.48	2.60	2.52	2.58
	Grand $\bar{X}$	2.36	2.51	2.54	2.55	2.59

Table 6 reveals the primary preventive sexual health behaviour of students in all the different years of study groups. The primordial preventive sexual health behaviours practised adequately by students in all the groups include; avoiding direct contact with sexual partner's blood (item 13), avoiding sex with different sex partners (item 18), and insisting on sex partner getting test for STI (item 21). The primary preventive sexual health behaviours not adequately shown by students in any of the years of study were visiting health care centres for pre-exposure vaccination (item 24) and avoiding all forms of pre-marital sex (item 27).

Students of different years of study showed varied responses on all the other items. The overall means reveal that year 1 students has a mean score of 2.36; year 2 students had 2.51; year 3 students 2.54; year 4 students had a mean score of 2.55; and year 5 student had a mean score of 2.59. Year 5 students had the highest mean score ($\bar{x}$ = 2.59), followed by year 4 students ($\bar{x}$ = 2.55), year 3 students ($\bar{x}$= 2.54), then year 2 students ($\bar{x}$= 2.51), and year 1 students had the lowest mean score ($\bar{x}$ = 2.36). this signifies that year 1 students had the lowest mean score followed by year 2 students, then year 3 students, year 4 students and finally year 5 students with the highest mean score. The overall mean for each year of study reveals that students in year 1 do not show adequate primary preventive sexual health behaviours since they had mean score

($\bar{x}$ = 2.36) below the criterion mean, while students in years 2 to years 5 showed adequate primary preventive sexual health behaviours since they had an overall mean above the criterion mean.

Research Question 7

What are the secondary preventive health behaviour patterns of male and female students in tertiary institutions in Imo State?

Table 7: Item by Item Mean Patterns of Secondary Preventive Sexual Health Behaviours of Male and Female Students.

S/N	Secondary Preventive Behaviour	Males $\overline{X}$	Females $\overline{X}$
31	He/she attends regular medical check-ups.	2.58	2.35
32	He/she seeks immediate health care, if he/she suspects any STI symptom.	2.77	2.65
33	He/she resorts to early treatment once diagnosed with STI.	2.84	2.56
34	He/she notifies his/her sexual partner if he/she contracts STI	2.68	2.39
35	He/she insists on his/her partner getting treated if he/she acquired any STI	2.80	2.66
36	Once undergoing STI treatment, He/she abstains from sex to avoid re-infection.	2.86	2.75
37	He/she takes his/her medicine as prescribed by his/her doctor to prevent complications.	2.82	2.75
38	He/she attends STI screening if he/she is sexually assaulted.	2.38	2.41
39	He/she does not wait until STI becomes pronounced before going for STI screening.	2.36	2.20
	Grand $\overline{x}$	2.68	2.52

The mean score of secondary preventive sexual health behaviour of male and female tertiary institution students are shown in table 7 above. The males had the highest mean score of 2.86 on item 36 (once undergoing an STI treatment, he/she abstains from sex to avoid re-infection), seconded by item 33 (he /she resorts to early treatment once diagnose with STI) with a mean score of 2.84. In general, males had mean scores above the criterion mean on 7 items out of the 9 items on secondary preventive sexual health behaviours, while females had mean scores above the criterion mean on 5 items out of the 9 items. Females had the highest mean scores of 2.75 on items 36 (once undergoing STI treatment, he/she abstain from sex to avoid re-infection) and 37 (he/she takes his/her medicine as prescribe by his/her doctor to prevent complication respectively. Male students had an overall mean score of 2.68, while female students had an overall mean score of 2.52. Since the overall mean for males and

females were above the criterion mean, it signifies that male and female tertiary institution students observed adequate secondary preventive sexual health behaviours.

Research Question 8

What are the secondary preventive sexual health behaviour patterns of different age groups in tertiary institution students in Imo State?

Table 8: Item by Item Mean Patterns of Secondary Preventive Sexual Health Behaviours of Students of Different Age Groups.

		Age Groups			
S/N	Secondary Preventive Behaviour	15-19yrs $\bar{x}$	20-24yrs $\bar{X}$	25-29yrs $\bar{x}$	30-34yrs $\bar{x}$
31	He/she attends regular medical check-ups.	2.33	2.52	2.45	2.44
32	He/she seeks immediate health care, if he/she suspects any STI symptom.	2.25	2.79	2.71	2.76
33	He/she resorts to early treatment once diagnosed with STI.	2.41	2.86	2.90	2.68
34	He/she notifies his/her sexual partner if he/she contracts STI	2.29	2.51	2.64	2.58
35	He/she insists on his/her partner getting treated if he/she acquired any STI.	2.51	2.87	2.69	2.41
36	Once undergoing STI treatment, He/she abstains from sex to avoid re-infection.	2.70	2.88	2.80	2.52
37	He/she takes his/her medicine as prescribed by his/her doctor to prevent complications.	2.77	2.88	2.72	2.94
38	He/she attends STI screening if he/she is sexually assaulted.	2.28	2.01	2.56	2.67
39	He/she does not wait until STI becomes pronounced before going for STI screening.	2.25	2.41	2.23	2.17
	Grand $\overline{X}$	2.42	2.64	2.63	2.54

Table 8 shows the items mean scores and the overall mean scores of students of different age groups on secondary preventive sexual health behaviours. From the table 15-19

years age group had the highest mean score of 2.77 on item 37 (takes medicine as prescribed by the doctor to prevent complication) followed by item 36 (once undergoing STI treatment he/she abstains from sex to avoid re-infection) with a mean score of 2.70. Age group 15-19 years had the lowest mean score of 2.25 on items 32 and 39. In general, age group 15-19 had mean scores above the criterion mean on 3 items and below the criterion mean on the remaining 6 items. Age group 20-24 years had the highest mean score of 2.88 on items 36 and 37, followed by item 35 ($\bar{x}$ = 2.87) and then item 33 ($\bar{x}$ = 2.86). In summary, age group 20-24 years had mean scores above the criterion mean on 7 items and below the criterion on 2 items. Age group 25-29 had the highest mean score of 2.90 on item 33, followed by item 36 ($\bar{x}$= 2.80) and then item 37 ($\bar{x}$= 2.72) while age group 30-34 years had the highest mean score of 2.94 on item 37, followed by item 32 ($\bar{x}$ =2.68) and then item 33 ($\bar{x}$ =2.68). On all the items on secondary preventive sexual health behaviours, age group 30-34 had mean scores above the criterion mean on 6 items and below the criterion mean on 3 items. All the age groups scored above the criterion mean on items 36 and 37, and below the criterion mean on item 39.

Table 8 also shows that age group 20-24 years had the highest overall mean score ($\bar{x}$ = 2.64) followed by age group 25-29 years ($\bar{x}$= 2.63), and then age group 30-34 years ($\bar{x}$ = 2.54), while age group 15-19 years had the lowest overall mean score ($\bar{x}$ = 2.42). The overall mean scores reveal that students in age group 15-19 years do not show adequate secondary preventive sexual health behaviours because their overall mean score was below the criterion mean, while students in age groups 20-24 years, 25-29 years, and 30-34 years showed adequate secondary preventive sexual health behaviours since the overall mean score for each age group was above the criterion mean.

Research Question 9

What are the secondary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?

Table 9: Item by Item Mean Pattern of Secondary Preventive Sexual Health Behaviour of Students of Different Years of Study.

S/N	Secondary Preventive Behaviour	Year of Study				
		Yr 1 $\overline{X}$	Yr 2 $\overline{X}$	Yr 3 $\overline{X}$	Yr 4 $\overline{X}$	Yr 5 $\overline{X}$
31	He/she attends regular medical check-ups.	2.23	1.62	2.28	2.52	2.48
32	He/she seeks immediate health care, if he/she suspects any STI symptom.	2.54	2.77	2.53	2.83	3.15
33	He/she resorts to early treatment once diagnosed with STI.	2.64	2.88	2.66	2.05	3.17
34	He/she notifies his/her sexual partner if he/she contracts STI	2.50	2.56	2.16	2.64	2.89
35	He/she insists on his/her partner getting treated if he/she acquired any STI.	2.56	2.86	2.72	2.55	2.98
36	Once undergoing STI treatment, He/she abstains from sex to avoid re-infection.	2.45	3.01	2.87	2.79	2.96
37	He/she takes his/her medicine as prescribed by his/her doctor to prevent complications.	2.51	2.95	2.74	2.79	3.31
38	He/she attends STI screening if he/she is sexually assaulted.	2.53	2.51	2.59	2.38	2.88
39	He/she does not wait until STI becomes pronounced before going for STI screening.	2.55	2.32	2.14	2.57	2.31
	Grand Mean $\overline{x}$	2.50	2.61	2.52	2.68	2.90

Table 9 reveals that year 1 students had the highest mean score ($\overline{x}$ = 2.64) on item 33, followed by item 35 ($\overline{x}$= 2.56), and then item 39 ($\overline{x}$ =2.55) but had the lowest mean score on item 31($\overline{x}$ = 2.23). Years 2 and 3 students had the highest mean scores of 3.01 and 2.87 respectively on item 36, followed by the mean score of 2.95 and 2.74 (for years 2 and 3 respectively on item 37; while year 2 students had the lowest mean score of 1.62 on item 1 and year 3 students had the lowest mean score of 2.14 on item 39. Year 4 students had the highest mean score of 2.83 on item 32, followed by the mean score of 2.79 on items 36 and

37, while they had lowest mean score of 2.74 on item 33. Students in year 5 had the highest mean score of 3.31 on item 37, followed by item 33 ($\bar{x}$ = 3.17), then item 32 ($\bar{x}$ = 3.15), and had the lowest mean score of 2.31 on item 39.

The overall mean score for year 1 students as reveals by the table was 2.50, for year 2 students, 2.61; for year 3 students, 2.52; for year 4 students, 2.68; and for year 5 students, 2.90. Year 1 students had the lowest mean score ($\bar{x}$= 2.50) while year 5 students had the highest mean score of 2.90 among the groups. The overall mean score for all the groups were above the criterion mean. This implies that tertiary institution students in different years of study practised secondary preventive sexual health behaviours adequately.

Research Question 10

What are the tertiary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State?

Table 10: Item by Item Mean Patterns of Tertiary Preventive Sexual Health Behaviours of Male and Female Students.

S/N	Tertiary Preventive Behaviour	Males 696 $\bar{X}$	Females 590 $\bar{X}$
40	He/she avoids self-medication if he/she acquires STI.	2.59	2.60
41	He/she takes thorough treatment to reduce the effect of the acquired STI.	2.76	2.80
42	He/she completes the treatment course if he/she acquires any STI.	2.81	2.75
43	If it is an incurable STI like HIV, He/she starts taking antiretroviral drug to stop early emergence of opportunistic disease.	2.78	2.64
44	Once on treatment, he/she keeps to his/her visiting days for medical check-ups.	2.69	2.71
45	Once infected, he/she uses condom to avoid infecting others.	2.75	2.57
46	He/she stops all forms of psychoactive drug while undergoing treatment for quick recovery.	2.75	2.70
	Grand Mean $\bar{x}$	2.73	2.68

Table 10 shows that male students had the highest mean score of 2.81 on item 42 followed by item 43 ($\bar{x}$ = 2.76), and then item 41 ($\bar{x}$= 2.76), while they had the lowest mean

score of 2.59 on item 40. All items had means above the criterion mean for males. Female students had the highest mean score of 2.80 on item 41, followed by item 42 ($\bar{x}$ =2.75), and then item 44 ($\bar{x}$ = 2.71).The overall mean scores of the students were 2.73 for males and 2.68 for females. Since the overall means for each group was above the criterion mean, we therefore conclude that both gender groups practised tertiary preventive sexual health behaviours adequately.

Research Question 11

What are the tertiary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State?

Table 11: Item by Item Mean Patterns of Tertiary Preventive Sexual Health Behaviours of Students of Different Age Groups.

S/N	Tertiary Preventive Behaviour	Age Groups			
		15-19yrs $\bar{x}$	20-24yrs $\bar{x}$	25-29yrs $\bar{x}$	30-34yrs $\bar{X}$
40	He/she avoids self-medication if he/she acquires STI.	2.51	2.65	2.83	2.52
41	He/she takes thorough treatment to reduce the effect of the acquired STI.	2.45	2.48	2.86	2.64
42	He/she completes the treatment course if he/she acquires any STI.	2.74	2.46	2.90	2.51
43	If it is an incurable STI like HIV, He/she starts taking antiretroviral drug to stop early emergence of opportunistic disease.	2.80	2.34	2.77	2.38
44	Once on treatment, he/she keeps to his/her visiting days for medical check-ups.	2.61	2.35	2.75	2.47
45	Once infected, he/she uses condom to avoid infecting others.	2.32	2.36	2.53	2.58
46	He/she stops all forms of psychoactive drug while undergoing treatment for quick recovery.	3.02	2.25	2.62	2.32
	Grand Mean $\bar{x}$	2.64	2.41	2.75	2.49

Table 11 shows that age group 15-19 years scored above the criterion mean of 2.50 on 5 items (items 40, 42, 43, 44 and 46) and below the criterion mean on two items (items 41 and 45). The age group 15-19 years, had the highest mean score of 3.02 on item 46, followed by item 43 ($\bar{x}$ = 2.80), while they had the lowest mean score of 2.45 on item 41. Age group

20-24 years had the highest mean score of 2.65 on item 40 and lowest mean score of 2.25 on item 46. Age group 20-24 scored above the criterion mean in only one item (item 40) and below the criterion mean in the remaining six items. Age group 25-29 years had the highest mean score ($\bar{x}$ = 2.90) on item 42 seconded by item 41 ($\bar{x}$=2.86), and then item 40 ($\bar{x}$= 2.83). Age group 25-29 scored above the criterion mean in all the items 40-46. Age group 30-34 years had the highest mean score of 2.64 on item 41, followed by item 45 ($\bar{x}$ = 2.58), and then item 40 ($\bar{x}$ = 2.52). Age group 30-34 scored above the criterion mean on four items (items 40, 41, 42 and 45) and below the criterion mean on three items (items 43, 44 and 46). The overall mean score for age group 15-19 years was 2.64; for age group 20-24 years was 2.41; for age group 25-29 years was 2.75; and for age group 30-39 was 2.49. Age group 25-29 years had the highest tertiary preventive sexual health behaviours mean score of 2.75 followed by age group 15-19 years ($\bar{x}$ = 2.64); 30- 34 years ($\bar{x}$ = 2.49); and 20-24 years ($\bar{x}$ = 2.41) in this their descending order of magnitude. This showed that age groups 15-19 years and 25-29 years scored above the criterion mean, while age groups 20-24 years and 30-34 years scored below the criterion mean. It implies that students in age groups 15-19 years and 25-29 years showed adequate tertiary preventive sexual health behaviours while students in age groups 20-24 and 30-34 did not show adequate tertiary preventive sexual health behaviours.

Research Question 12

What are the tertiary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State?

Table 12: Item by Item Mean Patterns of Tertiary Preventive Sexual Health Behaviours of Students of Different Years of Study.

S/N	Tertiary Preventive Behaviour	Year of Study				
		Yr 1 $\overline{X}$	Yr 2 $\overline{X}$	Yr 3 $\overline{X}$	Yr 4 $\overline{X}$	Yr 5 $\overline{X}$
40	He/she avoids self-medication if he/she acquires STI.	2.65	2.54	2.47	2.48	2.73
41	He/she takes thorough treatment to reduce the effect of the acquired STI.	2.48	2.93	2.79	2.76	3.02
42	He/she completes the treatment course if he/she acquires any STI.	2.46	2.90	2.66	2.76	3.10
43	If it is an incurable STI like HIV, He/she starts taking antiretroviral drug to stop early emergence of opportunistic disease.	2.34	2.73	2.83	2.76	2.98
44	Once on treatment, he/she keeps to his/her visiting days for medical check-ups.	2.35	2.88	2.53	2.86	2.71
45	Once infected, he/she uses condom to avoid infecting others.	2.36	2.68	2.79	2.67	2.83
46	He/she stops all forms of psychoactive drug while undergoing treatment for quick recovery.	2.25	2.99	2.76	2.76	2.81
	Grand Mean $\overline{x}$	2.41	2.81	2.69	2.72	2.88

Table 12 shows that year 1 students had the highest mean score of 2.65 on item 40 and the lowest mean score of 2.25 on item 46. Year 1 students scored above the criterion mean on only one item (item 40) out of the 7 items on tertiary preventive sexual health behaviour patterns and below the criterion mean on the remaining 6 items. The table also reveals that students in year 2 had the highest mean score of 2.99 on item 46, followed by item 41 ($\overline{x}$ = 2.93), and then item 42 ($\overline{x}$ = 2.90) and had the lowest score on item 40 ($\overline{x}$ = 2.54). Year 3 students had the highest mean score of 2.83 on items 43, followed by items 41 and 45 ($\overline{x}$= 2.79) respectively. Year 3 students had the lowest mean score of 2.47 on item 40. Year 4 students had the highest mean score of 2.86 on item 44, followed by items 41, 42, 43, and 46 with mean score of 2.76 each. Year 5 students had highest mean score of 3.10 on item 42, followed by item 41 ($\overline{x}$= 3.02) and then item 43 ($\overline{x}$ = 2.98), but had the lowest mean score on item 44 ($\overline{x}$= 2.71). Year 5 students had the highest overall mean score of 2.88

followed by year 2 students ($\bar{x}$ = 2.81) year 4 students ($\bar{x}$ = 2.72), year 3 students ($\bar{x}$ = 2.92), and year 1 students ($\bar{x}$= 2.41) in this their descending order of magnitude. The overall mean score as showed by the table shows that only year 1 students scored below the criterion mean, while students in other years of study scored above the criterion mean. This signifies that tertiary institution students of different years of study apart from year 1 students practised adequate tertiary preventive sexual health behaviour patterns in their sexual relationships

Hypothesis 1

There is no significant difference in the primordial preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.

Table 13: Summary of Z-test Analysis of the Responses of Male and Female Subjects in Relation to Their Patterns of Primordial Preventive Sexual Health Behaviour.

Group	N	Mean	Z-cal	P-value
Male	696	2.67		
			2.96	0.008
Female	560	2.85		

Table 13 presents the summary of z-test analysis of the responses of male and female subjects in relation to their patterns of primordial preventive sexual health behaviours. The table shows a z-calculated value of 2.96 and a critical value of .008 at 1254 degree of freedom. The null hypothesis was rejected ($P < 0.05$). Consequently, the conclusion therefore is that there was a significant difference in the patterns of primordial preventive sexual health behaviours of male and female tertiary institutions students in Imo State.

Hypothesis 2

There is no significant difference in the primordial preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State

Table 14: Summary of ANOVA Analysis of the Responses of the Subjects on Primordial Preventive Sexual Health Behaviour Patterns According to their Ages.

Source of variation	Sum of squares	Df	Mean square	F-cal	F-crit
Between groups	1367.89	3	455.96	7.58	.000
Within groups	75286.00	1252	60.13		
Total	76653.89	1255			

Table 4 presents the summary of ANOVA analysis of the responses of the subjects of different age groups on their primordial preventive sexual health behaviour patterns. The table shows an F. calculated value of 7.58 and a critical value of .000 at 3 and 1252 degrees of freedom. The hypothesis that there was no significant difference in the primordial preventive sexual health behaviour patterns of the students of different age groups was therefore rejected ($P < 0.05$). We therefore conclude that there was a significant difference among tertiary institution students of different age groups in Imo State in terms of their patterns of primordial preventive sexual health behaviours.

Table 15: Duncan's Multiple Range Test for Primordial Preventive Patterns
Means with the same letter are not significantly different while means with different letters are significant different

Age Groups	Mean	N	Grouping letter
15-19	2.73	124	B
20-24	2.77	608	B
25-29	2.63	388	C
30-34	2.84	136	A

The Duncan multiple range test reveals that there was a statistical significant difference in the primordial preventive sexual health behaviour patterns of age group 30-34 years from those of 25-29 years, 20-24 years and 15-19 years. The primordial preventive sexual health behaviour patterns of age group 15-19 and 20-24 years were significantly different from those of 25-29 years. Students of age group of 20-24 years and 15-19 years had no significant difference in their primordial preventive sexual health behaviour patterns.

Hypothesis 3

There is no significant difference in the primordial preventive sexual health behaviour patterns of students of different years of study in tertiary institution in Imo State.

Table 16: Summary of ANOVA Analysis of Responses of the Subjects on the Primordial Preventive Sexual Health Behaviour Patterns According to Their Year of Study

Source of Variations	Sum of squares	Df	Mean square	F-cal	F-crit
Between groups	1343.77	4	335.94	5.58	0.000
Within groups	75310.12	1251	60.20		
Total	76653.89	1255			

Table 16 presents the summary of ANOVA analysis of the responses of the subjects on their primordial preventive sexual health behaviour patterns. The table shows an F. calculated value of 5.58 and critical value of .000 at 4 and 1251 degrees of freedom. The hypothesis that there was no significant difference in the primordial preventive sexual health behaviour patterns of the students of different year of study was therefore rejected ($P < 0.05$). The conclusion therefore is that there was a significant difference in the patterns of primordial preventive sexual health behaviours of students of different years of study in tertiary institutions in Imo State.

Table 17: Duncan's Multiple Range Test for Primordial Preventive Patterns

Means with the same letter are not significantly different, while means with different letters are significantly different.

Year of Study	Mean	N	Grouping Letter
Years 1/HND 1	2.57	340	D
Year 2/HND 2	2.78	324	C
Year 3	2.56	223	D
Year 4	2.92	168	A
Year 5	2.85	192	B

The Duncan's multiple range test reveals that there was no significant difference in the primordial preventive sexual health behaviour patterns of students in years 1 and 3, since they had the same Duncan's grouping letter D. Students in all other years of study had

significant differences in their patterns of primordial preventive sexual health behaviours, since they had different Duncan's grouping letters.

Hypothesis 4

There is no significant difference in the primary preventive sexual health behaviour patterns of male and female student in tertiary institutions in Imo State.

Table 18: Summary of Z-test Analysis of the Responses of Male and Female Subjects on Patterns of Primary Preventive Sexual Health Behaviour.

Group	N	Mean	Z-cal	Z-crit
Male	696	2.53		
			2.68	0.015
Female	560	2.45		

Table 18 shows that the Z-calculated value for the two means was 2.68 with a significance (two-tail) probability of < 0.015 which was less than 0.05. Thus, the test was significant at 0.05 level of significance (P < 0.05). Therefore, the null hypothesis was rejected. We therefore conclude that there was a significant difference in the patterns of primary preventive sexual health behaviours of male and female students of tertiary institutions in Imo State.

Hypothesis 5

There is no significant difference in the primary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.

Table 19: Summary of ANOVA Analysis of the Responses of the Subjects on Primary Preventive Sexual Health Behaviour According to Their Ages.

Source of Variations	Sum of squares	Df	Mean square	F-cal	F-crit
Between groups	1967.43	3	655.81		
				6.78	0.000
Within groups	121019.68	1252	96.66		
Total	122987.11	1255			

Table 19 presents the summary of ANOVA analysis of the responses of the subjects of different age groups on their primary preventive sexual health behaviour patterns. The

table shows an F. calculated value of 6.78 and a critical value of .000 at 3 and 1252 degrees of freedom. The hypothesis that there was no significant difference in the primary preventive sexual health behaviour patterns of the subjects of different age groups was therefore rejected ($P < 0.05$). We therefore conclude that there was significant difference in the patterns of primary preventive sexual health behaviours of students of different age group in tertiary institutions in Imo State.

Table 20: Duncan Range Test for Primary Preventive Patterns.

Means with the same Letter are not significantly different whiles means with different letters are significant different.

Age group	Mean	N	Grouping letter
15-19	2.28	124	C
20-24	2.48	608	B
25-29	2.59	388	A
30-34	2.25	136	C

The Duncan multiple range test reveals that there was a statistical significant difference in the patterns of primary preventive sexual health behaviour of age group 25-29 years from those of 30-34 years, 20-24 years and 15-19 years age groups. There was no significant difference in the primary preventive sexual health behaviour patterns of age groups 30-34 years and 15-19 years.

Hypothesis 6

There is no significant difference in the primary preventive sexual health behaviour patterns of students of different years of study in tertiary institution in Imo State.

Table 21: Summary of ANOVA Analysis of the Responses of the Subjects on Primary Preventive Sexual Health Behaviours According to Their Year of Study.

Source	Sum of squares	Df	Mean	F-cal	F-crit
Year of Study	2069.03	4	517.26	5.35	0.000
Error	120918.07	1251	96.66		
Corrected Total	122987.10	1255			

Table 21 presents the summary of ANOVA analysis of the responses of the subjects of different age groups on their primary preventive sexual health behaviour patterns. The table shows an F. calculated value of 5.35 and a critical value of .000 at 4 and 1251 degrees of freedom. The hypothesis that there was no significant difference in the primary preventive sexual health behaviour patterns of the subjects of different age groups was therefore rejected ($P < 0.05$). The conclusion therefore is that there was significant difference in the patterns of primary preventive sexual health behaviour of students of different years of study in tertiary institutions in Imo State.

Table 22: Duncan's Multiple Range Test for Primary Preventive Patterns
Means with the same letter is not significantly different while means with different letters are significantly different.

Year of Study	Mean	N	Grouping Letter
Years 1/HND 1	2.36	340	B
Year 2/HND 2	2.51	324	A
Year 3	2.54	232	A
Year 4	2.55	168	A
Year 5	2.59	192	A

The Duncan's multiple range test reveals that there was significant difference in the primary preventive sexual health behaviour patterns of students in year 1 from those in years 2, 3, 4 and 5 respectively, whereas, there was no significant difference in the primary preventive sexual health behaviour patterns of students in Year 2, 3, 4 and 5, since they had the same Duncan's grouping letters.

Hypothesis 7

There is no significant difference in the secondary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.

Table 23: Summary of Z-test Analysis of the Responses of Male and Female Subjects on Patterns of Secondary Preventive Sexual Health Behaviour.

Group	N	Mean	Z-cal	Z-crit
Male	696	2.68		
			1.79	0.092
Female	560	2.52		

The result in table 25 shows that the z-calculated value for the two means was 1.79 with a significance (two-tail) probability of 0.092, which is greater than 0.05. Thus the analysis did not show significant different of the responses at 0.05 level of significance, since P > 0.05. Therefore, the null hypothesis was accepted. We therefore conclude that there was no significant difference in the patterns of secondary preventive sexual health behaviour of male and female students in tertiary institutions in Imo State.

Hypothesis 8

There is no significant difference in the secondary preventive sexual behaviour patterns of students of different age groups in tertiary institutions in Imo State.

Table 24: Summary of ANOVA Analysis of the Responses of the Subjects on Secondary Preventive Sexual Health Behaviours According to Their Ages.

Source of Variations	Sum of squares	Df	Mean	F-cal	F-crit
Between groups	178.58	3	59.53		
				1.57	0.193
Within groups	47254.78	1252	37.74		
Total	47433.36	1255			

Table 24 reveals the summary of ANOVA analysis of the responses of the subjects on their patterns of secondary preventive sexual health behaviours. The table shows an F. calculated value of 1.57 and a critical value of 0.193 at 3 and 1252 degree of freedom. The hypothesis that there was no significant difference in the secondary preventive sexual health behaviour patterns of the subject of age groups was therefore accepted (P > 0.05). We therefore conclude that there was no statistical significant difference in the secondary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.

Hypothesis 9

There is no significant difference in the secondary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.

Table 25: Summary of ANOVA Analysis of the Responses of The Subjects on Secondary Preventive Sexual Health Behaviours According to Their Year of Study.

Source of Variations	Sum of squares	Df	Mean	F-cal	F-crit
Between groups	701.82	4	175.45	4.70	0.001
Within groups	46731.55	1251	37.36		
Total	47433.37	1255			

Table 25 presents the summary of ANOVA analysis of the responses of the subjects of different year of study on their secondary preventive sexual health behaviour patterns. The table shows an F. calculated value of 4.70 and a critical value of .001 at 4 and 1251 degrees of freedom. The hypothesis that there was no significant difference in the secondary preventive sexual health behaviour patterns of the subjects of different year of study was therefore rejected ($P < 0.05$). The conclusion therefore is that there was significant difference in the patterns of secondary preventive sexual health behaviours of students of different years of study in tertiary institutions in Imo State.

Table 26: Duncan's Multiple Range Test for Secondary Preventive Patters.

Means with the same letter are not significantly different, while means with different letters are significantly different.

Year of Study	Mean	N	Grouping Letter
Years 1/HND 1	2.50	340	C
Year 2/HND 2	2.61	232	B
Year 3	2.52	324	C
Year 4	2.68	168	B
Year 5	2.90	192	A

The Duncan's Multiple Range test reveals that there was no significant difference in the patterns of secondary preventive sexual health behaviours of students in Years 1 and Year 3, and Years 2 and 4, since both groups had the same Duncan's grouping letters C and B

respectively. Students in Years 1, 2, 4 and 5 of study had significant differences in their patterns of secondary preventive sexual health behaviour, since they had different Duncan's grouping letter, while students in Year 5 mean patterns significantly differs from those in all other groups.

Hypothesis 10

There is no significant difference in the tertiary preventive sexual health behaviour patterns of male and female students in tertiary institutions in Imo State.

Table 27: Summary of Z-test Analysis of the Responses of Male and Female Subjects on Patterns of Tertiary Preventive Sexual Health Behaviours.

Group	N	Mean	Z-cal	Z-crit
Male	696	2.73		
			2.68	0.020
Female	560	2.68		

The result in table 29 shows that the z-calculated value for the two means was 2.68 with a significance (two-tail) probability of < 0.020 which was less than 0.05. Thus the test was significant at 0.05 level of significance since P < 0.05. Therefore the null hypothesis was rejected. We therefore conclude that there was a significant difference in the patterns of tertiary preventive sexual health behaviours of male and female students in tertiary institutions in Imo state.

Hypothesis 11

There is no significant difference in the tertiary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.

Table 28: Summary of ANOVA Analysis of the Responses of the Subjects on Tertiary Preventive Sexual Health Behaviours According to Their Ages.

Source of Variations	Sum of squares	Df	Mean Square	F-cal	F-crit
Between groups	105.70	3	35.24		
				1.22	0.302
Within groups	36270.26	1252	28.97		
Total	36375.96	1255			

Table 28 reveals the summary of ANOVA analysis of the responses of the subjects on their tertiary preventive sexual health behaviour patterns. The table shows an F. calculated value of 1.22 and a critical value of 0.302 at 3 and 1252 degrees of freedom. The hypothesis that there was no significant difference in the tertiary preventive sexual health behaviour patterns of the subject of different age groups was therefore accepted (P > 0.05). We therefore conclude that there was no statistical significant difference in the tertiary preventive sexual health behaviour patterns of students of different age groups in tertiary institutions in Imo State.

Hypothesis 12

There is no significant difference in the tertiary preventive sexual health behaviour patterns of students of different years of study in tertiary institutions in Imo State.

Table 29: Summary of ANOVA Analysis of the Responses of the Subjects on Tertiary Preventive Sexual Health Behaviours According to Their Year of Study.

Source of Variations	Sum of squares	Df	Mean Square	F-cal	F-crit
Between groups	919.30	4	299.83	8.11	0.000
Within groups	35456.66	1251	28.34		
Total	36375.96	1255			

Table 29 presents the summary of ANOVA analysis of the responses of the subjects on their tertiary preventive sexual health behaviour patterns. The table reveals an F. calculated value of 8.11 and a critical value of 0.000 at 4 and 1251 degrees of freedom. The hypothesis that there was no significant difference in the tertiary preventive sexual health behaviour patterns of the subjects different year of study was therefore rejected (P < 0.05). We therefore conclude that there was significant difference in the patterns of tertiary preventive sexual health behaviours of students of different years of study in tertiary institutions in Imo State.

Table 30: Duncan's Multiple Range Test for Tertiary Preventive Patterns.
Means with same letter are not significantly different while means with different letters are significantly different.

Year of Study	Mean	N	Grouping Letter
Years 1/HND 1	2.41	340	D
Year 2/HND 2	2.81	324	A
Year 3	2.69	232	C
Year 4	2.72	168	B
Year 5	2.88	192	A

The Duncan's Multiple Range test reveals that there were significant differences in the patterns of tertiary preventive sexual health behaviours of students in the following pairs of years of study, since they had different Duncan's grouping letters: (1) Year 1 and year 2 (ii) year 1 and year 3, (iii) Year 1 and year 4, (iv) Year 1 and Year 5 (v) Year 2 and Year 3 (vi) Year 2 and Year 4 (vii) Year 3 and Year 4 (viii) Year 3 and Year 5, and (ix) Year 4 and Year 5. Students in Year 2 and Year 5 did not have statistical significant difference in their tertiary preventive sexual health behaviour patterns, since they had the same Duncan's grouping letters.

Hypothesis 13

There is no significant interaction effect of gender, age and year of study on the primordial preventive sexual health behaviour patterns of tertiary institution students

Table 31: Summary of ANCOVA Analysis of Gender, Age and Year of Study of Students on Their Primordial Preventive Sexual Health Behaviour Patterns. (N = 1256).

Source	Type III sum of squares	Df	Mean square	F-ratio	P-value
Corrected model	1097819.22 [a]	23	47731.27	810.90	0.000
Gender	228.80	1.	228.80	3.89	0.049
Age group	394.26	3	131.42	2.23	0.083
Years	99.99	4	25.00	0.43	0.79
Gender and Age	157.26	3	52.42	0.89	0.455
Gender and year	360.40	4	90.10	1.53	0.191
Age and year	412.23	5	82.45	1.40	0.221
Gender, Age and Year of Study	221.92	2	110.96	1.89	0.152
Error	72576.78	1233	58.86		
Total	1170396.00	1256			

Table 31 above presents the interaction effect of gender, age and year of study on the patterns of primordial preventive sexual health behaviours of tertiary institution students in Imo State. The effect of gender and age on the dependent variable showed an interaction that was not significant (F = 0.89, P = 0.455). Effect of gender and year of study also showed an interaction that was not significant (F = 1.53, P = 0.191). Effect of age and year of study showed an interaction that was not significant (F = 1.40, P = 0.221). There was no evidence of a significant interaction effect of gender, age and year of study on primordial preventive sexual health behaviours pattern observed (F = 1.89, P = 0.15). This showed that when the three factors were combined, their interaction had no significant effect on the dependent variable.

Hypothesis 14

There is no significant interaction effect of gender, age and year of study on primary preventive sexual health behaviour patterns of tertiary institution students

Table 32: Summary of ANCOVA Analysis of Gender, Age and Year of Study of Students on Their Primary Preventive Sexual Health Behaviour Patterns Using Factorial Design (N = 1256).

Source	Type III sum of squares	df	Mean square	F-ratio	P-value
Corrected model	2591388.81 [b]	23	112669.08	1219.29	0.000
Gender	320.59	1	320.59	3.47	0.063
Age group	1394.44	3	464.81	5.03	0.002
Years	1073.83	4	268.46	2.91	0.021
Gender and Age	198.29	3	66.10	0.75	0.543
Gender and year	572.96	4	143.24	1.55	0.185
Age and year	1853.93	5	370.79	4.01	0.001
Gender, Age and Year of Study	341.00	2	170.50	1.85	0.158
Error	113936.193	1233	92.41		
Total	2705325.00	1256			

Table 32 shows the interaction effect of gender, age and year of study on the patterns of primary preventive sexual health behaviours of tertiary institution students in Imo State. The effect of gender and age on the dependent variable showed interaction that was not significant (F = 0.75, P = 0.543). The effect of gender and year of study of the students showed an interaction that was not significant (F = 1.55, P = 0.185). Effect of age and year of the students showed an interaction that was significant (F = 4.01, P = 0.001). There was no evidence of a significant interaction effect of gender, age and year of study on primary preventive sexual health behaviour patterns observed (F = 1.85, P = 0.158). This showed that when the three factors were combined, their interaction had no significant effect on the dependent variable.

Hypothesis 15

There is no significant interaction effect of gender, age and year of study on secondary preventive sexual health behaviour patterns of tertiary institution students in Imo State.

Table 33: Summary of ANCOVA Analysis of Gender, Age and Year of Study of Students on Their Secondary Preventive Sexual Health Behaviour Patterns Using Factorial Design (N = 1256).

Source	Type III sum of squares	df	Mean square	F-ratior	P-value
Corrected model	748483.50 [c]	23	32542.76	891.76	0.000
Gender	1.48	1	1.48	0.04	0.840
Age group	451.56	3	105.52	4.13	0.006
Years	66.12	4	16.53	0.45	0.770
Gender Age	211.30	3	70.43	1.93	0.123
Gender year	247.11	4	61.78	1.69	0.149
Age year	859.23	5	171.85	4.71	0.000
Gender Age Year of Study	25.738	2	12.87	0.35	0.703
Error	44995.45	1233			
Total	792479.00	1256			

Table 33 shows the interaction effect of gender, age and year of study of the students on their patterns of secondary preventive sexual health behaviours of tertiary institution students in Imo State. The effect of gender and age on the dependent variable showed a cross-over interaction that was not significant (F = 1.93, P = 0.123). Effect of gender and year of study depicted a cross-over interaction that was not significant (F = 1.69, P = 0.149). Effect of age and year of study on the secondary preventive sexual health behaviour patterns of the subjects showed a cross over interaction that was significant (F = 4.71, P = 0.000). There was no evidence of a significant interaction effect of gender, age and year of study on the secondary preventive sexual health behaviour patterns of tertiary institution students (F = 0.35, P = 0.703). This showed that when the three factors were combined, their interaction had no significant effect on the dependent variable.

Hypothesis 16

There is no significant interaction effect of gender, age and year of study on tertiary preventive sexual health behaviour patterns of tertiary institution students in Imo State.

Table 34: Summary of ANCOVA Analysis of Gender, Age and Year of Study of Students on Their Tertiary Preventive Sexual Health Behaviour Patterns Using Factorial Design (N = 1256).

Source	Type III sum of squares	df	Mean square	F-ratio	P-value
Corrected model	468955.44 [d]	23	20389.37	742.72	0.000
Gender	23.82	1	23.82	0.87	0.352
Age	279.39	3	93.13	3.39	0.017
Year	503.65	4	125.91	4.59	0.001
Gender and Age	206.74	3	68.91	2.51	0.057
Gender and Year	141.62	4	35.41	1.29	0.275
Age and Year	635.27	5	127.05	4.63	0.000
Gender, Age and Year of Study	15.09	2	7.55	0.28	0.760
Error	33848.56	1233	27.45		
Total	502804.00	1256			

Table 34 reveals the interaction effect of gender, age and year of study on the patterns of tertiary preventive sexual health behaviours of tertiary institution students in Imo State. The effect of gender and age on the tertiary preventive sexual health behaviour patterns showed an interaction that is not significant (F = 2.51, P = 0.057). The effect of gender and year of study showed a cross over interaction that is also not significant (F = 1.29, P = 0.275). The effect of age and year of study on the tertiary preventive sexual health behaviour patterns showed a cross-over interaction that is significant (F = 4.63, P = 0.000). There is no evidence of a significant interaction effect of gender, age and year of study on tertiary preventive sexual health behaviour patterns of tertiary institution students (F = 0.28, P = 0.760). This shows that when the three factors were combined, their interaction had no significant effect on the dependent variable. In summary, hypothesis 13 is accepted since P > 0.005 in the primordial, primary, secondary and tertiary preventive sexual health behaviour patterns of tertiary institution students in Imo State.

Summary of Major Findings

The summary of major findings as guided by the research questions explored and the tested corresponding hypotheses are presented as follows:

1. Females had higher mean score ($\overline{x}$ =2.85) on the patterns of primordial preventive sexual health behaviours than males that had 2.67 mean score (see table 1).
2. Tertiary institution students in age group 30-34 years had the highest mean score ($\overline{x}$ = 2.84) on the primordial preventive sexual behaviour patterns, while those in age group 25-29 years had the lowest mean score of 2.63 (See table 2).
3. Tertiary institution students in year four had the highest mean score of 2.92 on the patterns of primordial preventive sexual health behaviours, while those in year 3 had the least mean score of 2.56 (see table 3).
4. Males had higher mean score of 2.53 on patterns of primary preventive sexual health behaviours than females that had 2.45 mean score (see table 4).
5. Respondents in age group 20-24 years had the highest mean score of 2.59 on the patterns of primary preventive sexual health behaviours, while those in age group 15-19 years had the lowest mean score of 2.25 (see table 5).
6. Students in year 5 had the highest mean score of 2.59 on the patterns of primary preventive sexual health behaviours, while those in year 1 had the lowest mean score of 2.36 (see table 6).
7. The mean score of 2.68 of patterns of secondary preventive sexual health behaviours of males was higher than that of females whose mean score was 2.52 (see table 7).
8. Tertiary institution students in age group 20-24 years had the highest mean score of 2.64 on the patterns of secondary preventive sexual health behaviours, while those in age group 15-19 years had the lowest mean score of 2.42 (see table 8).

9. Respondents in year 5 had the highest mean score of 2.90 on the patterns secondary preventive sexual health behaviour patterns, while those in year 1 had the lowest mean score of 2.50 (see table 9).
10. The mean score ($\bar{x}$=2.73) of patterns of tertiary preventive sexual health behaviours of males was higher than that of females whose mean score was 2.68 (see table 10).
11. Tertiary institutions students in age group 25-29 years had the highest mean score of 2.75 on the patterns of tertiary preventive sexual health behaviours, while those in age group 20-24 years had the lowest mean score of 2.41 (see table 11).
12. Tertiary institution students in year 5 had the highest mean score of 2.88 on the patterns of tertiary preventive sexual health behaviours, while those in year 1 had the lowest mean score of 2.41 (see table 12).
13. There was significant difference in the patterns of primordial preventive sexual behaviours of male and female students ($P < 0.05$) (see table 13).
14. There was significant difference in the patterns of primordial preventive sexual health behaviours of students of different age groups ($P < 0.05$) (see table 15)
15. There was significant difference in the patterns of primordial preventive sexual behaviours of students of different years of study ($P < 0.05$).
16. There was significant difference in the patterns of primary preventive sexual health behaviours of male and female students ($P < 0.05$) (see table 19).
17. There was significant difference in the pattern of primary preventive sexual health behaviours of students of different age groups ($P < 0.05$) (see table 21).
18. There was significant difference in the patterns of primary Preventive sexual health behaviours of students of different years of study ($P < 0.05$) (see table 23).
19. There was no significant difference in the patterns of secondary preventive sexual health behaviours of males and females ($P > 0.05$) (see table 25).

20. There was no significant difference in the patterns of secondary preventive sexual behaviours of students of different age groups (P>0.05). (See table 26)
21. There was significant difference in the patterns of secondary preventive sexual health behaviours of students of different years of study (P < 0.05) (see table 27).
22. There was significant difference in the patterns of tertiary preventive sexual health behaviours of male and female students (P < 0.05) (see table 29).
23. There was no significant difference in the patterns of tertiary preventive sexual health behaviours of students of different age groups (P > 0.05) (see table 31).
24. There was significant difference in the patterns of tertiary preventive sexual health behaviours of students of different years of study (P < 0.05) (see table 32).
25. There is no significant interaction effect of gender, age and year of study on the primordial, primary, secondary and tertiary patterns of preventive sexual health behaviours of tertiary institution students (P > 0.05) (see tables 31- 34).

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter discusses the major findings of this study in relation to the stated research questions and hypotheses. The study was designed to determine the patterns of preventive sexual health behaviours of tertiary institution students in Imo State. It also presents the conclusion drawn from the findings, recommendations, implication of the study, and suggestions for further research.

Primordial preventive sexual health behaviour patterns of the tertiary institution students.

The findings of the study revealed that tertiary institution students showed adequate primordial preventive sexual health behaviours. This finding could be attributed to the understanding of the students of the role of primordial preventive sexual health behaviours in reducing the chances of an individual contracting STIs. This understanding might have helped youths to recognize and label risk factors of STI as high risk, as well as make commitment to reduce high-risk sexual activities as derived from AIDS Risk Reduction Model (Catania, Kegoles & Coates, 1990) upon which this study is based. Primordial preventive sexual health behaviours highly shown by the respondents as revealed by the findings were; not sharing injecting-drug instrument, not accepting transfusion of unscreened blood, and not sharing sharp objects (e.g. razor). This finding might be attributed to knowledge of the preventive measures of HIV among youths. The report of Oladimeje and Mojisola (2011) and Ruiker (2013) that 87.8 per cent of youths knew the causes and preventive measures of HIV, as well as have high level of HIV related knowledge is in line with this finding. The assertion that knowledge might have contributed to the adequate practice of primordial preventive sexual health behaviours is supported by Agha, et al. (2006) finding which revealed that 71.8 per cent of Imo State youths knew that STIs could be

prevented through use of condom, sexual abstinence, not sharing sharp objects, and blood screening before transfusion.

The result in table 1 showed that females exhibited primordial preventive sexual health behaviours more than males. The finding on hypothesis 1 showed that there was significant difference in the patterns of primordial preventive sexual health behaviousr of male and female students ($P < 0.05$). This finding could be attributed to the fact that females are more concerned about risk reduction than males. Drawing from AIDS Risk Reduction Model, knowledge of sexual activities associated with sexually transmitted infections and believing that one is susceptible to contracting STIs helps one to make a commitment to reduce high-risk sexual contacts and increase low risk sexual activities. This could be achieved through information seeking, obtaining remedies, and enacting solutions. The finding is supported by the findings of Walsh and Ward (2010) that females scored significantly higher than males in preventive sexual health behaviours.

This finding could be connected to the tertiary institution environment offering female students freedom from some cultural inhibition which prevented them from discussing sexual issues while in their homes. As revealed by East and Khoo (2005), estrangement at home often leads female youths to seek appropriate sexual knowledge once they have a changed environment. This appropriate sexual knowledge sorted for, may help the female students establish healthy sexual relationship. Another study finding in consonant with the finding in this study is the finding of Jodati, et al. (2007) which revealed that female University students in Iran showed preventive sexual behaviours more than the males. Also Testa and Coleman (2006) reported higher overall preventive sexual behaviours of female youths than male youths. The findings from this study also corroborated with the finding of Nwoke and Okafor (2014) that males indulge more in sexual behaviours than females. These sexual behaviours are usually risky and unprotected.

The findings is at variance with Adetunji (2002) which revealed that females showed lower preventive sexual behaviours due to burden placed on the female youths by cultural and expectations. For instance, in some societies, it is a cultural taboo for females to initiate any safe sex practice, while it is not so for males. In Nigerian culture, especially in Igbo culture of which Imo State is one of the states, females are relatively not allowed to discuss sexual issue openly.

The result in table 2 showed that youths in age group 30-34 years practised adequate primordial preventive sexual health behaviours more than youths in the other age groups (15-19 years, 20-24 years and 25-29 years). The finding on hypothesis 2 revealed that there was a significant difference in the patterns of primordial preventive sexual health behaviours of youths of different age groups. From the finding, youths in all the different age groups observed adequate primordial preventive sexual behaviours, although there was no sequential increase in mean as the students advanced in age. The finding that youths in age group 15-19 years practised adequate primordial preventive sexual health behaviours more than youths in age groups 20-24 years and 25-29 years was surprising. This finding may be attributed to the youngest age group (15-19 years) being adolescents.

Adolescence age is associated with curiosity. This makes adolescent seek information and knowledge especially in the areas of sexual health. This knowledge when adequately used may help youths of this age practise adequate primordial preventive sexual health behaviours. The older age groups (20-24 years and 25-29 years) may have accurate and adequate information and knowledge of primordial preventive sexual health behaviours but may be deterred to exhibit such due to certain characteristics associated with their age. This assertion is supported by Agweda, et al. (2012) who revealed that gap existed between knowledge of STIs and preventive sexual health behaviours of youths of their study. This

discrepancy was associated with youths' characteristics which included among others, indulgence in impulsive sexual behaviours, sexual exploration and implementation.

On the other hand, the finding of the oldest age group (30-34 years) showing the highest primordial preventive sexual health behaviours was expected. This is because age plays a significant role on patterns of preventive sexual health behaviours. This affirms the report of Trenholm, et al. (2008) that age influences not only the acquisition of information and knowledge of primordial prevention of STIs but also the application of such information and knowledge. Moreover, variables influencing patterns of primordial preventive sexual health behaviours such as knowledge, mass media, and peer pressure may interact with age.

From the facts above, one can conclude that youths at the highest and lowest age groups (30-34 years and 15-19 years) exhibited adequately primordial preventive sexual health behaviours more than youths at the middle age groups (20-24 years and 25-29 years). This finding is in line with The National Bureau of Statistics (2010); Exavery, et al. (2011); and Njua, et al. (2013b) which showed that the likelihood of actual preventive sexual behaviours was higher among older youths (25-34 years old) than their younger youth counterparts (15-24 years old). This observation could possibly be attributed to knowledge differences regarding transmission and prevention of sexually transmitted infections (STIs) due to longer sensitization messages on ways of preventing them. The finding is further corroborated by Slap, et al. (2005), and Underwood, et al. (2006) which showed that increase in age was associated with self-confidence which is a factor to exhibiting primordial preventive sexual health behaviours**.**

The mean patterns of primordial preventive sexual health behaviours of students of different years of study as presented in table 3 showed that year 4 students had the highest mean of 2.92, while year 3 students had the lowest mean score of 2.56. The finding on hypothesis 3 revealed that there was a significant difference in the patterns of primordial

preventive sexual health behaviours of students of different years of study. The higher mean score 2.92 of year 4 students over that of 2.85 for year 5 students indicated that year 4 students practised adequate primordial preventive sexual health behaviours more than year 5 students. This finding was surprising. One would have expected that year 5 students would show adequate primordial preventive sexual health behaviours more than year 4 students since they had one academic year of study over year 4 students. But the finding revealed otherwise. This finding is consistent with Magnani, et al. (2002) who reported that knowledge influences sexual health behaviours positively only when the individual involved appreciates and applies the knowledge correctly.

The finding also revealed that year 1 students scored lower than year two students. This finding was expected. This is because the tertiary institution environment and campus life may predispose the students, especially the newly admitted students to risks such as sexual health risks. This assertion is supported by Okpani (2009); and Imaledo, et al. (2013) who reported that most newly admitted tertiary students see entering school as an opportunity to live a 'free man's life. This they do by initiating activities, including sexual activities without protection. Year 2 students showing primordial preventive sexual health behaviour more than year 1 students could be attributed to increase in sexual health knowledge and experience. These might have motivated them to a change in sexual behaviour. For instance, some institutions expose year 1 students to sexual health education as a general study course. Sexual health knowledge acquired through this course might have contributed immensely to positive change in sexual behaviour among year 2 students. This assertion corroborated with Sabia (2006) who reported experience and knowledge as factors that influence sexual health behaviour positively. The result is also consistent with the finding of Ochueng, et al. (2011) that sex education exerts great influence in promoting preventive reproductive and sexual health behaviour among youths.

The mean score of year 3 students being the lowest was surprising. One would have expected them to have higher mean score than years 1 and 2 students, but the finding revealed otherwise. This may be attributed to behavioural change process which occurs in stages. The stages as revealed by Steven (2007) are initiation, maintenance, cessation and relapse. For instance, these students may have initiated more risky sexual behaviour as newly admitted (year 1) students. Most of these students may have ceased from such behaviour due to knowledge and experience acquired in year 2, but some of these students may have relapsed in their third year. In summary, from the finding on the interaction between year of study and primordial preventive sexual health behaviours, one can conclude that mere acquisition of adequate sexual health knowledge may not bring a corresponding positive change in behaviour unless such knowledge is applied.

Primary preventive sexual health behaviour patterns of the tertiary institution students

This finding obtained in the study showed that female students did not exhibit adequate primary preventive sexual health behaviours while their male counterparts did. This is revealed by the overall mean score on table 2. The mean score for male students was 2.53, while female students had the mean score of 2.45 which is below the criterion mean. This finding is in line with Habef (2009) who reported that young girls (youths) were less able to refuse sex, or less able to insist on adequate protection. This finding is also consistent with Agha, et al. (2006) who observed that cultural expectations place a lot of burden on female youths and thus affects their preventive sexual health behaviour. This finding is in consonant with McManus and Dhar (2008) who reported that males showed preventive sexual behaviours more than females. This finding might be attributed to gender inequality and socio-cultural norms. The assertion of Reece, et al. (2010) that males are more and earlier exposed to sexual concepts, and had more confidence than females in initiating safe sex was in line with this finding. This finding contradicts the findings of Magnani, et al. (2002) which

showed that more females than males exhibited adequate primary preventive sexual health behaviours. The reason for this difference may be because this study used only in-school youths, while both in-school youths and out-of-school youths were used by Magnani, et al. in their study. The finding on hypothesis 4 showed gender difference in the patterns of primary preventive sexual health behaviours. This means that gender influences patterns of primary preventive sexual health behaviours of youths.

The result in table 4 revealed that males used condom to protect themselves more than females. This finding is expected and could be attributed to availability, accessibility and affordability of male condom. Drawing from Health Belief Model (HBM), when perceived benefits of behaviour outweighs its perceived barriers, the likelihood of the individual exhibiting such behaviour is high. Therefore, the availability, accessibility and affordability of male condom might have helped male students overcome the barriers that might have hindered them from exhibiting adequate primary preventive sexual health behaviours. This finding is corroborated by Bozicevic, et al. (2006) who reported that 59 per cent of male youths and 21 per cent of female youths used condom. The finding is also in line with Prata, et al. (2005); Asekun-Olarinmoye and Oladile (2009); and Reece, et al. (2010) which revealed higher condom use among males than females. This gender differential may be attributed to culture. As revealed by Brown (2001), culture presents some privileges to males but females are not given such privileges. The Nigerian culture places females in sexual disadvantage situation as asserted by Erken and Desiderio (2002). For instance, males are allowed to take their sexual decision, as well as discuss issues regarding to sexual health, while females' sexual life is controlled by males in most cases. This cultural privilege may help to expose males to certain experiences. The experiences in turn may help their perception of risks. As postulated in Health Belief Model, perceived susceptibility and severity of a disease are strong predictors of preventive sexual health behaviours. Therefore,

males' positive perception of susceptibility to STIs due to sexual experimentation may explain their use of condom more than females. The finding disagreed with Kissinger, et al. (2008) who reported consistent and higher condom use among commercial sex female workers than men that patronize them. The reason for this may be because the job of female commercial sex workers exposes them to having sex with different men. Therefore, this experience might have made them resort to condom use in order to protect themselves from sexually transmitted infections.

The result from the study revealed that males maintained monogamous relationships, had fewer sexual partners, and avoided premarital sex more than females. This finding is surprising to the researcher. Naturally, one would have expected the reverse, since gender inequality, gender-role stereotype and culture place females in a disadvantaged situation. This finding may be attributed to the socio-economic status of females in the study. Since females are restricted to experiment with sex freely, they may resort to secret sexual activities which are usually risky and unprotected. They may also seize any opportunity or freedom such as leaving the home environment for school to indulge in sexual activities. Females' low income status may predispose them to have sex for money. This assertion is supported by World Health Organization (WHO) and UNAIDS (2009) which reported that low income status of females caused them to trade sex for money or rely on 'sugar daddies' for economic needs. This act alone puts females at risk of STIs. The finding is in line with Babalola (2005); WHO (2008); Adebiyi and Azuzu (2009); Agweda, et al. (2013) and Njua, et al. (2013) submission that female youths' less economic autonomy had negative influence on their preventive sexual health behaviours. Based on the above facts, one can conclude that inadequate practices of certain primary preventive sexual health behaviours by female youths could be attributed to low income status of females.

Some findings that are at variance with this finding include Kirby, et al. (2008); Jomean and Whitefield (2010); Kopele and Shumber (2011); and Hensel and Fortenbery (2013) which revealed that males indulged in sexual activities, as well as had more sexual partners than females. The reason for this variance could be because these studies were carried out in developed countries where the males and females are giving equal privileges. The finding also disagreed with the finding of Oladimeji and Mojisola (2011) that fewer males than females abstained from pre-marital sex.

The finding on the primary preventive sexual health behaviour patterns further revealed that more females than males practise sexual abstinence. This finding was expected and can be attributed to fear of pregnancy and cultural values. This assertion is consistent with the finding of Hulton, et al. (2000) that knowledge of STIs risk and fear for pregnancy influence patterns of preventive sexual health behaviours of female tertiary institution students positively. The finding of higher rate of sexual abstinence among females than males is in consonant with Maguen and Armisteed (2006) and Oladimeji and Mojisola (2011) who reported that females abstain from sex more than males.

The finding revealed that males go for STI testing than females since males scored higher than females, though only males show this behavior as revealed by their mean score ($\bar{x}$ = 2.52). The mean score ($\bar{x}$= 2.45) revealed that females did not show adequate primary preventive sexual health behaviours. This finding was expected since females shy away from anything that has to do with sex, ranging from discussing about sex openly to seeking sexual health services. For instance, female youths may not like to visit sexual health clinics because to the society, it suggests sexual involvement and presence of STI. This finding is consistent with the finding of Fonk, et al. (2002) which showed gender difference in health seeking for STIs in favour of males. The conclusion therefore is that males of this study went for STIs test more than females.

The result on table 5 as regards to the patterns of primary preventive sexual health behaviours of tertiary institution students of different age groups showed that age group 20-24 year practised adequate primary preventive sexual health behaviours, while students in the other age groups showed inadequate behaviours. The finding on hypothesis 5 revealed a statistical significant difference in the patterns of primary preventive sexual health behaviours of tertiary institution students of different age groups. This finding shows that age influences primary preventive sexual health behaviours. This finding is in agreement with the finding of Centre for Disease Control and Prevention (2010) which revealed that primary sexual health behaviours decision-making among youths of their study differs by age. The finding that students in age groups 15-19 years, 25-29 years, and 30-34 years did not practise adequate primary preventive sexual health behaviours was not expected. This is because students in all the age groups practised primordial preventive sexual health behaviours adequately. Therefore one would have expected same on their practice of primary preventive sexual health behaviours. This finding is in line with Trajman, et al. (2008) who reported that only 34 per cent out of 94 percent of youths in their study exhibited primary preventive sexual health behaviour despite their awareness that these behaviours reduce an individual's chances of contracting sexually transmitted infection. Isiugo-Abanife, et al. (2007); Tsiksika, et al. (2010) and Envulado, et al. (2013) reported that most youths of different age groups do not exhibit adequate primary preventive sexual health behaviours. Ochueng, et al. (2011) also reported that though most youths knew the efficacy of patterns of preventive sexual health behaviours in preventing STIs, they still indulge in risky sexual behaviours rather than showing adequate preventive sexual health behaviours.

The mean score of patterns of primary preventive sexual health behaviours of students of different age groups did not present any specific sequence among the different age groups. Ordinarily, one would have expected that age group 30-34 years would have the highest

mean score followed by 25-29 years age group, 20-24 years age group and then 15-19years. In this finding, age group 30-34 years and 15-19 years had almost the same mean score (30-34 years, $\bar{x}$= 2.28; 15-19 years, $\bar{x}$= 2.25 respectively). This finding could be explained by the reason that behaviours are formed over time from multifarious influences existing in an individual's environment including beliefs, values and norms. These influences are strongly rooted and cut across age groups. Therefore, establishing a sequential trend in behaviour among the different age groups may be difficult. This is because, behaviour can be exhibited or changed at any stage in life based on the individual's experience and decision.

This finding is in consonant with Kopele and Slumbber (2011) who revealed that youths aged 20-25 years in their study adopted and maintained primary preventive sexual health behaviours more than older youths. Low (2004) finding that age was not significantly related to primary preventive sexual behaviours is also in agreement with this finding. The finding contradicts the findings of Tanzanian Demographic and Health Survey (2010); Exavery, et al. (2011) and Njua, et al. (2013a) that primary preventive sexual health behaviours was higher among older youths, age 25-34 years than their younger counterparts aged 15-24 years. The finding also disagreed with the finding of Bearman and Brucker (2001) that younger youths shyed away from initiating safe sex patterns due to lack of confidence than older youths. The finding of no specific sequence among the different age groups in their primary preventive sexual health behaviours is at variance with the finding of Ruiker (2003) that primary preventive sexual behaviour increases with age. The basis of this contradiction could be attributed to difference in study areas. The study of Ruiker was carried out in a developed country while this study is conducted in a developing country. From the above facts, one can conclude that establishing a sequential trend in primary preventive sexual health behaviours among different age groups of youths may be difficult because of the interaction among age, environment, beliefs, values and norms in behaviour formation.

The mean score of patterns of primary preventive sexual health behaviours of tertiary institution students of different years of study in table 6 revealed a sequential increase as the students advance in years of study. The finding on hypothesis 6 revealed that there was a statistical significant difference in the patterns of primary preventive sexual health behaviours of tertiary institution students of different years of study. This finding showed that year of study plays a role in the practice of primary preventive sexual health behaviours. This finding was expected because of the fact that knowledge plays a role in sexual behaviours. This finding is supported by the finding of Slap, et al. (2003) which revealed that knowledge influences sexual behaviours positively. The result regarding the sequential increase in mean score as the students advanced in year of study was not surprising because knowledge as revealed by Adebiyi and Azuzu (2009) is one of the moderator variables that modify patterns of preventive sexual health behaviours.

Drawing from the theory of Reasoned Action, the likelihood that an individual will engage in preventive sexual health behaviours depends on how much the individual is convinced (through knowledge) that such behaviour will prevent him/her from contracting sexually transmitted infections. As students advanced in years of study, they equally advanced in acquisition of knowledge. The acquired knowledge may play a role in modification of sexual behaviours. This assertion is supported by Jomeen and Whitefield (2010) who revealed that knowledge of sexual health increased proportionately in line with preventive sexual activity. The finding of year 1 students having the lowest mean score, as well as not showing adequate patterns of primary preventive sexual health behaviours was expected. The reason is because the tendency of them being influenced by peer pressure is high. This assertion is supported by Maguen and Armisteed (2005) report that the odd of an adolescent engaging in sex is 2 to 4 times higher if same-sex close friends are sexually active. This shows that peer group influence strongly predicts sexual behaviours during adolescences

more than in adulthood. Fraser (2007) also found that peer group attitude about sex influences the attitude and sexual behaviours of younger youths aged 15-18 years.

This finding that students show primary preventive sexual health behaviours more as they advanced in year of study was in contrast with Pinder-Bulter, et al. (2013) report that tertiary institution students in lower level of study (year of study) had accurate knowledge of primary preventive measures of STIs and as well practised safe sex more than those in higher level of study. This finding may be based on the fact that year I students are always curious to learn. Information given to them at this time is usually held tenaciously and used.

Secondary preventive sexual health behaviours of the tertiary institution students

Table 7 showed that male students attended regular medical check-up, sought immediate health care when STI is suspected, and started treatment early more than female students. This finding is surprising to the researcher because females are known to play sick role naturally. It is expected that this attribute of theirs should make them seek health care services more than males. This finding may be attributed to female's disadvantaged social, cultural and legal status. These factors as reported by Luke (2003) contributed to restrictions of access to affordable quality sexual health services, lack of control over preventive sexual health decision-making; and insufficient protection of ethnic rights such as right to confidentiality, dignity and respect. This coupled with the fear of 'being seen entering' sexual health care clinics may deter female youths from seeking sexual health care services and on time too. This finding is consistent with Jha and Thaker (2010) assertion that males sought health care services (including preventive sexual health care services) earlier and more than females. But contradicts the finding of Ruiker (2013) that more females than males seek sexual health care services. The basis for this contradiction was not clearly established since the respondents for the study were undergraduates. From the above facts, one can conclude

that females' disadvantaged social, cultural and legal status dissuade them from practising certain secondary preventive sexual health behaviours adequately.

The finding on patterns of secondary preventive sexual health behaviours further revealed that males notified their sexual partners if they contracted STI, while females did not show this behaviour adequately. This finding was not surprising because males are usually outspoken, free and confident in sexual matters while females are secretive in nature. This finding affirms the assertion of Tolli (2012) that males in their study were more and earlier exposed to sexual concepts, had confidence than females, and openly discussed about their sexual matters.

The finding also revealed that males insisted on their sexual partners getting treated, abstained from sex to avoid re-infection, and took medication as prescribed by medical personnel than females. This finding showed that males of this study were more concerned about sexual health than females. The finding also revealed that more females than males had STI screening after being sexually assaulted. This finding may be because more females than males are sexually assaulted. This assertion is in consonant with Zimmerman (2006) who reported that females in his study reported forced sex, gang rape, degrading sexual abuse and coerced misuse of oral contraceptives than males.

The overall mean score of 2.68 for males and 2.52 for females showed that both adequately exhibited secondary preventive sexual health behaviours, though males showed these behaviour more than females. The finding on hypothesis 7 showed that there was no significant difference in the patterns of secondary preventive sexual health behaviours of male and female students ($P > 0.05$). This finding of no significant difference was expected. It could be attributed to the freedom from certain cultural expectations given to the female students by the tertiary institution environment. In the tertiary institutions, they have ample opportunity to do so, since the barrier is removed by the change of environment.

The finding that students of age group 15-19 years did not show adequate secondary preventive sexual health behaviours was expected. This is because, at this age, youths do not have the confidence to discuss sexual issues with parents and health care providers. This lack of confidence was attributed to poor parent-adolescent relationship. Open parental communication with adolescents about sex may promote self-confidence, as well as reduce involvement in risky sexual behaviours. This assertion is affirmed by Manlon (2003); and Forehand, et al. (2007) who reported that the quality of parent-adolescent relationship was linked to good self-control, high resistance efficiency, and less adolescent risk taking behaviour (including sexual risk taking behaviour). Therefore, good parent-adolescent communication may promote preventive sexual health behaviours. But as revealed by Fraser (2007) most parents do not communicate sexual issues with their adolescents. This according to Fraser creates the room for youths to turn to peers for sexual health information and knowledge, and therefore may not have the boldness to exhibit secondary preventive sexual health behaviours. From the facts above, one can generally conclude that males practise adequate secondary preventive sexual health behaviours more than females.

The finding of the result presented in table 8 on patterns secondary preventive sexual health behaviours also revealed that age groups 20-24 years and 25-29 years had the highest and very close mean scores of 2.64 and 2.65 respectively. The mean scores indicated that both age groups showed adequate secondary preventive sexual health behaviours. This result was expected because as youths advance in age, they become more confident to discuss assumed sensitive issues such as sexual matters. Besides, youths at this age have gradually moved from adolescent stage into adulthood, and are now faced with realities of life. This finding is in line with the findings of Centre for Disease Control and Prevention (2000) that preventive sexual health decision-making among youths differs by age and that youths aged

22-30 showed secondary preventive sexual health behaviours more than those beyond or above this age.

The mean score of age group 30-34 years being lower than the mean scores of age groups 20-24 and 25-29 years was expected. The reason is because at age 30-34 years, most youths are married and are now faced with family challenges. These family challenges coupled with lowered sexual instinct in older youths might have influenced their secondary preventive sexual health behaviours. Youths who are not married at this age, may no longer be reliant on their parents to meet their personal needs but may be faced with financial responsibilities both to self, siblings and parents. To make ends meet, they become preoccupied and may not be bothered about sexual health matters and problems. The finding on hypothesis 8 showed that there was no significant difference in the patterns of primary preventive sexual health behaviours of students of different age groups. This finding of age not having any significant influence on their sexual behaviours was unexpected. This is because age had been found to play a significant role on sexual health behaviours. This is supported by the findings of Trenholm, et al. (2008), Exavery, et al. (2011), and Njua, et al. (2013) which revealed that age influenced the acquisition and application of sexual health knowledge, as well as sexual heath behaviours of youths in their studies.

The results in table 9 showed that students in year 5 practised adequate secondary preventive sexual health behaviours more than students in the other years of study. The finding on hypothesis 9 revealed that there was a significant difference in the patterns of secondary preventive sexual health behaviours among students of different years of study. This finding that year of study influences secondary sexual health behaviours was not surprising. This is because acquisition and application of knowledge coupled with exposure and experience influence sexual behaviours. Drawing from the Theory of Reasoned Action, the likelihood that an individual will engage in sexual health risk reduction behaviours

depended on how much he or she is convinced that such behaviours would prevent him or her from contracting STIs. Therefore, knowledge influences sexual behaviours. The finding that year 1 students had the lowest mean score while year 5 students had the highest means score was expected. This is because students in year 5 were expected to have more knowledge on sexual health than those in year 1. This is consistent with Ruiker (2013) who reported that undergraduates who were in higher level of study (year of study) had moderate level of STI knowledge, while those in lower level of study had low level of STIs' knowledge. This finding is contradicted by Trajman, et al. (2008) who reported that students' level of secondary preventive sexual knowledge was not proportionate to their exhibition of these behaviours. This may be attributed to poor or lack of knowledge application.

The finding that year 2 students had higher mean score than year 3 students was surprising. This may be attributed to the fact that one may have knowledge but fails to apply it when situation arises. This finding is in consonant with the findings of Magnani, et al. (2002) which revealed that knowledge could promote positive sexual behaviour if such knowledge was applied correctly. The finding contradicts the findings of Gregson, et al. (2002) and Slap, et al. (2003) which showed that knowledge of risk is a more protective factor against risky sexual behaviours. From the above facts, one can conclude that generally, students in upper years of study practise adequate secondary preventive sexual health behaviours more than students in lower years of study.

Patterns of tertiary preventive sexual health behaviours of tertiary institution students

The findings of this study revealed that the youths exhibited tertiary preventive sexual health behaviours. This finding is supported by the postulation of the Health Belief Model (HBM) that perceived severity which could be based on medical report is related to adaptive preventive sexual health behaviours among youths. Janz and Becker (1984); and Rosenstock, et al. (1994) reported that perceived susceptibility and perceived severity are stronger

predictors of preventive health behaviour than sick role behaviour. The signs and symptoms, as well as the knowledge of health complications of STIs might have played a significant role in motivating the students to exhibit tertiary preventive sexual health behaviours.

The mean scores of tertiary preventive sexual health behaviours of students presented in table 10 revealed that males had higher mean score of 2.73 than the females who had 2.68 mean score. The finding on hypothesis 10 revealed that there was a statistical significant difference in the patterns of tertiary preventive sexual health behaviours of male and female tertiary institution students. This finding was expected. The reason for this finding might be because males have more knowledge and confidence in sexual matters than females. This assumption is in line with the postulation of The Health Belief Model that gender is a modifier variable of sexual behaviours. The finding of Obaid (2003) and, Erken and Desiderio (2002) which revealed that males in their studies had more knowledge, skills, confidence and courage in sexual matters than females is in concurrence with the assumption for this finding.

The finding of males showing adequate tertiary preventive sexual health behaviours than females is in consonant with Fonk, et al. (2002) who reported that females in their study delayed health seeking for STIs while males did not. This finding was not surprising because females by nature and nurture shy away from sexual issues. The finding could be attributed to gender-role stereotype which tends to have negative effect on females while it favours males. Males in Nigerian society are assumed to have the right by culture to be in-charge of their sexual life. They are decision-makers in matters relating to sexual relationship. Most at-times, they plan and prepare for sexual activities unlike females who are usually lured or coerced into it. This may be one of the reasons males protect themselves through practicing preventive sexual health behaviours. Again, some sexually transmitted infections such as syphilis are more pronounced in males than in females. This may also be one of the reasons

why males showed tertiary preventive sexual health behaviours than females. This finding was in line with the report of Luke (2003) that gender-role stereotype favoured males in his study in a number of ways than females. The finding of several studies had attributed the gender difference in sexual health behaviours to socio-cultural and psychological norms (Abdou, 2002; Adetunji, 2002; Family Health International, 2013; Glover, et al., 2013; Karim, et al., 2012; Nwoke and Okafor, 2014; Turmen, 2000; Zelina, 2009). Change in gender-norm can enhance females' self-concept, as well as help females negotiate their preventive sexual health behaviours Therefore, gender difference should be specifically addressed in sexual health. This is because, if males show preventive sexual health behaviours and females do not, heterosexual males are still at high risk of contracting STIs. To curb the high incidence rate of STIs among youths as reported by Imaledo, et al., (2012); and Envulado, et al., (2013), both males and females should show adequate preventive sexual health behaviours.

The mean scores of patterns of tertiary preventive sexual health behaviours of tertiary institution students of different age groups was presented table 11. The table revealed that age group 25-29 years had the highest mean score of 2.75; while age group 20-24 years had the lowest means score of 2.41. The finding revealed that students in age groups 25-29 years and 15-19 years practised adequate tertiary preventive sexual health behaviours, while students in age groups 20-24 years and 30-34 years showed inadequate tertiary preventive sexual health behaviours. The result on age groups 30-34 years students recording inadequate behaviours was not surprising. This is because initiation and maintenance of preventive sexual health behaviour, as well as cessation and relapse can occur at any age. Sexual activeness associated with youths is reduced at this age and students at this age group show less sexual health concern when compared with youths at younger age groups. This assertion is supported by Kissinger (2012) who reported that youths aged 20-29 showed tertiary preventive sexual

health behaviours more than their counterparts aged 30-39 years. The finding corroborates with Low (2004) who reported that age was not significantly related to preventive sexual behaviours among tertiary institution students of his study. This could be attributed to the fact that change in behaviour can occur at any age based on knowledge, environment and values. The finding on hypothesis 11 revealed that there was no significant difference in the patterns of tertiary preventive sexual health behaviours of students of different age groups. This finding was expected. This is because tertiary preventive sexual heath behaviours may be practiced by only those who had contracted STIs. Since the contraction of STIs cuts across age, so does the practice of tertiary preventive sexual health behaviours.

Table 12 revealed the mean scores of patterns of tertiary preventive sexual health behaviours of students of different years of study. The finding showed that the students exhibited tertiary preventive sexual health behaviours. The finding also revealed that Year 5 students practised tertiary preventive sexual health behaviours more adequately than students of the other years of study. Year 1 students as revealed by the finding did not show adequate tertiary preventive sexual health behaviours. The finding on the response of year 1 students was expected because they were still adjusting to the tertiary institution environment which was quite different from what was obtainable in their different homes. As newly admitted students, those in year 1 may not really know who to confide in about sexual health issues and may not be acquainted with where to obtain sexual health care services. This may hinder them from exhibiting adequate tertiary preventive sexual health behaviours. On the other hand, ignorance and misconception about sexual health issues might be high among this group of students. From the facts on the influence of year of study on the tertiary preventive sexual health behaviours, one can conclude that students in upper years of study practised adequate tertiary preventive sexual health behaviours, while those in year 1 showed inadequate tertiary preventive sexual health behaviours. . The finding on hypothesis 12

revealed that there was a statistically significant difference in the patterns of tertiary preventive sexual health behaviours of tertiary institution students of different years of study. This implies that year of study influences these behaviours. The finding was expected because as earlier reported, acquisition and application of knowledge influences sexual behaviours.

The findings on hypothesis 13 revealed that there was no significant interaction effect of gender and age on the primordial, primary, secondary and tertiary preventive sexual health behaviours. The finding also revealed that there was a significant interaction effect of age and year of study on these preventive sexual health behaviours. This finding was expected because age and level of education are among the variables that influence sexual behaviours as postulated in health belief model. This finding is supported by the findings of Centre for Diseases Control and Prevention (2013) which revealed that the interaction of age and level of education had significant influence on the sexual behaviours of youths in their study

In summary, the result of hypotheses 13 revealed that there was no significant interaction effect of gender, age and year of study on the primordial, primary, secondary and tertiary preventive sexual health behaviours. This finding was not expected. This is because when these independent variables' (gender, age and year of study) effect were singly tested on the dependent variables (primordial, primary, secondary and tertiary preventive sexual health behaviours) most of the result revealed significant effects on the dependent variables. The reason for this difference might be because of the combination of these independent variables. This finding is supported by the finding of Uzoma (2014) which revealed that the interaction of gender, age and year of study had no significant effect on the sexual behaviours of youths of her study.

Conclusions

The present study has been able to determine the patterns of preventive sexual health behaviours of tertiary institution students in Imo State. The patterns of preventive sexual health behaviours were sub-divided and discussed under the following: primordial preventive sexual health behaviour; primary preventive sexually health behaviours; secondary preventive sexual health behaviour; and tertiary preventive sexual health behaviours. The study revealed that the patterns of primordial preventive sexual health behaviours as indicated by the respondents differed by gender. It was indicated that females showed primordial preventive sexual health behaviours more than males. The study also revealed that patterns of primordial preventive behaviours differed by age and year of study. Students in age group 30-34 years showed primordial preventive sexual health behaviours more than students in other age groups while students in age group 25-29 years showed primordial preventive sexual behaviours lower than students in all other age groups. Though students in different years of study exhibited adequate primordial preventive sexual health behaviours, students in year 4 showed primordial preventive sexual health behaviours more than students in all other years of study. This implies that tertiary institution students in Imo State exhibited primordial preventive sexual health behaviours, though the patterns of these behaviours differ by gender, age and year of study.

On the primary preventive sexual health behaviours, it was indicated that tertiary institution students' patterns of primary preventive sexual health behaviour differed significantly by gender, age and year of study of the students. Males showed primary preventive sexual health behaviours more than females as revealed by the study. The study also showed that age group 20-24 years exhibited adequate primary preventive sexual health behaviours. All the students in different years of study expect year 1 students, showed primary preventive sexual health behaviours. Findings on the patterns of secondary

preventive sexual health behaviours of tertiary institution students indicated that the secondary preventive sexual health behaviours patterns of the respondents did not differ by gender and age but by the students' year of study.

The study also revealed that the patterns of tertiary preventive sexual health behaviours as indicated by the respondents differed by gender. It was indicated that male students showed adequate tertiary preventive sexual health behaviours than female students. The study also revealed that patterns of tertiary preventive sexual health behaviours differed by year of study. Students in year 1 did not show adequate tertiary preventive sexual health behaviours, while students in all other years of study did. The tertiary preventive sexual health behaviour patterns as indicated by respondents did not differ by age.

In conclusion, tertiary institution students showed adequate primordial, secondary and tertiary preventive sexual health behaviours. It is imperative to state here that reduction in the incidence of sexually transmitted infections among youths depends greatly on their quality of primary preventive sexual health behaviours they show. This is because primary preventive sexual health behaviours aim at preventing sexually transmitted infection from occurring in healthy individuals while primordial, secondary and tertiary preventive sexual health behaviours aim at preventing the risk factors; early detection; and helping people manage complicated long-term sexually transmitted infections. Therefore, aiming at preventing the occurrence of STIs in healthy population is considered by the researcher as the best approach to reducing the incidence of STIs among youths.

Implications of the Study

This study has shown that patterns of preventive sexual health behaviours vary among youths based on age, gender and year of study. Therefore it can be said that age, gender and year of study have implication on the patterns of preventive sexual health behaviours. The finding on gender shows that males exhibited preventive sexual health behaviours more

adequately than females. Therefore, there is need to address gender-inequality. Female youths should be given the same legal right, as well as cultural privileges given to male youths. Unless this issue of gender-inequality is keenly addressed, females may continue to shy away from sexual matters. To improve classic sexual health indicators and promote preventive sexual health behaviours among male and female youths, public health personnel and specifically sexual health personnel should make their services gender friendly. On the other hand, human right activists should work against the cultural norms that stigmatize female youths.

The older youths showed preventive sexual health behaviours more than the younger youths. Therefore, younger youths should be the priority target for sexual health promotion by sexual health promoters. Since sexually transmitted infections (STIs) is usually asymptomatic or in most cases the symptoms manifests several years after infection, it is expected that younger youths be targeted so as to reduce the incidence of STIs among the older youth population. Students in upper years of study exhibited preventive sexual health behaviours more than students in lower years of study as revealed by the findings. The implication is that youths at lower years of study should be targeted by sexual health personnel, health educators and non-governmental organizations in the area of sexual health. This will help in arresting the cases of sexually transmitted infection among youths. The reason is because solution of any problem such as sexually transmitted infection lies in the identification of the etiology of such problem.

Recommendations

Based on the findings of the study, and the conclusion drawn, the following recommendations are made:

1. Government, non-governmental agencies and tertiary institutions should establish youth friendly and supportive programmes. Such programmes should be gender and age specific, with the aim of promoting preventive sexual health behaviours among youths, through dissemination of adequate sexual health knowledge and skills to promote and improve their sexual health.
2. Youths of various age groups should be empowered educationally by health educators on health benefits of preventive sexual health behaviours. This will help to improve their self-confidence, as well as motivate them to seek sexual health care.
3. Tertiary institutions and youth organizations in the area of health should organize sexual health orientation seminar for students who gained admission newly into the universities. This will help to equip the newly admitted students with the necessary sexual health knowledge they need to promote their sexual health through preventive sexual health behaviours.
4. Youths of different age groups, years of study and gender should be encouraged by sexual health care providers and NGOs to seek preventive sexual health information and knowledge via the internet. This will help in promoting their sexual health status.

Limitations of the Study

In the course of carrying out this study, the researcher was faced with some constraints which were the major limitations of the study. Monotechnic students could have been included for better coverage but the researcher was limited by resources. Some students were indifferent in responding to some items in the questionnaire due to large number of items continued in the instrument. However, the intervention of the heads of department

thought the course representative helped to checkmate this challenge in the way that it did not produce negative effect on the research findings. It only affected the questionnaire return rate. Initially, some female students shied away from responding to items on secondary preventive behaviours but after being assured by the researcher and the trained assistants on the confidentiality of their responses, many of them complied. The major constraint in this study was that very few studies have been conducted in the area of preventive sexual health behaviour in and outside the country. This restricted the researcher to limited data.

Suggestion for Further Research

Drawing from the findings of this research, further research could be carried out on:

1. Barriers to Preventive sexual health behaviours among in-school and out of school youths.
2. Predictors of preventive sexual health behaviours.
3. Comparative studies on the sexual health status and behaviours of youths.
4. Socio-demographic variables affecting preventive sexual health behaviours of young persons.
5. Perception of youths on the health risks of inadequate practices of preventive sexual health behaviours.

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APPENDIX A
QUESTIONNAIRE

Department of Human Kinetics and Health Education,
Faculty of Education,
Nnamdi Azikiwe University
Awka, Anambra State.
4th March, 2015.

Dear respondent,

PATTERNS OF PREVENTIVE SEXUAL HEALTH BEHAVIOURS TOWARDS SEXUALLY TRANSMITTED INFECTIONS AMONG TERTIARY INSTITUTION STUDENTS IN IMO STATE, NIGERIA.

The researcher is a Ph.D student of the Nnamdi Azikiwe University, Akwa. The researcher is currently carrying out a research work on the Patterns of Preventive Sexual Health Behaviours about Sexually Transmitted Infection among Tertiary Institution Students in Imo State.

Please you are kindly requested to respond honestly to the items in this questionnaire as they appeal to you. Your sincere response will contribute a great deal in facilitating the study. Any information given will be strictly for the research purpose, as well as treated with utmost confidentiality.

Yours sincerely,

Fidelis, Mary Ndubuisi

Attached Instructions to the Respondents

1. Do not write your name nor the name of your friend.
2. Do not write the name of your school.
3. Do an independent work so that you will be objective and your neighbor will not influence your choice of option?
4. At the end, the papers will be mixed up and yours will not be identified.
5. Tick one option for a particular question.
6. In sections B- E under the options: Never, Sometimes, Most of the time and Always, you pick the one that applies to your friend based on the question.
7. Sexual abstinence means not having any form of sexual activity.
8. Foreplay means carousing, kissing.

Section A: Personal Data

Instruction: Please indicate your response by ticking (√) in the appropriate columns provided.

To which **age group** does your friend belong?

a. 15-19 ▱

b. 20-24 ▱

c. 25-29 ▱

d. 30-34 ▱

2. What is your friend's **gender** (sex)?

a. Male ▱

b. Female ▱

3. Indicate your friend's **year of study**

a. Year 1/ HND 1▱

b. Year 2/HND 2 ▱

c. Year 3 ▱

d. Year 4 ▱

e. Year 5 ▱

Section B: Patterns of Preventive Sexual Health Behaviour

Instruction: please indicate your honest response with a tick (√) in the appropriate column corresponding to the items 4-49 on what you know about the sexual behaviour of some of your friends in your school that are of the same **sex, age bracket and year of study with you**.

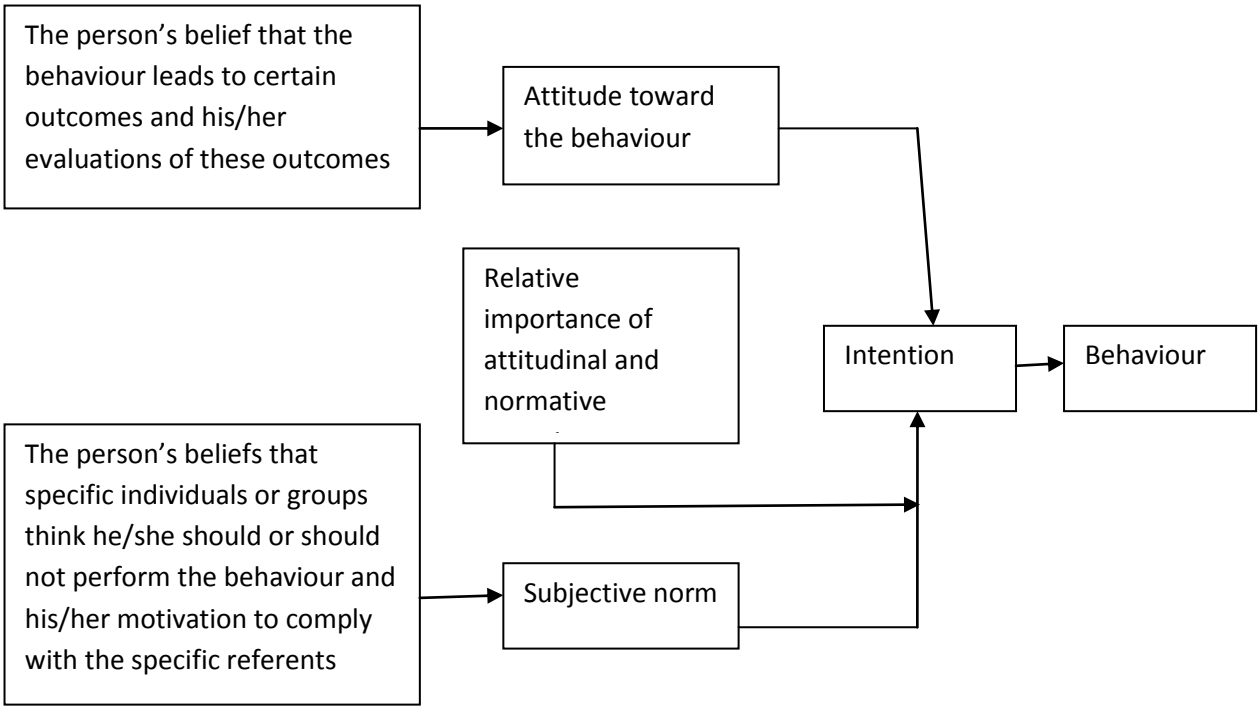
S/N	Primordial preventive patterns	Never	Some times	Most of the time	Always
4	He/she avoids sharing inner wears with friends.				
5.	He/she avoids using drugs prior to sexual intercourse.				
6.	He/she avoids the use alcohol prior to sexual intercourse.				
7.	He/she avoids sharing injecting –drug instrument (e.g syringe) with friends.				
8.	He/she does not accept the transfusion of unscreened blood only from people.				
9	He/she cleans public toilet surface thoroughly with disinfecting agents (e.g. soap, alcohol) before use.				
10	He/she is not easily swayed by friends' negative view about sex.				
11	He/she avoids sharing sharp objects (e.g. razor) with people.				
12	He/she say no to unprotected sexual advances.				
13.	He/she uses condom despite the belief that it reduces sexual pleasure.				
14.	He/she avoids watching pornographic films				
Primary Prevention					
15.	He/she initiates the topic of safe sex with his/her potential sexual partner				
16	He/she avoids direct contact with his/her sexual partner's blood.				
17	He/she insists on correct condom use during sexual intercourse				
18	He/she stops foreplay long enough to put on a condom				
19.	He/she maintains a long term mutual monogamous relationship with an uninfected person				

		Never	Some times	Most of the time	Always
20.	He/she avoids direct contact with his/her sexual partner's semen or vaginal secretions				
21	He/she avoids having sex with different sex partners.				
22	He/she practices sexual abstinence				
23	He/she abstains from sex when he/she does not know his/her partner's sexual history.				
24.	He/she insists on his/her partner getting tested for STI.				
25	He/she uses condom if he/she knows an encounter may lead to sexual intercourse.				
26.	If his/her partner insists on sexual intercourse without condom, he/she refuses sex.				
27	He/she visits health care centres for pre-exposure vaccination.				
28	He/she avoids causal sex.				
29	He/she uses condom consistently.				
30	He/she avoids all forms of pre-marital sex.				
31	He/she insists on knowing the STI status of his/her partner before sexual intercourse.				
32	He/she avoids oral sex.				
33	He/she checks his/her STI regularly.				
	Secondary preventive behaviour patterns				
34	He/she attends regular medical check-ups.				
35	He/she seeks immediate health care, if he/she suspects any STI symptom.				
36	He/she resorts to early treatment once diagnosed with STI.				
37	He/she notifies his/her sexual partner if he/she contracts STI				
38	He/she insists on his/her partner getting treated if he/she acquired any STI				
39	Once undergoing STI treatment, He/she abstains from sex to avoid re-infection.				
40	He/she takes his/her medicine as prescribed by his/her doctor to prevent complications.				

		Never	Some times	Most of the time	Always
41.	He/she attends STI screening if he/she is sexually assaulted.				
42	He/she waits until STI becomes pronounced before going for STI screening.				
	Tertiary Preventive behaviour patterns				
43	He/she avoids self-medication if he/she acquires STI.				
44	He/she takes thorough treatment to reduce the effect of the acquired STI.				
45	He/she completes the treatment course if he/she acquires any STI.				
46	If it is an incurable STI like HIV, He/she starts taking antiretroviral medicine to stop early emergence of opportunistic disease.				
47	Once on treatment, he/she keeps to his/her visiting days for medical check-ups.				
48	Once infected, he/she uses condom to avoid infecting others.				
49.	He/she stops all forms of psychoactive drug while undergoing treatment for quick recovery.				

Appendix B

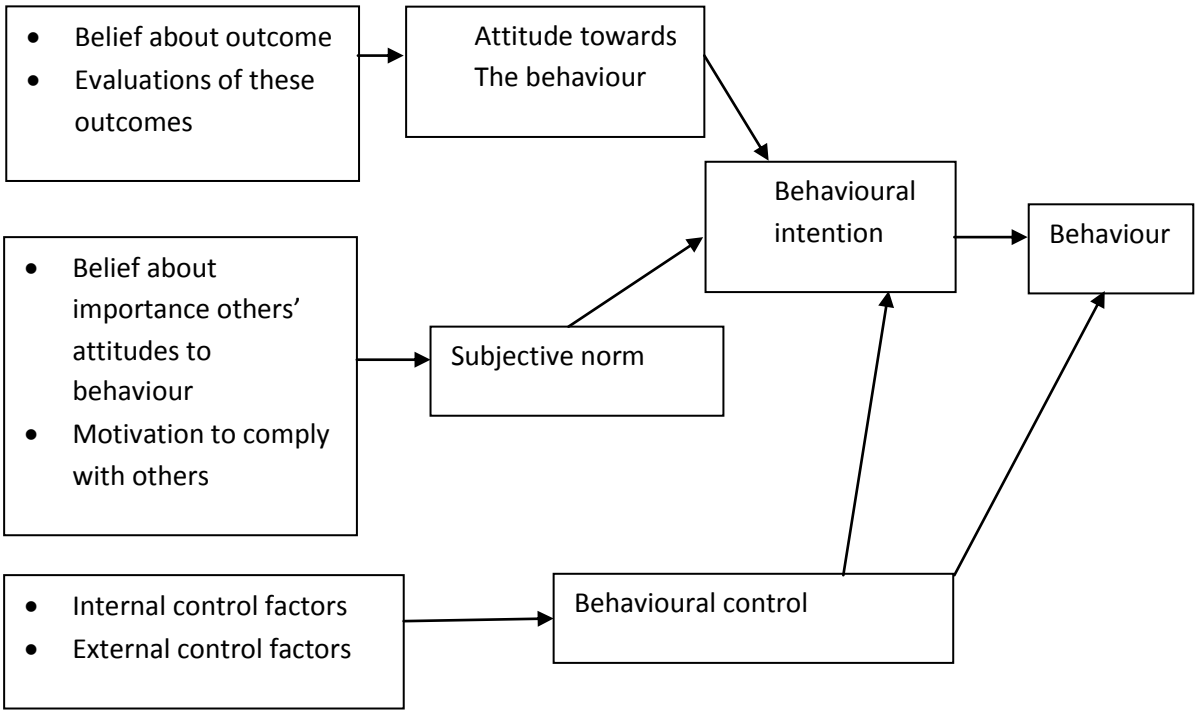
Theory of Reasoned Action



Source: Ajen, I. &Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. New Jersey: Prentice-Hall, Inc.

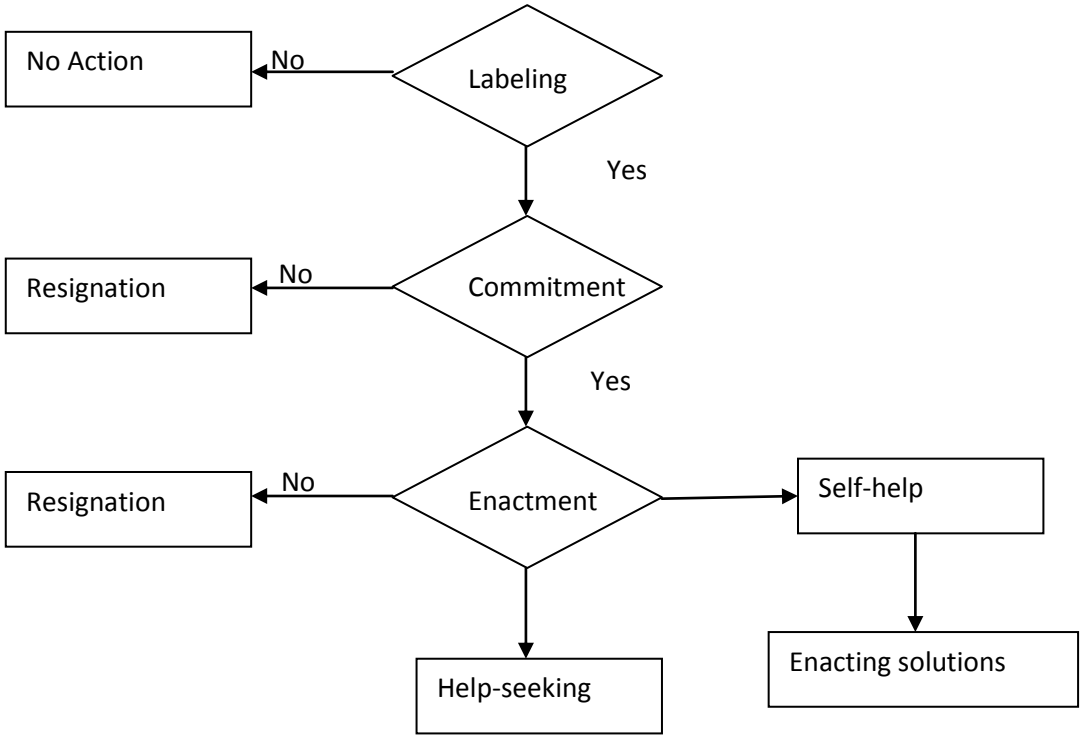
Appendix C

The Theory of Planned Behaviour



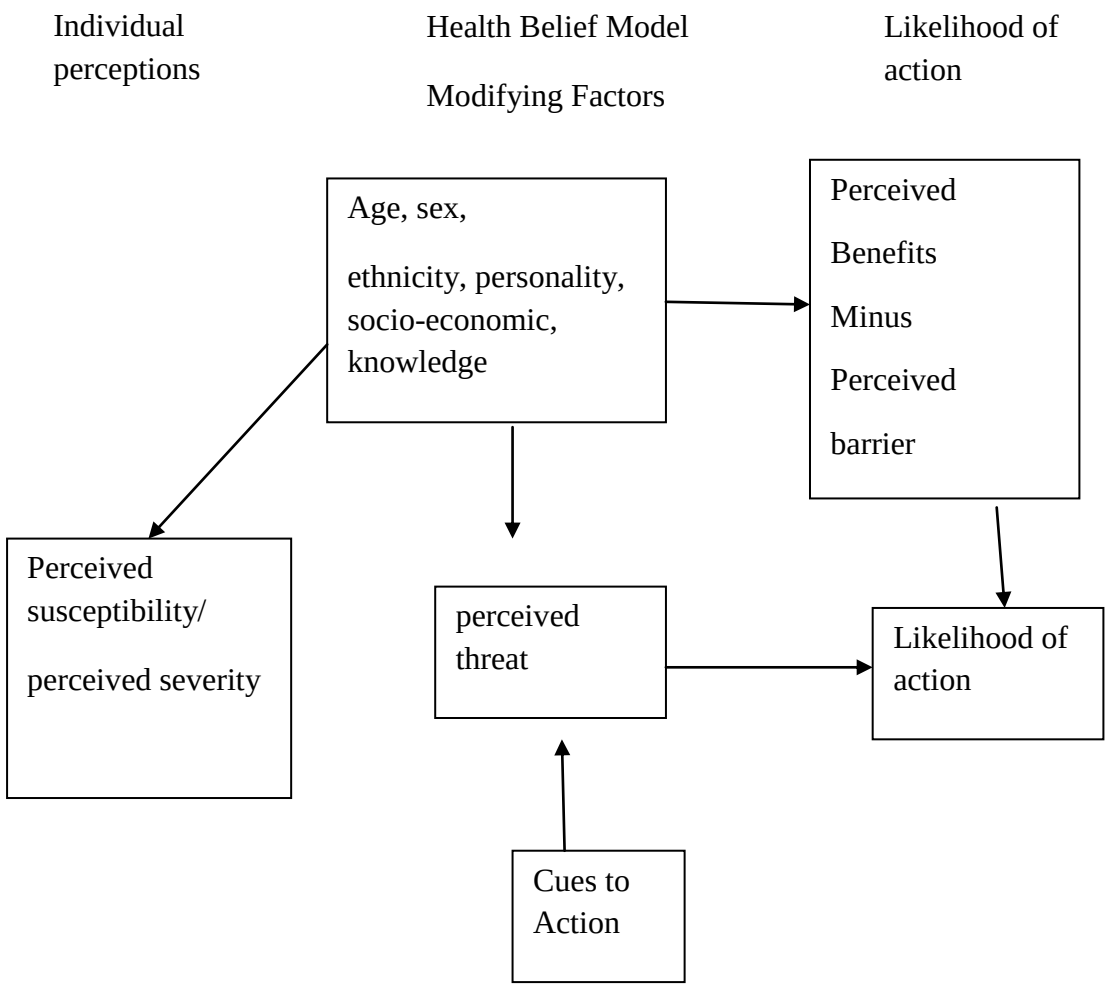
Appendix D

AIDS Risk Reduction Model



Source: Catania, J.A., Kegeles, S.M., & Coastes, T.J. (1990). Towards an understanding of risk behaviour: An AIDS risk reduction model (ARRM). Health Education Quarterly, 17(1): 53-72.

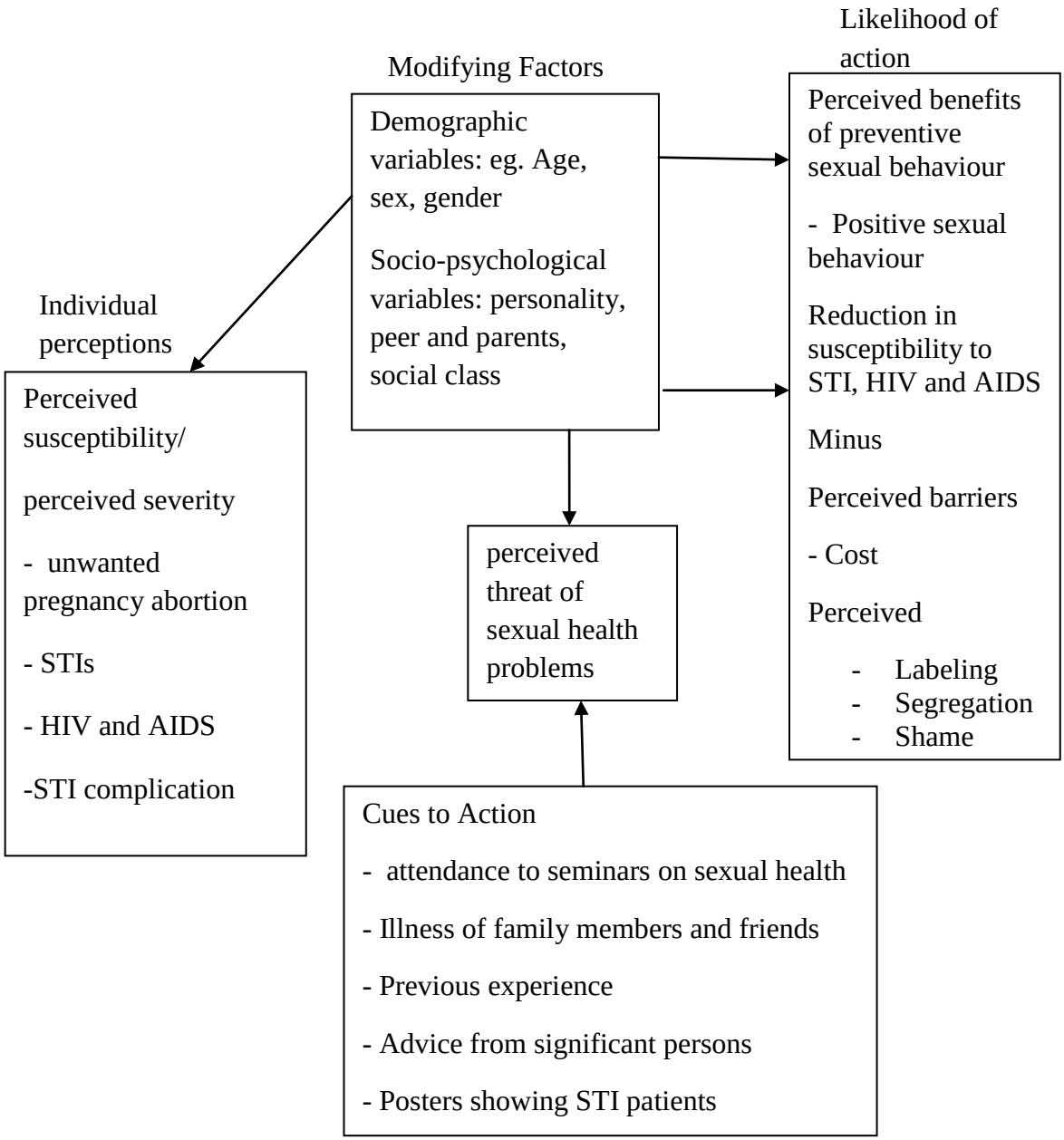
Appendix E



Source: Stretcher, V., & Rosenstock, I.M. (1997). The Health Belief Model. In Glanz K, M. Lewis, F.M., & Rimer B. K. (Eds). Health behavior and health education: theory, research and practice. San Franscio: Jossey-Bass. Reprinted with permission.

Appendix F

Health Belief Model



Adapted Health Belief Model (HBM) for patterns of sexual health behaviours about STIs among tertiary institution students in Imo State.

Appendix G

List of Tertiary Institutions in Imo State

S/N	Institutions	Population		Total
		Males	Females	
1	Imo State University	27439	14,083	26,522
2	Federal University of Technology, Owerri	13,953	4,870	18,829
3	Alvan Ikoku Federal College of Education, Owerri	3,667	3,419	7,086
4	Federal Polytechnic, Nekede	3,539	2,709	6,248
5	Imo Polytechnic Umugwo	2,223	2,389	4,612

Appendix H

Sampling Procedure

S/N	Institutions	Population			Sample size						
		Males	Females	Total			Year of Study/ HND				
							1	2	3	4	5
1	Imo State University	12439	14,083	26,522	156	Males = 81 Females =74	55 63	55 63	55 62	55 62	55 62
2	Federal University of Technology, Owerri	13,953	4,870	18,829	102	Males = 49 Females= 53	62 22	62 22	62 22	61 21	61 21
3	Alvan Ikoku Federal College of Education, Owerri	3,667	3,419	7,086	416	Males = 308 Females= 108	20 19	20 19	20 18	21 18	
4	Federal Polytechnic, Nekede	3,539	2,709	6,248	587	Males = 275 Females= 312	39 30	39 30			
5	Imo Polytechnic, Umugwo	2,223	2,389	4,612	138	Males = 78 Females= 60	25 27	24 26			

Appendix I

Attitude Test (Crombach Alpha)
Preventive sexual health behaviours

S/N	Always	Most of the time	Some times	Never	Variance
1	27	0	3	0	2.64
2.	23	1	5	1	0.73
3	18	3	7	2	0.33
4	24	1	4	1	0.01
5	27	0	0	3	2.88
6	19	3	6	2	0.14
7	16	8	6	0	1.47
8	24	4	0	2	1.53
9	24	0	6	0	1.09
10	19	2	8	1	0.60
11	21	4	55	0	0.23
12	12	5	9	4	2.55
13	15	8	4	3	1.46
14	18	2	9	1	0.99
15	14	1	9	6	1.87
16	19	2	3	6	0.30
17	18	4	5	3	0.11
18	24	1	2	3	0.87
19	12	3	4	11	2.51
20	17	1	6	6	0.53
21	14	6	6	4	1.30
22	20	3	6	1	0.34
23	16	6	6	2	0.83
24	15	3	3	9	1.54
25	24	1	5	0	1.35
26	16	3	4	7	0.90
27	18	2	4	6	0.20
28	16	6	5	3	0.88
29	19	2	6	3	0.12
30	17	3	4	6	0.35
31	18	0	6	6	0.60
32	18	1	8	3	0.559
33	21	3	4	2	0.21
34	23	1	1	5	1.07
35	18	6	0	6	1.22
36	19	6	2	3	0.55
37	25	4	1	0	1.87
38	24	0	6	0	1.58
39	13	0	8	9	2.91
40	19	5	2	4	0.36

S/N	Always	Most of the time	Some times	Never	Variance
41	20	0	10	6	1.77
42	27	0	0	3	2.00
43	25	2	0	3	1.84
44	21	3	0	6	0.96
45	13	2	8	7	2.08
46	21	8	0	1	1.89

Crombach Alpha Reliability coefficient

$$a = \frac{K}{K-1}\left(1 - \frac{\sum V_i}{V_t}\right)$$

Where a = correlation coefficient
K = Number of respondents
V_i = Variance of individual item
V_t = Variance of total items

From the table V_i =

Response	Frequency
Always	19
Most of the time	3
Sometimes	5
Never	3
Total	30

$$\bar{x} = \frac{\sum x}{n} = \frac{30}{4} = 7.5$$

$$\sigma^2 = \frac{\sum x^2}{n} - \frac{\sum x^2}{n} = \frac{30^2}{4} - (7.5)^2$$

$$= \frac{900}{4} - 56.25 = 225 - 56.25 = 168.75$$

$$a = \frac{30}{30-1}\left(1 - \frac{45.03}{168.75}\right)$$

$= 1.03 \quad [1 - 0.266785]$

$= 1.03 \times 0733215$

$= 0.76$

This shows that the instrument is reliable and good for the study.

Attitude Test (Crombach Alpha)

Primordial Preventive Behaviours

S/N	Always	Most of the time	Sometimes	Never	Variance
1	27	0	3	0	1.14
2.	23	1	5	1	0.11
3	18	3	7	2	0.78
4	24	1	4	1	0.21
5	27	0	0	3	1.30
6	19	3	6	2	0.42
7	16	8	6	0	2.03
8	24	4	0	2	0.92
9	24	0	6	0	0.44
10	19	2	8	1	0.71
11	21	4	55	0	0.17
Total					8.50

Response	Frequency
Always	22
Most of the time	2
Sometimes	5
Never	1
Total	30

$$\bar{x} = \frac{\sum x}{n} = \frac{30}{4} = 7.5$$

$$\sigma^2 = \frac{\sum x^2}{n} - \left(\frac{\sum x^2}{n}\right) = \frac{30^2}{4} - (7.5)^2$$

$$= \frac{900}{4} - 56.25 = 168.75$$

$$a = \frac{30}{30-1}\left(1 - \frac{8.50}{168.75}\right) = 1.03\ [1 - 0.05037]$$

$$= 1.03 \times 0.94963 = 0.97$$

This shows that the instrument is reliable and good for the study

Attitude Test (Crombach Alpha)

Primary Preventive Behaviours

S/N	Always	Most of the time	Sometimes	Never	Variance
12	12	5	9	4	1.55
13	15	8	4	3	0.94
14	18	2	9	1	0.95
15	14	1	9	6	1.21
16	19	2	3	6	0.41
17	18	4	5	3	0.08
18	24	1	2	3	2.05
19	12	3	4	11	2.54
20	17	1	6	6	0.22
21	14	6	6	4	0.60
22	20	3	6	1	0.63
23	16	6	6	2	0.46
24	15	3	3	9	1.09
25	24	1	5	0	2.16
26	16	3	4	7	0.38
27	18	2	4	6	0.26
28	16	6	5	3	0.31
29	19	2	6	3	0.31
30	17	3	4	6	0.18
Total					16.33

From the table V_i =

Response	Frequency
Always	19
Most of the time	3
Sometimes	5
Never	3
Total	30

$$\bar{x} = \frac{\sum x}{n} = \frac{30}{4} = 7.5$$

$$\sigma^2 = \frac{\sum x^2}{n} - \frac{\sum x^2}{n} = \frac{30^2}{4} - (7.5)^2$$

$$= \frac{900}{4} - 56.25 = 225 - 56.25 = 168.75$$

$$a = \frac{30}{30-1}\left(1 - \frac{16.33}{168.75}\right) = 1.03 \times 0.8895 = 0.92$$

This shows that the instrument is reliable and good for the study.

Attitude Test (Crombach Alpha)

Secondary Preventive Behaviour

S/N	Always	Most of the time	Sometimes	Never	Variance
31	18	0	6	6	0.50
32	18	1	8	3	0.64
33	21	3	4	2	0.16
34	23	1	1	5	0.75
35	18	6	0	6	1.11
36	19	6	2	3	0.64
37	25	4	1	0	1.74
38	24	0	6	0	1.35
39	13	0	8	9	3.20
Total					10.06

From the table V_i =

Response	Frequency
Always	19
Most of the time	3
Sometimes	5
Never	3
Total	30

$$\bar{x} = \frac{\sum x}{n} = \frac{30}{4} = 7.5$$

$$\sigma^2 = \frac{\sum x^2}{n} - \frac{\sum x^2}{n} = \frac{30^2}{4} - (7.5)^2$$

$$= \frac{900}{4} - 56.25 = 225 - 56.25 = 168.75$$

$$a = \frac{30}{30-1}\left(1 - \frac{10.06}{168.75}\right) = 1.03\ (1-0.0596)$$

$$= 1.03 \times 94 = 0.97$$

This shows that the instrument is reliable and good for the study.

Attitude Test (Crombach Alpha)

Tertiary Preventive Behaviour

S/N	Always	Most of the time	Sometimes	Never	Variance
40	19	5	2	4	0.31
41	20	0	10	6	2.68
42	27	0	0	3	2.86
43	25	2	0	3	1.76
44	21	3	0	6	0.52
45	13	2	8	7	2.02
46	21	8	0	1	2.31
Total					10.14

From the table V_i =

Response	Frequency
Always	19
Most of the time	3
Sometimes	5
Never	3
Total	30

$$\bar{x} = \frac{\sum x}{n} = \frac{30}{4} = 7.5$$

$$\sigma^2 = \frac{\sum x^2}{n} - \frac{\sum x^2}{n} = \frac{30^2}{4} - (7.5)^2$$

$$= \frac{900}{4} - 56.25 = 225 - 56.25 = 168.75$$

$$a = \frac{30}{30-1}\left(1 - \frac{10.14}{168.75}\right) = 1.03\ [1 - 0.60089]$$

$$= 1.03 \times 0.938$$

$$= 0.97$$

This shows that the instrument is reliable and good for the study.