



Knowledge of Common Sexually Transmitted Infections Among In-School Adolescents In Nsukka Local Government Area Enugu State

Prince Christian Ifeanachor Umoke^{1*}, Loveth Chiamaka Ude¹, Rosemary N.C. Onwe², Maryjoy Umoke³

¹Department of Human Kinetics and Health Education, University of Nigeria, Nsukka

²Department of Economics, Alex-Ekwueme Federal University, Ndufu-Alike, Ikwo

³School Health Services, Ebonyi State Ministry of Health, Abakaliki

*Correspondence: E-mail: prince.umoke@unn.edu.ng

Abstract

The purpose of the study was to investigate knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka Local Government Area (LGA), Enugu State. Three specific objectives with corresponding research questions and two null hypotheses guided the study. A cross-sectional descriptive research design was used for the study. The study population comprised of 15,479 in-school adolescents in Nsukka LGA of Enugu State. The sample for the study was 300 in-school adolescents drawn using a two stage sampling procedure. The instrument for data collection was a 24-item researchers' designed questionnaire titled "knowledge of common sexually transmitted infections among in-school adolescents questionnaire (KCSTIAQ)". The research questions were answered using frequency and percentages, while the null hypotheses were tested using chi-square statistics. The result of the study showed that: (50.1%) per cent of the respondents had moderate level of common STIs. in-school adolescents aged 17-20 years (61.8%) and those aged ≥ 21 years (65.7%) had high knowledge of common STIs while those aged 12-16 years (49.5%) had moderate level of knowledge of common STIs. In-school adolescent males and females (54.4% vs 46.9%) had moderate level of knowledge of common STIs. Age and gender had significant influence in the knowledge of common STIs among in-school adolescents. Based on the findings, the authors recommended among others, that parents should give their children proper sex education, informing them of the dangers of pre-marital sex, infidelity after marriage and encourage questions concerning sex and providing the right and realistic answers.

Keywords: Knowledge, Sexually transmitted infections, In-School adolescents

Introduction

Early exposures to sexual activity among in school adolescents' are associated with diverse negative outcomes which includes Sexually Transmitted Infections (STIs). The in-school years are recognized as a time when adolescent tend to explore their sexuality, often leading to high-risk sexual behaviours, such as unprotected intercourse, infidelity, and anal intercourse. These behaviours place in-school adolescent at an increased risk for STIs.

Globally, more than one million people worldwide contract Sexually Transmitted Infections (STIs) every day (Tanak, Yamaguchi, & Matsuo, 2018). Globally, an estimated 333 million new cases of curable STIs occurred annually, with the highest rates among 20-24 years old, followed by 15-19 years old, (WHO, 2018). According to (Kim & Ha, 2016), 20% of women and 38% of men have comprehensive knowledge about STIs transmission and prevention. Several studies have been conducted worldwide regarding knowledge about STIs



and reported that 74.7% in India, 92.4% in Nigeria, 89.9% in Brazil, 98% in Tanzania, 88.5% in Jimma, Ethiopia, 79% in Dhaka, Bangladesh, 86.6% in Malaysia, 74% medical and 61.6% non-medical university students in Pakistan, 83.1% in Turkey, 68.3% in Klang Valley, Malaysia, 27% in Udipi Taluk, India, and 70.1% in northern Cape Province, South Africa of the respondents had good knowledge of STIs. The factors that influence knowledge of STIs are diverse and include age, sex, residence, marital status, academic year, and acquiring information from friends/internet and mass media (Nayak, 2016; Karki & Niraula, 2017). Previous studies have demonstrated that many adolescents are involved in sexual activities that elevate their risk of having reproductive morbidity, including unwanted pregnancies, abortions, and STIs because of lack of basic knowledge about reproductive biology and preventive methods (Titiloye & Ajuwon, 2017). Some of the common STI in the world include: Bacterial vaginosis, herpes, chlamydia, trichomoniasis, gonorrhea, Hepatitis B virus, HIV and syphilis (WHO, 2016). Tareq Mahmud (2020) noted that sexually transmitted infections can have serious consequences on reproductive health and well-being of both men and women. This may not be different in sub-Saharan Africa.

In sub-Saharan Africa, comprehensive accurate knowledge about STIs remains low in most countries in Africa. Sub-Saharan Africa ranks first in STI yearly incidence compared to other world regions. The World Health Organization has estimated that every year in Africa there are 3.5 million cases of syphilis, 15 million cases of chlamydial disease, 16 million cases of gonorrhea, and 30 million cases of trichomoniasis. STIs are a high public health priority especially because of their widespread prevalence and treatability. Herpes simplex virus infection and human papillomavirus infection are growing problems in sub-Saharan Africa. According to UNAIDS 2019 estimates, sub-Saharan Africa accounted for 68% of global HIV infections, 68% of new adult HIV infections, 92% of new infections in children and 72% of all AIDS-related deaths. In the same year, regional estimates suggest that more than 14.1 million children have lost one or both parents to AIDS. The HIV/AIDS epidemic continues to have a disproportionate impact on women and girls in sub-Saharan Africa, with women aged 15–24 years being eight times more likely to be infected with HIV than their male counterparts (UNAIDS, 2019). The incidences of STI keep increasing in Africa with the increase in population and Nigeria being the most populated country in Africa is not left out.

In Nigeria, available data show that sexually transmitted diseases constitute great medical, social and economic problems. Apart from the heavy affliction of urban dwellers, there is rapid excursion of these diseases to the rural areas as well. Gonorrhea is the most prevalent sexually transmitted Infection (STI) in Nigeria. In fact, in 1963, WHO found Lagos to have the highest gonorrhea rate in the world. Recent surveys report gonorrhea prevalence to be as high as 28.1%. Further studies show a clear association between gonorrhea and male and female infertility. Penicillinase producing *Neisseria gonorrhoea* prevalence varies from 44.4% in Zaria to 80% in Ibadan. There is an increase in the prevalence of gonorrhea among girls, mostly due to sociocultural factors such as the belief that sexual intercourse with a girl who has urethritis cures the condition. Gonorrhea is not always the most common form of urethritis, however. For example, in a study in Ibadan, 61% of male urethritis cases had nonspecific urethritis. Further schistosomiasis often causes urethral symptoms like those of gonorrhea. Most women at STI clinics have vaginitis and vaginal discharge. Even though the prevalence of trichomoniasis and candidiasis are rather high (10.2-22.3% and 4.33.1% respectively), bacterial vaginosis is the leading cause of vaginitis and vaginal discharge in Nigeria. The predominant malignancy of women in Nigeria is cervical cancer which may be due to the high rates of infection of trichomoniasis and Herpes virus II. Another prevalent STI is syphilis, yet many people with the infection are asymptomatic. For example, a study reports that 10.3% of women in a prenatal clinic in Lagos tested positive for syphilis, but the physician believed only



1.5% had syphilis. Tropical venereal diseases still cause genital ulcers in Nigeria. Dermatophyte infection, genital warts, and pedicubsis pubis also occur, but scant data exist. Many people believe they have an STI and do not, yet they insist they do. This phenomenon may be a result of the common fear of infertility which results from STIs. Despite the fact that the prevalence of STIs is high in Nigeria, there is no sufficient shreds of evidence that showed knowledge about STIs among adolescents and youths in the study area. To design appropriate intervention for improving the knowledge of STIs among adolescent, the availability of sufficient data on sexually transmitted infection is of paramount importance.

Sexually transmitted infections (STIs) are infections that are transmitted from one person to another through sexual contact, and most of them are easily preventable and treatable. Sexually transmitted infections (STI's) are infections that are spread primarily through person to person sexual contact (WHO, 2016). There are more than 30 different sexually transmitted infections caused by bacteria, viruses and parasites. Out of which eight are most common and made up of 4 curable STI: chlamydia, gonorrhoea, syphilis and trichomoniasis and 4 are viral STIs which are incurable: hepatitis B, Herpes Simplex Virus (HSV or Herpes), Human Immunodeficiency Virus (HIV) And Human Papilloma Virus (HPV), (WHO, 2019). The most reliable way to avoid infection is to not have anal, vaginal, or oral sex. Many STIs have no signs or symptoms (asymptomatic). Ketting (2018) defined Sexually Transmitted Infections (STIs) as infections that are transmitted from one person to another through sexual contact, and most of them are easily preventable and treatable.

In this study, Sexually transmitted disease (STD) is any disease (such as syphilis, gonorrhoea, AIDS, or a genital form of herpes simplex) that is usually or often transmitted from person to person by direct sexual contact. It may also be transmitted from a mother to her child before or at birth or, less frequently, may be passed from person to person in nonsexual contact such as in kissing, in tainted blood transfusions, or in the use of unsanitized hypodermic syringes. STIs represent a huge burden of disease worldwide with an annual incidence of about 333 million cases and have harmful effects on sexual health or reproduction (Sau et al., 2019).

Sexually transmitted infections are a major health problem that affects mostly young people in developing as well as developed countries due to sexual experimentation occurring at this age (Sau et al., (2019). Adolescent are most vulnerable to infection because they engage in risky practices due to a lack of adequate knowledge of STIs. Knowledge of STIs is very significant for preventing adverse outcomes of adolescents' reproductive health. Insufficient knowledge about Sexually Transmitted Infections is the major barrier to successfully prevent infection among adolescent populations (Nubed & Jane-Francis, 2016). Adolescents are frequently involved in risky sexual behavior, which predispose them to a multiplicity of sexual and reproductive health problems. Since the lack of knowledge of STIs may lead to a delay in treatment, it may complicate the infection process. The health seeking behavior of STIs may largely depend on knowledge about STIs (Tsadik &, LulLam, 2019) thus the knowledge of STIs is important especially among adolescents.

Knowledge is general awareness or possession of information, fact, ideas, truths, or principles. It helps an individual to get a clear information or fact about something or particular situation (Suleiman, 2020). Knowledge is the information, understanding, and skills that one gains through education or experience. In the context of this study, knowledge is viewed as the understanding of infections such as gonorrhoea, syphilis, chancroid, chlamydia among others that are primarily transmitted from an infected person to an uninfected person during intimate sexual contact.

Knowledge of STIs includes: knowledge of the meaning, signs and symptoms; types, factors, causes, effects, prevention and treatment of STIs. Consequently, Oken (2018) stated that acquisition of knowledge of STIs by young people such as in-school adolescent is very



necessary, this is because young people are regarded as an important target audience for all educational and health activities aimed at promoting healthy attitudes and behaviour or change in unhealthy attitudes and behaviour and thus forestalling their unwanted consequences (Eze & Eze, 2018). The people were generally inhibited and did not openly express their opinions and views pertaining to love, marriage and sex. Moreover, it is considered a taboo for teachers and parents to talk with students/children about sexual matters, such as sexual relationships, and STIs in schools as well as at home because of cultural and religious barriers. In contemporary African society, however, there has been extensive interest, inquiry and curiosity in the phenomenon of sexual relations outside marriage, sex is discussed more freely by the larger society and adolescents in particular. As a matter of fact, there is more divestment and nudity in advertisements, magazines, television show and movies pointing to a general trend to get liberated attitudes and values which promote open discussions of human sexuality that were once considered a taboo. This kind of permissive environment has influenced people to have liberal and permissive knowledge towards sexuality both in premarital and extra-marital affairs. The sensitivity of sexuality and adolescent behavior seems to obstruct education on STIs despite the fact that there is now a stronger commitment to address STIs in schools. Adolescents have been engaging in sexual activities.

As described by UNICEF (2019), adolescents are those between the ages of 10 and 19 and these people are within the range of 1.2 billion in the world today, this makes up 16% of the world's population and over 30 million Nigerians are between the ages of 10-19 years (Esiet, 2016). According to Adejimi, Omokhodio, and Olaolorun (2020), adolescence is a time of opportunity but also a time of vulnerability to risk behaviors which can have lifelong consequences, especially on health. Girls and boys experience these processes in different ways and at different age. Adolescents are at risk of unprotected sexual relations which may lead to Sexually Transmitted Infections (STIs). Cortes Alfaro (2019) stated that adolescence is a stage in which social interests appear and feelings never before experienced blossom, which together with physiological changes make evident a significant transformation in this subject that little by little ceases to be a child. The definition of adolescents by Cortes Alfaro will be adopted in this study.

Adolescence is defined by the United Nations as the period of life from age 10 to 19 years. It is a significant period in an individual's changeover from childhood to adulthood. In 2009, there were 1.2 billion adolescents aged 10–19 years in the world accounting for 18% of the world's population (UNFPA, 2019). Adolescence is described as a continuum of physical, mental, behavioural, and psychosocial change that is characterized by growing stages of individual autonomy, a growing sense of identity and self-esteem, and progressive freedom from grown-ups. This period results in sexual, psychological, and behavioral maturation (UNFPA, 2019).

During adolescence, hormonal changes lead to onset of puberty, sudden and rapid physical growth, and development of secondary sexual characteristics. They could engage in wrong activities such as smoking, substance abuse, consumption of alcohol, and unprotected sex. In this study, the definition of adolescents according to UNICEF (2019) will be adopted for this study. Half of new human immunodeficiency virus (HIV) infections in world occur in 15–24 year-olds, and one-third of new cases of curable sexually transmitted infections (STIs) affect people younger than 25 years. Adolescence is an important transitional phase, during which humans experience rapid physical, mental, and social development. This stage of human development is also marked by increased experimentation, as adolescents are keen to try new things, often without thought for their consequences. This second decade of life is thus fraught with dangers, including threats to health (Adadevoh, 2018).



Today, adolescents are recognized as a group with special health-related vulnerabilities (Dehne & Riedner, 2018). In addition to tobacco use, suicides, and road traffic accidents, sexual and reproductive behaviour is one of the four crucial factors leading to illness, disability, and death in this age group (WHO, 2018). Many people have sexual intercourse for the first time in their teen years, yet numerous studies reveal that adolescents are poorly informed about and have negative attitudes towards sexually transmitted infection (STI) prevention (Navrongo 2021; WHO, 2018). Lack of information and negative attitudes encourage sexual risk behaviour, thus increasing individuals' chances of acquiring STIs (WHO, 2018). Sexually transmitted infections among adolescents represent a huge problem which requires effective interventions for primary and secondary prevention. Due to inappropriate knowledge, individuals especially in-school adolescents are likely to have sexual partners.

In-school adolescents are adolescents receiving secondary education. According to Oboegbulem (2016), Nigerian secondary education system comprises two major strata, namely, junior secondary School (JSS1-JSS3) for lower stratum and senior secondary School (SS1-SS3) for upper stratum. The in-school adolescents could be boarders or day students in this study, in-school adolescents are individuals that fall within the age range of 12-17 years and accessing secondary education at different schools in Nsukka Local Government Area of Enugu State.

Nsukka where this study is conducted is the site of the University of Nigeria (established in 1960), the first university established in Nigeria after independence. It lies in the Udi Hills at an elevation of 1,300 feet (396m). Nsukka is an agricultural-trade centre for the yams, cassava (manioc), corn (maize), taro, pigeon peas, and palm oil and kernels produced by the local Igbo (Ibo) people. Weaving is a traditional local craft. Coal deposits have been discovered east of Nsukka around Obolo, a town on the main Onitsha-Makurdi road. Nsukka Local Government Area is one of the 17 local government area in Enugu state. Nsukka Local Government Area council is situated in the town of Nsukka and the communities under the local government are Edem, Umuabor, Opi, Opi-Agu, Okpaligbo Okutu, Opkuje, Obukpa, Ibagwani, Adhe-Ndiagu, Obiomo, Lejja, Ibagwa-Agu, Awka, Eha-Alumona, Ede-Oballa, Alor-Uno, Nsukka. This local government is the most populated amongst the seventeen local government areas in Enugu state according to population statistics. The researcher observes the prevalence of Sexually Transmitted Infections in Nsukka local government area hence, this study aimed to investigate the knowledge of sexually transmitted Infection among in – school adolescents in Nsukka local government Area of Enugu State.

Adolescents, especially those in school are likely to engage in risky sexual practices and this increase their chances of contacting sexually transmitted infection or diseases. It is no longer an old tale about the existence of sexually transmitted infections (STIs) as it used to be relegated as superstitious. Just like the popular slogan that “AIDS is real” similarly, sexually transmitted infection abound but the problem is that adolescents and especially, in-school adolescents who indulge in sexual practices seem to have little or no knowledge of STIs and the right attitude towards it.

In a bid to explore and experiment on sex and its related activities, it is likely that in-school adolescents seemingly lurk in total ignorance of the existence, symptoms, mode of transmission, control and right attitude towards sexually transmitted infections. However, ignorance, they say, is not an excuse to grave consequences of contacting STIs. Studies have been conducted in other areas on the knowledge of Sexually Transmitted Infections among in-school adolescents. However, there seems to be dearth of research on knowledge of common sexually transmitted infections among in-school adolescents in Nsukka Local Government Area of Enugu State. Therefore, the aim of this study was to investigate knowledge of common



Sexually Transmitted Infections among in-school adolescents in Nsukka Local Government Area of Enugu State.

Purpose of the Study

The purpose of this study was to investigate knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka Local Government Area, Enugu State. Specifically, the study determined the:

1. level of knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka LGA, Enugu State.
2. level of knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka LGA, Enugu State based on age.
3. level of knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka LGA, Enugu State based on gender.

Research Questions

1. What is the level of knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka LGA, Enugu State.
2. What is the level of knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka LGA, Enugu State based on age.
3. What is the level of knowledge of common sexually transmitted infections (STIs) among in-school adolescents in Nsukka LGA, Enugu State based on gender.

Hypotheses

The following null hypotheses are postulated to guide the study and are tested at .05 level of significance.

1. There is no significant difference in the knowledge of common sexually transmitted infections (STIs) among in-school adolescents based on age.
2. There is no significant difference on the knowledge of common sexually transmitted infections (STIs) among in-school adolescents based on gender.

Methods

A cross-sectional descriptive research design was used for this study. According to Hingson, Strunin, Berlin, and Heren (2014), cross-sectional design seeks to determine the present practice or opinions of a specified population on some phenomena. Researchers explained that descriptive survey is used to gather data at a particular point in time with the intention of describing the existing conditions and identifying standard against which existing condition can be compared. Abaribe (2020) successfully used this design to investigate knowledge of Sexually Transmitted Infections as a predictor of public schools female adolescents' sexual behaviour in Ikenne Local Government Area, Ogun State, Nigeria. The design is therefore considered appropriate for studying the knowledge of in-school adolescent towards sexual transmitted infection.

The study was carried out in Nsukka Local Government Area (L.G.A), one of the seventeen Local Government Areas in Enugu State of Nigeria. Nsukka LGA has an area of 1,810 km² (Enugu State Government Official website: <http://www.enugustate.gov.ng/nsukkaLGA.php>) and lies within latitudes 60451N and 70001N, and longitude 70151E and 70301E of the Greenwich meridian (Ofomata, 1995). Nsukka shares boundaries with Igbo-Etiti L.G.A on the South, Uzo-Uwani L.G.A on the West, Udenu L.G.A on the East and Igboeze-North L.G.A on the North, all in Enugu State. Nsukka has a population



of 309,633 from the 2006 Nigerian census. Nsukka is known for many cultural practices of which the most notable ones is Oriokpa masquerade. The major occupation of the people are education, trading, and farming, because of its location within the academic environment of various institutions, almost all of them are educated. This was because of the influence of the University of Nigeria Nsukka that made them not to put much interest in trading. Nsukka L.G.A. consists of 15 communities: Anuka, Okutu, Ibagwa-agu, Okpuje, Ibagwa –ani, Obimo, Lejja, Okpaligbo, Obukpa, Alor-uno, Edem, Ede Oballa, Opi, Eha-alumona and Nsukka. Nsukka local government area is chosen because of the perceived spread of Sexually Transmitted infections (STIs) such as HIV&AIDS, Candidiasis, Gonorrhoea, Syphilis, Scabies and so forth.

The population for the study consisted of all enrolled students in all the 32 public secondary school in Nsukka local government area, Enugu state. The researcher used only public secondary school for reliable number of students. Statistics from the Post Primary School Management (PPSMB), Nsukka Zonal Office Research and Statistics Unit showed that there are 32 public secondary schools and fifteen thousand four hundred and seventy nine (15,479) in-school adolescents in Nsukka local government area of Enugu State.

The sample size for this study comprised three hundred (300) in-school adolescents in Nsukka local government area. This is in line with the guideline of Cohen, Mansion, and Morrison (2011), that when the sample size is 1300 and above at 95 percent confidence level (5% interval), the sample size should be 297 and above. The sampling procedure used two stages to draw the sample size for the study.

Stage one involved the use of simple random sampling by the way of balloting to draw out 15 secondary schools out of the thirty two secondary school in Nsukka local government area. This is because some communities may not have secondary School while others might have up to two or more secondary schools thereby making adolescents there to attend secondary schools in the nearby communities. Stage two involved simple random sampling of balloting without replacement to select 20 in-schools adolescents from each of the fifteen secondary schools sampled. At the end of the sampling procedure, 300 respondents will be selected and utilized for this study.

A researcher designed instrument was used for data collection as follows: Section A contained personal data of the respondents and section B comprised statements on knowledge of in-school students towards Sexual Transmitted Infection. Section A provided information on age and gender while Section B contained adapted items in line with the research questions. The questionnaire was titled 'Knowledge of common Sexually Transmitted Infections among In-school Adolescents (KCSTIAQ). The items of KCSTIAQ contained yes or no response.

The instrument for data collection was face validated. The instrument was validated by three experts from the Department of Human Kinetics and Health Education, University of Nigeria Nsukka. The experts were given a draft copy of the work, purpose of the study, research questions. The experts were requested to make careful judgment of the questionnaire and to ascertain that the instrument covers the objectives of the study. They checked for appropriateness of each item in terms of the suitability of the questionnaire items in the instrument and made necessary suggestions. Their corrections, suggestions and modifications of the questionnaire items as well as supervisor's comments will be utilized in drafting the final copy of the instrument.

In other to determine the reliability of the instrument, the split half method was utilized in this study. The items in the questionnaire as obtained were grouped into even and odd number items. The responses of the two groups will be analyzed to establish the reliability coefficient of the entire instrument using Spearman Brown correction formula.

To facilitate access to the schools, an introductory letter from the Head, Department of Human Kinetics and Health Education, University of Nigeria, Nsukka was obtained and



presented to the principals of the schools. The researcher selected some days to visit the various school selected for the study. A total of 20 copies of questionnaire were administered to the respondents in each school and the researcher collected the questionnaire on the spot after completion or as may be agreed by the researcher and the respondents.

The completed copies of the questionnaire were examined for completeness of information and responses. The data were computed and analyzed using Statistical Package for the Social Sciences (SPSS) Version 25. The data were analysed using descriptive statistics of frequencies and percentages to describe the demographic characteristics of the respondents and to answer research questions. Inferential statistics of Chi-square test was used to test the research hypotheses at 0.05 level of significance..

Results

Table 1: Frequencies and Percentages of Level of Knowledge of Common STIs among In-school Adolescents in Nsukka LGA (n=270)

S/N	Items	Yes f(%)	No f(%)
	The following are types of STIs		
1.	Herpes simplex virus (HSV)	81 (30.0)	189(70.0)
2.	Human papillom virus (HPV)	87 (32.2)	183 (67.8)
3.	Syphilis	160(59.3)	110 (40.7)
4.	Gonorrhoea	161 (59.6)	109 (40.4)
5.	Chlamydia	102(37.8)	168 (62.2)
	Cluster average	43.8	56.2
	The signs and symptoms of common STIs include		
6.	Swollen lymph glands	110(40.7)	160(59.3)
7.	Purplish spots on the skin of the infected is not a sign of STI	125(46.3)	145(53.7)
8.	The infected will have persistent cough	108(40.0)	162(60.0)
9.	Reoccurring bruises in the mouth is a sign of common STI	88(32.6)	182(67.4)
10.	Bleeding after sex is not a sign of common STI	129(47.8)	141(52.2)
	Cluster average	41.5	58.5
	The mode of transmission of common STIs		
11.	STIs could be transmitted from the u 35 yringes with infected person	208(77.0)	62 (23.0)
12.	STIs could be transmitted through deep kissing	123(45.6)	147 (54.4)
13.	STIs could be transmitted by sharing the same eating in ensiles with infected person	83(30.7)	187 (69.3)
14.	STIs could be transmitted by unprotected sexual intercourse	192 (71.1)	78 (28.9)
15.	STIs could be transmitted from sharing the same toilet with an infected person	114(42.2)	156 (57.8)
16.	STIs could be transmitted by exposure to cough and sneeze from infected person	140(51.9)	130 (48.1)
17.	It could be transmitted by infected blood ducts	206(76.3)	64 (23.3)
	Cluster average	50.6	49.4
	Preventive measures for common STIs		
18.	Condoms should be used one time only	188 (69.6)	82 (30.4)



19.	A condom can protect against STIs	176 (65.2)	94 (34.8)
20.	Zero grazing (one faithful partner) can help to reduce the chance of getting STIs	159 (58.9)	111 (41.1)
21.	Douching is another means of preventing STIs	143 (53.0)	127 (47.0)
22.	Treatment after intercourse helps to prevent	167 (61.9)	103 (38.1)
23.	Regular visits to STIS clinic	183(67.8)	87(32.2)
24.	Sex education from health professionals help to minimize STIs	204 (75.6)	66 (24.4)
	Cluster average	64.6	35.4
	Overall average	50.13	49.88

0% to 19 % = Poor knowledge, 20% to 39% = Fair knowledge, 40% to 59% = Moderate knowledge, 60% to 79% = High knowledge, 80% to 100% = Very high knowledge. **Source:** Okafor (1997).

Results in Table 1 show that overall, in-school adolescents in Nsukka LGA had moderate level of knowledge of common STIs (50.1%).

Table 2: Frequencies and Percentages of Level of Knowledge of Common STIs among In-school Adolescents in Nsukka LGA Based on Age (n=270)

S/N	Items	Age					
		12–16yrs (225)		17 -20 years (42)		≥ 21 years (3)	
		Yes f(%)	No f(%)	Yes f(%)	No f(%)	Yes f(%)	No f(%)
	The following are types of STIs						
1.	Herpes simplex virus (HSV)	58(25.8)	167(74.2)	23(54.8)	19(45.2)	0(0.0)	3(100.0)
2.	Human papillom virus (HPV)	67(29.8)	158(70.2)	18(42.9)	24(57.1)	2(66.7)	1(33.3)
3.	Syphilis	127(56.4)	98(43.6)	30(71.4)	12(28.6)	3(100.0)	0(0.0)
4.	Gonorrhea	127(56.4)	98(43.6)	33(78.6)	9(21.4)	1(33.3)	2(66.7)
5.	Chlamydia	71(31.6)	154(68.4)	28(66.7)	14(33.3)	3(100.0)	0(0.0)
	Cluster average	40.0	60.0	62.88	37.12	60.00	40.00
	The signs and symptoms of common STIs include						
6.	Swollen lymph glands	88(39.1)	137(60.9)	19(45.2)	23(54.8)	3(100.0)	0(0.0)
7.	Purplish spots on the skin of the infected is not a sign of STI	99 (40.0)	126(56.0)	25(59.5)	17(40.5)	1(33.3)	2(66.7)
8.	The infected will have persistent cough	83(36.9)	142(63.1)	22(54.4)	20(47.6)	3(100.0)	0(0.0)
9.	Reoccurring bruises in the mouth is a sign of common STI	73(32.4)	52(67.6)	13(31.0)	29(69.0)	2(66.7)	1(33.3)
10.	Bleeding after sex is not a sign of common STI	103(45.8)	122(54.2)	26(61.9)	16(38.1)	0(0.0)	3(100.0)
	Cluster average	39.64	60.36	50.4	49.6	60.0	40.0
	The mode of transmission of common STIs						
11.	STIs could be transmitted from the use same syringes with infected person	169(75.1)	56(24.9)	36(85.7)	6(14.3)	3(100.0)	0(0.0)
12.	STIs could be transmitted through deep kissing	99(44.0)	126(56.0)	23(55.8)	19(45.2)	1(33.3)	2(66.7)
13.	STIs could be transmitted by sharing the same eating in ensiles with infected person	73(32.4)	152(67.6)	7(16.7)	35(83.3)	3(100.0)	0(0.0)
14.	STIs could be transmitted by unprotected sexual intercourse	161(71.6)	64(28.4)	30(71.4)	12(28.6)	1(33.3)	2(66.7)
15.	STIs could be transmitted from sharing the same toilet with an infected person	9(40.0)	134(59.6)	22(52.4)	20(47.6)	1(33.3)	2(66.7)



16.	STIs could be transmitted by exposure to cough and sneeze from infected person	119(52.9)	106(47.1)	20(47.6)	22(52.4)	1(33.3)	2(66.7)
17.	It could be transmitted by infected blood products	164(72.9)	61(27.1)	39(92.9)	3(7.1)	3(100.0)	0(0.0)
	Cluster average	55.61	44.39	60.21	39.79	61.88	38.12
Preventive measures for common STIs							
18.	Condoms should be used one time only	154(68.4)	71(31.6)	31(73.8)	11(26.2)	3(100.0)	0(0.0)
19.	A condom can protect against STIs	142(63.1)	83(36.9)	31(73.8)	11(26.2)	3(100.0)	0(0.0)
20.	Zero grazing (one faithful partner) can help to reduce the chance of getting STIs	131(58.2)	94(41.8)	27(64.3)	15(35.7)	1(33.3)	2(66.7)
21.	Douching is another means of preventing STIs	114(50.7)	111(49.3)	26(61.9)	16(38.1)	3(100.0)	0(0.0)
22.	Treatment after intercourse helps to prevent	136(60.4)	89(39.6)	30(71.4)	12(28.6)	1(33.3)	2(66.7)
23.	Regular visits to STIS clinic	149(64.9)	79(35.1)	34(81.0)	8(19.0)	3(100.0)	0(0.0)
24.	Sex education from health professionals help to minimize STIs	163(72.4)	62(27.6)	38(90.5)	4(9.5)	3(100.0)	0(0.0)
	Cluster average	62.58	37.42	73.81	26.19	80.94	19.06
	Overall average	49.5	50.54	61.82	38.2	65.70	34.3

Results in Table 2 show that overall, 49.5 per cent of school adolescents aged 12 -16 years had moderate knowledge of common STIs while those aged 17-20 years (61.82%) and ≥ 21 years (65.70%) had high knowledge of common STIs.

Table 3: Frequencies and Percentages of Level of Knowledge of Common STIs among In-school Adolescents in Nsukka LGA Based on Gender (n=270)

S/N	Items	Gender			
		Male (137)		Female (133)	
		Yes f(%)	No f(%)	Yes f(%)	No f(%)
The following are types of STIs					
1.	Herpes simplex virus (HSV)	41(29.9)	96(70.1)	40(30.0)	93(69.9)
2.	Human papillom virus (HPV)	43(31.4)	94(68.6)	44(33.1)	89(66.9)
3.	Syphilis	90(65.7)	47(34.3)	70(52.6)	63(47.4)
4.	Gonorrhoea	85(62.0)	52(38.0)	76(57.1)	57(42.9)
5.	Chlamydia	59(43.1)	78(56.9)	43(33.3)	90(67.7)
	Cluster average	46.2	53.58	41.04	58.96
The signs and symptoms of common STIs include					
6.	Swollen lymph glands	61(44.5)	76(55.5)	49(36.8)	84(63.2)
7.	Purplish spots on the skin of the infected is not a sign of STI	74(54.0)	63(46.0)	51(38.3)	82(61.7)
8.	The infected will have persistent cough	64(46.7)	73(53.3)	44(33.1)	89(66.9)
9.	Reoccurring bruises in the mouth is a sign of common STI	49(35.8)	88(64.2)	39(29.3)	94(70.0)
10.	Bleeding after sex is not a sign of common STI	75(54.7)	62(45.3)	54(40.6)	79(59.4)
	Cluster average	47.14	52.86	35.62	64.38
The mode of transmission of common STIs					
11.	STIs could be transmitted from the use same syringes with infected person	111(81.0)	26(19.0)	97(72.9)	36(27.1)
12.	STIs could be transmitted through deep kissing	63(46.0)	74(54.0)	60(45.1)	73(54.9)
13.	STIs could be transmitted by sharing the same eating in ensiles with infected person	42(30.7)	95(69.3)	41(30.8)	92(69.2)



14.	STIs could be transmitted by unprotected sexual intercourse	106(33.4)	31(22.6)	86(64.7)	47(35.3)
15.	STIs could be transmitted from sharing the same toilet with an infected person	70(51.1)	67(48.9)	44(33.1)	89(66.9)
16.	STIs could be transmitted by exposure to cough and sneeze from infected person	83(60.6)	54(39.4)	57(42.9)	76(57.1)
17.	It could be transmitted by infected blood products	111(81.0)	26(19.0)	95(71.4)	38(28.6)
	Cluster average	54.82	45.18	51.55	48.45
	Preventive measures for common STIs				
18.	Condoms should be used one time only	103(75.2)	34(24.8)	85(63.9)	48(36.1)
19.	A condom can protect against STIs	92(67.2)	45(32.8)	84(63.2)	49(36.8)
20.	Zero grazing (one faithful partner) can help to reduce the chance of getting STIs	83(60.6)	54(39.4)	76(67.1)	57(42.9)
21.	Douching is another means of preventing STIs	79(57.7)	58(42.3)	64(48.1)	69(51.9)
22.	Treatment after intercourse helps to prevent	101(73.7)	36(26.3)	66(49.6)	70(50.4)
23.	Regular visits to STIS clinic	98(71.5)	39(28.5)	85(63.9)	48(36.1)
24.	Sex education from health professionals help to minimize STIs	109(79.6)	28(20.4)	95(71.4)	38(28.6)
	Cluster average	69.35	30.65	59.6	40.4
	Overall average	54.43	45.56	46.95	53.04

The results in Table 3 show that overall, male and female in-school adolescents had moderate knowledge of common STIs (54.4% vs 46.9%).

Table 4: Summary of Chi-square Analysis Showing Difference in the Knowledge of Common STIs among In-school Adolescents Based on Age (n=270).

Variable	N	Knowledge of common STIs		X^2	df	p-value
		Yes O (E)	No O (E)			
Age						
12 – 16 years	225	143 (153.3)	82 (71.7)			
17 – 21 years	42	38 (28.6)	4 (13.4)	13.235	2	0.001
≥ 21 years	3	3(2.0)	0 (1.0)			

Significant at $p \leq 0.05$

Table 4 shows the results of chi-square analysis conducted to examine difference in the knowledge of common STIS among in-school adolescents based on age. The results show that there was a significant difference in the knowledge of common STIs among in-school adolescents based on age, $\chi^2 (2) = 13.235$, $p = 0.001$. Since the p-value is less than 0.05 level of significance, the null hypothesis is rejected. This implies that in-school adolescents of different age groups differed in their knowledge of common STIs.

Table 5: Summary of Chi-square Analysis Showing Difference in the Knowledge of Common STIs among In-school Adolescents Based on Gender (n=270)

Knowledge of Common STIs	
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Variable	N	Yes O (E)	No O (E)	χ^2	df	p-value
Gender						
Male	137	109 (93.4)	28 (43.6)	16.692	1	.000
Female	133	15 (90.6)	58 (42.4)			

Significant at $p \leq 0.05$

Table 5 shows that results of chi-square analysis conducted to examine difference in the knowledge of common STIs among in-school adolescents based on gender. The results show that there was a significant difference in the knowledge of common STIs among in-school adolescents based on gender $\chi^2 (1) = 16.692, p = .000$. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This implies that male and female in-school adolescents differed in their knowledge of common STIs.

Discussion

Results in Table 1 showed that overall, in-school adolescents in Nsukka LGA had moderate level of knowledge of common STIs. The finding is expected and not surprising. This is because adolescents especially in-school adolescents must have had information about common STIs. The corresponding hypothesis in table 4 showed that there was significant difference in the knowledge of common STIs based on age. This finding have implication for ministry of health, health educators, parents, policy makers, healthcare providers who will precisely assist the ministry of health in formulating suitable and sustainable programmes on the common STIs. The finding agree with Recharadson et al. (2016) that sexual orientation programmes in school are needed to encourage adolescents for a safe sexual behaviour, healthier and less exposed risk. The finding disagrees with Tadesse and Tewodros (2020) who concluded that the proportion of good knowledge about STIs was substantially low. Therefore, strengthening information, education and communication on the issue using health club and mass media is highly recommended.

Results in Table 2 showed that overall, 49.5 per cent in-school adolescents aged 12-16 years had moderate knowledge of common STIs while those aged 17-20 years (61.8%) and ≥ 21 years (65.7%) had high knowledge of common STIs. The finding is expected and therefore not surprising. This is because old In-school adolescents are expected to have more knowledge of STIs and they also feel more comfortable talking STIs than the younger adolescents. The corresponding hypotheses in Table 4 showed that there was a significant difference in the knowledge of common STIs based on age. The study have implication for parents, health educators, communities who may use the information of STIs based on age to correct various misconceptions about STIs which will enhance individual's health and also lighten the standards of living. Health counselors can also use the finding to counsel adolescents who indulge in an unprotected sex and multiple sexual partners on the danger of contracting STIs. The study agree with Niviane et al., (2017) that teenage boys and girls were able to define the concept of STIs. That it is important to promote adolescents health through information and school activities that also includes families, as well as the union between health services and teachers with the aim to empower these adolescents in regards to decisions and on safe sexual practices.

Knowledge of common STIs among In-school adolescents based on gender.



Results in Table 3 showed that overall, In-school adolescents regardless of gender had moderate knowledge of common STIs. The finding was expected and therefore not surprising. This is because adolescents of both gender are expected to have moderate knowledge about STIs though men are more open to STIs related thoughts and feelings while women are somewhat more concerned about keeping this thought and feelings in check. The implication for the finding is that teachers, curriculum planners, students will use the information to know the common STIs and it's health implications and also help them to appreciate the importance of health education in schools. The information generated will help parents to know the need of teaching their children especially the female ones sex education at home. The corresponding hypothesis in Table 5 showed that there was significant difference in the knowledge of common STIs based on gender. The finding is in consistent with the finding of Abaribe and Ajao (2020) who reported that knowledge level of the female adolescents about STIs was moderate but slightly below average while the female adolescents were sexually active. It was recommended among others that there is need for more aggressive effort by all stake holders, parents, teachers, and government agencies to provide sexual information to adolescents girls.

Conclusions

The findings have shown that in-school adolescents had moderate level of knowledge of common STIs. However, in-school adolescents aged 17-20 years and those aged. ≥ 21 years had high knowledge of common STIs while those aged 12-16 years had moderate level of knowledge of common. Furthermore, in-school adolescents regardless of gender had moderate level of knowledge of common STIs. A significant difference was found in the knowledge of common STIs among in-school adolescents based on age. Additionally, a significant difference was found in the knowledge of common STIs among in-school adolescents based on gender.

Recommendations

1. The Ministry of Health, non-governmental organizations (NGOs) and other health-related agencies should design information dissemination programmes for adolescents on the dangers of STIs. Curriculum in schools, colleges and universities should be diversified in order to accommodate topics on STIs, which could be inculcated in their general studies courses. This will facilitate the better understanding and sound knowledge of STIs. Teachers, especially health education teachers, should lay emphasis on the need practice of knowledge acquired rather than mere acquisition. This is in view of the fact that in-school adolescents possessed moderate level of knowledge of common STIs including the preventive measures, yet the incidence of STIs in the society is exceptionally high.
2. Parents should give their children proper sex education, informing them of the dangers of pre-marital sex, infidelity after marriage and encourage questions concerning sex and providing the right and realistic answers.
3. Government should embark on sensitization workshops and public enlightenment campaigns to educate the general population of young adults on the sexually transmitted infections and the importance of regular screening for sexually transmitted infections.

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