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Perception of Sexually Transmitted Infection-Preventive Measures among Senior Secondary School Students in Nnewi-North Local Government Area, Anambra State, Nigeria

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Abstract

Background: Sexually transmitted infections-preventive measures are effective methods employed in the prevention of sexually transmitted infections [STIs]. Sexually transmitted infections are among the most common infections in the world and therefore a major public health problem as they cause devastating long term consequences if untreated, especially in adolescents. Sexually transmitted infection-preventive measures, if correctly and consistently used, have been proven to be efficacious. Methodology: This was a cross-sectional descriptive study carried out among SS2 and SS3 students in Nnewi North Local Government Area of Anambra state, Nigeria. A structured, self administered questionnaire was administered to consenting senior secondary students to gather relevant information about socio-demogaraphic characteristics, knowledge about STIs, sexual behaviours. Three hundred and thirty four students participated in the study. Multi stage sampling technique was used. SPSS version 20 was used to analyze the data. Results were represented in tables and graphs. Results: Three hundred and thirty four students participated in the study, of which females and males are 167 each. 89% understood the

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meaning of STI. The majority of the respondents got the knowledge from TV/radio (34.4%), teachers (28.1%) and mother (27.0%). The majority of respondents knew that HIV/AIDS (89.8%), syphilis (58.1%) and Gonorrhoea (56.9%) were STIs. Good numbers of respondents knew the symptoms of STIs and risk factors of STI with unprotected sex and multiple sexual partners (57.5%) and (42.2%) respectively, as the highest risk factors. About 75.7% of respondents knew that HIV/AIDS cannot be cured. The Majority knew that avoiding sexual intercourse, being faithful to one partner and use of condom are preventive measures respectively. The majority of respondents (71%) felt they cannot be infected with an STI. 92.8% believed that STIs can be prevented. Age range for first sexual intercourse was 13 - 18 years for females and 8 - 19 years for males. Of the 86 that have had sexual intercourse, 48.8% had experienced one or more of the symptoms of STIs and the majority (80.9%) went to a hospital for treatment. Males (31.4%) are more likely to have multiple sexual partners than females (4.7%). Conclusion: The majority of the students had an objective knowledge on STIs transmission and prevention. Their overall attitude was positive but their practices were not satisfactory, especially for the males. Females were more careful and health conscious than their male counterpart.

Keywords

Knowledge, Sexually Transmitted Infections, Preventive Measures, Students

1. Introduction

Sexually transmitted infections [STI] are illnesses that have significant probability of transmission between human by means of sexual activities including vaginal intercourse, oral sex and anal sex. Sexually transmitted infection [STI] is a broader term than sexually transmitted disease [STD] [1]. Sexually transmitted infections may refer only to infections that are causing diseases or it may be used more loosely as a synonym for STD because most of the time people do not know that they are infected until they are tested or start showing symptoms of disease [2]. STD is a euphemism for venereal disease. STIs are among the most common causes of illness in the world and have far reaching health, social and economic consequence. They are therefore a major public health problem [3].

World health organization (WHO) estimates that 340 million curable STIs occur each year, including 170 million cases of trichomoniasis, 92 million cases of Chlamydia, 62 million cases of gonorrhoea and 12 million cases of syphilis. In the UK in 2007, the most common treatable STIs diagnosed were Chlamydia (more than 120,000 cases) and gonorrhoea (18,000 cases). Genital warts are the second most common complaint seen in the genitourinary medicine department [4].

Groups that are at greater risk for some sexually transmitted infection include adolescents, men who have sex with men (MSM) and intravenous drug users (IDUs). The presence of an STI in young children, unless acquired during birth, strongly suggests sexual abuse [5]. People with STIs are more susceptible to HIV while the infectivity of HIV patients is increased if they have STI. In effect, STI facilitates the spread of HIV [3].

There are several STI preventive measures and they include: Abstinence, being faithful to a faithful partner, using condoms consistently and correctly, avoiding excessive use of alcohol or drugs, vaccination, early diagnosis and treatment. This study was designed to: Determine the perception of the senior secondary school students regarding STI preventive measures.

Young people are at risk of sexually transmitted infections (STI). The incidence of Chlamydia infection in the UK is highest among women aged 16 - 19. Despite this, young people lack knowledge about STI preventive measures and are more aware of the risks of unwanted pregnancy than the risk of acquiring an STI [4].

According to 2005 World Health Organization (WHO) estimate, 448 million new cases of curable STIs (Syphilis, Chlamydia, Gonorrhea and Trichomoniasis) occur worldwide each year in adults aged 15 - 49 years, with the highest rates among 20 - 24 years age group, followed by 15 - 19 years age group. One in 20 young people is believed to contract an STI each year excluding HIV and other viral infections. A minority of adolescent have

access to any acceptable and affordable STI services [5].

A study in India among adolescents reported that 71% had no knowledge of the effects of genital herpes infection, 43% did not know the consequences of acquiring syphilis and 28% were unaware that Gonorrhoea was an STI [6].

A cross-sectional study in Europe reported low level of awareness and knowledge of STDs, with the exception of HIV/AIDs [7]. Studies in Ghana showed that school students had unsatisfactory knowledge of STDs, and boys tended to be more knowledgeable than girls [8] [9]. A study done by Joseph O. Ogbe in Delta state, Nigeria, showed that there was no difference between males and females on their knowledge, source of information and practice of condom use in the prevention of STIs. However, there was significant relationship between knowledge, source of information and practice of condom use in prevention of STIs. Among the recommendations was the need to intensify campaign on STIs in the rural areas in Delta State [10].

A study done in Ilesa, Nigeria, showed that 63% of the secondary school students have had sexual intercourse. Males were more sexually active than females. The mean age at first intercourse was 12 years with a range of 6 - 19 years. Many of the respondents had multiple sexual partners. There was poor perception of the risk of STIs including that of HIV [11].

A study in Benin City, Nigeria, among adolescents revealed that participants perceived that sexual activity is common among their peers. They noted that the desire for materials or financial gain is the primary motivation for sexual relationship [12]. A study conducted by Obiechina *et al*. among adolescent girls in Onitsha, showed that there was good general awareness of the common STDs: HIV/AIDS—93.6%, Gonorrhoea—76.3%, Syphilis—69.1% and Chlamydia—6.6%. Knowledge of causes of STDs was high. Viruses were identified as the most common cause of STDs by 75.3% of the respondents, followed by bacteria 64.1% while 17.8% of the students believed that poison/witchcraft cause STDs. Surprisingly, 35.5% identified herbs and natural medicines as effective remedies for these STDs. 56.7% identified antibiotics as treatment for STDs, 33.8% antiviral drugs, while 30.3% of the students believed in prayer houses as a remedy. The most common source of information was through the school 80.6%, followed by television 80.1%, radio 73.1% and health workers 64.1%. Awareness about preventive measures was as follows: abstinence 67.4%, mutual fidelity 56.7% and condom use 54.8% [13].

The aim of this study was to determine the perception of the students regarding Sexually Transmitted Infections.

2. Methods

The study was conducted in Nnewi-North Local Government Area of Anambra State South East Nigeria. Nnewi is the only town in Nnewi-North Local Government Area. It has four villages: Otolo, Uruagu, Umudim and Nnewichi. Nnewi is the second largest city in Anambra state and is renowned for its high commercial activity. It is located east of the Niger River and about two kilometers south east of Onitsha in Anambra state Nigeria [14].

According to 2006 census of the Federal Republic of Nigeria, it has an estimated population of 391,227 [15]. The city spans over 1076.9 square miles (2789 km^2) in Anambra state. Geographically, Nnewi falls within the tropical rain forest region of Nigeria. It is an epicenter of business trade mostly in automobile spare parts [14].

As a developing city and major industrial and commercial hub in Africa, it experiences voluminous financial activity. Therefore the city hosts major banks and other financial institutions. Religion occupies a central place in the heart of Nnewi people. This counts for the large number of churches and religious practices in Nnewi. The people of Nnewi are 96% Christians [14]. Nnewi hosts a number of institutions and places of learning and health care delivery [14]. Nnewi has 40 secondary schools of which 8 are governmental, while 32 are missions and private

The study population was senior secondary school students in Nnewi North Local Government Area.

This was a cross-sectional descriptive study among SS2 and SS3 students in Nnewi North Local Government Area assessing their perception of STI preventive measures.

Sample Size Determination

For population <10,000 minimum sample size was determined using the formula for cross sectional descriptive studies [16]:

$$N = n/(1 + n/nx)$$

where: N = minimum sample size, nx = population size, n was determined using the formula: $n = Z^2 P(1 - p)/d^2$, Z = standard normal deviate usually 1.96, P = prevalence… taken as 50% (0.5), D = margin of error to be tolerated set as 5% (0.05) =303.65. Attrition rate was taken as 10%, therefore total calculated sample size = 334.

Multistage sampling technique was used. Data was collected using structured questionnaire which was self administered and adopted from the WHO Youth and STIs fact sheet [17] and adapted for this study. Informed consent was obtained from each participant.

The data collected was analyzed using SPSS Version 20. The result was represented in frequency tables and graphs.

Ethical approval for the study was obtained from the Ethics Review Committee of Nnamdi Azikiwe University.

3. Results

Table 1 shows that the majority of the students were 17 years old. Also the mean age of the students was17 years.

Table 2 shows that the majority of the students learnt about STIs through the electronic media (TV and radio).

Table 3 shows that the majority of the students know about HIV, followed by Syphillis but very few know about Trichomoniasis.

Of the 334 respondents, 223 (66.8%) know that pain during urination is a symptom, this was the commonest symptom known to the respondents (**Table 4**).

The commonest risk factor known to the respondents is unprotected sex (42.2%), and the least known risk factor is drug abuse (2.1) (**Table 5**).

Out of the 334 students 51.5%, 55.4%, 32.3%, 19.5%, 22.5%, 13.2% respectively knew that, infertility in men, infertility in women, chronic pelvic pain, ectopic pregnancy, abortion and cancer are consequences of STIs in both men and women (**Table 6**).

Out of 334 students, the highest known preventive measures is avoiding sexual intercourse (84.4%), followed by being faithful to one partner (46.7%), use of condoms (43.4%), vaccination (10.8%) and avoidance of excessive use of alcohol (3.9%) (**Table 7**).

The majority of the respondents (44.6%) would rather discuss sexual matters with their mother (**Table 8**).

The youngest age at first intercourse for the females is 13 years, while that of males is 8 years (**Table 9**).

Males are more likely than females to have multiple sexual relationships, and this difference between the two sexes is statistically significant (**Table 10**).

The commonest preventive measure practiced by the respondents is abstinence (**Table 11**).

Out of 86 students, 42 students (M = 32, F = 10) used condoms in their last sexual intercourse, while 44 students (M = 26, F = 18) didn't use condom in their last sex. There is no statistically significant difference between males and females that used condom in their last sexual intercourse (**Table 12**).

4. Discussion

The age range was 14-25 years with mean age of 17 years and mode of 17 years. The age of the females ranged between 14 and 20 years while that of males was between 14 and 25 years. This is similar to the age range of 14 - 19 years for females in the research done among adolescent school girls in South Delhi, India [6].

On assessing their source of information, 34.4% had their source as TV/radio, 28.1% teachers, mothers (27.0%), seminar (18.3%), magazines and internet (12.9%), father (11.1%), friends (10.0%) and guardian (3.6%). This contrasts with the work done in Onitsha, Nigeria among adolescent, where 80.6% of students mentioned school followed by TV (80.1%) and radio (73.1%) as sources of information [13]. A Study in Delhi, India among adolescent school girls reported friends (76%), media (72%) as their main source [6] and it has a sharp contrast because least reported friends in this study as a source (10.0%) but corresponds with the high number of media. The high frequency of TV/radio and teachers shows that these age groups have access to TV/radio and that sex education is highly regarded in these institutions.

Of the seven STIs assessed (Syphilis, Gonorrhea, HIV/AIDS, Genital Herpes, Chlamydia, Trichomoniasis and HPV), awareness was generally high for HIV/AIDS (89.8%) syphilis (58.1%) and Gonorrhoea (56.9%). This corresponds with the high awareness for HIV/AIDS (90%) in a study done in Europe [7], 91.4% in a study done

Table 1. Age-sex distribution of the respondents.

Age	Males	Females	Frequency
14	6	2	8
15	10	19	29
16	29	50	79
17	45	67	112
18	48	22	70
19	17	6	23
>20	12	1	13

Table 2. Sources of information about STI by respondents.

Source	Frequency	Percentage
Mother	90	27.0%
Father	37	11.1%
Guardian	12	3.6%
Teacher	94	28.1%
Friends	33	10.0%
TV/Radio	115	34.4%
Magazines	42	12.6%
Seminar	61	18.3%
Internet	43	12.9%

Table 3. Knowledge of types of STIs.

Types	Females	Males	Total frequency	Percentage %
Syphilis	105	89	194	58.1%
Gonorrhoea	99	91	190	56.9%
HIV/AIDS	144	156	300	89.8%
Genital herpes	39	16	55	16.5%
Chlamydia	10	9	19	5.7%
Trichomoniasis	8	8	16	4.8%
HPV	16	17	33	9.9%

Table 4. Knowledge of symptoms of STIs.

Symptoms	Females	Males	Total frequency	Percentage
Pain during urination	121	102	223	66.8
Vaginal discharge	82	52	134	40.1
Vomiting	23	22	45	13.5
Headache	22	21	43	12.9
Ulcer in the genital area	29	19	48	14.4
Lower abdominal pain	59	25	84	25.1
Diarrhoea	19	9	28	8.4
Itching at the genital area	82	51	133	39.8
Pain during sex	70	45	115	34.4
Discharge from the penis	52	50	102	30.5
Don’t know	11	29	40	12.0

in India [12]. This also agrees with a study done in Onitsha, Nigeria among adolescent girls [13]. In the index study 9.9% considered HPV and as a type of STI, which corresponds with the low knowledge for HPV (5.4%)

Table 5. Knowledge of risks factor of STIs by respondents.

Risk factors	Females	Males	Total frequency	Percentage
Poor hygiene	19	4	23	6.9%
Multiple sexual partners	77	64	141	42.2%
Unprotected sex	106	86	192	57.5%
Blood transfusion	54	51	105	31.4%
Not using mosquito net	1	1	2	0.6%
Sexual abuse	63	39	102	30.5%
Excessive use of alcohol	2	2	4	1.2%
Drug abuse	3	4	7	2.1%
Use of sharp objects	19	28	47	14.2%
Don't know	7	19	26	7.9%

Table 6. knowledge of consequences of STIs.

Consequences	Female	Male	Frequency	Percentage
Infertility in men	100	72	172	51.5
Infertility in women	107	78	185	55.4
Cancer	30	14	44	13.2
Chronic pelvic pain	72	36	108	32.3
Ectopic pregnancy	37	28	65	19.5
Abortion	36	39	75	22.5
Mental retardation	20	14	34	10.2
Death	109	87	196	58.7
Don't know	16	24	40	12.0

Table 7. Knowledge of preventive measures of STIs.

Preventive measures	Female	Males	Total frequency	Percentage
Avoiding sexual intercourse	145	137	282	84.4
Use of insecticide treated nets	12	9	21	6.3
Vaccination	23	13	36	10.8
Being faithful to one partner	91	65	156	46.7
Use of condoms	54	91	145	43.4
Douching after sex	7	11	18	5.4
Oral contraceptive	9	12	21	6.3
Keeping toilets clean	45	22	67	20.1
Avoid excessive of alcohol	6	7	13	3.9

Table 8. Respondents choice on whom to discuss sexual matters with.

Choice	Females	Males	Total	Total %
Father	2	18	20	6.0
Mother	107	42	149	44.6
Friends	19	27	46	13.8
Teacher	2	4	6	1.8
Male doctor	5	61	66	19.8
Female doctor	49	20	69	20.7
Elder sister	1	0	1	0.3
Boyfriend	1	0	1	0.3
Nobody	0	1	1	0.3

Table 9. Age of respondents at first intercourse.

Years	Females	Males	Total frequency
8	0	3	3
9	0	2	2
10	0	4	4
11	0	2	2
12	0	8	8
13	4	5	9
14	9	6	15
15	0	8	8
16	5	6	11
17	6	6	12
18	4	5	9
19	0	3	3
Total	28	58	86

Table 10. Number of sexual partners of respondents within the last 3 months.

No	Females	Males
1	6	4
2	0	11
3	0	5
4	0	10
5	0	3

$X^2 = 18.4$, df = 4, $p \leq 0.005$.

Table 11. Preventive measures practiced by the respondents.

Preventive measures	Female	%	Male	%	Total frequency	Percentage
Avoiding sexual intercourse	139	41.6%	109	32.6%	248	74.2%
Vaccination	12	3.6%	5	1.5%	17	5.1%
Being faithful to one partner	24	27.9%	31	36.0%	55	63.9%
Use of condoms	10	11.6%	32	37.2%	42	48.8%
Douching after sex	3	3.5%	4	4.7%	7	8.2%
Oral contraceptive	3	3.5%	0	-	3	3.5%
Avoid excessive use of alcohol	1	0.3%	3	0.9%	4	1.2%
Don't use any	7	2.1%	12	3.6%	19	5.7%

Table 12. Practice of use of condoms during last intercourse.

Response	Females	Males	Total frequency
Yes	10	32	42
No	18	26	44

$X^2 = 2.9$, df = 1, $p > 0.05$.

in a study done in Europe among school going adolescent [7].

Awareness about the preventive measures showed that 84.4% believe that avoiding sexual intercourse is preventive, being faithful to one partner (46.7%), use of condom (43.4%), vaccination (10.8%), and avoidance of excessive use of alcohol 3.9%. This contrasts with a study done in Onitsha, Nigeria among adolescents where abstinence was 67.4%, mutual fidelity (56.7%) and condom use (54.8%) [13].

Among the respondents that have experienced STI symptoms 82.9% went to the hospital, 2.4% went to the patent medicine dealer, while 14.6% did not seek for treatment. This contrasts with the study done by Miriam J.

Temin *et al.*, in Benin City where the respondents were unlikely to seek treatment from the hospital but rather traditional healers [12]. Reasons for choosing hospital were mainly because they felt it was the best place to seek for cure. Patent medicine dealer was chosen because it was near and cheap. Those that had no treatment said that they were ashamed of disgrace and that the symptoms were not severe.

One hundred and thirty-nine (83.2%) of females practiced abstinence as against 65.3% (109) of males. 27.9% of females are faithful to one partner against 36.0% of males. 11.6% of females use condoms as against 37.2% of males. 88% of the males that were sexually active in the last 3 months had multiple sexual partners compared with none among the females who were sexually active in the last three months. This disparity between the males and females is similar to the finding of a study done in Ghana in which 62% of males 32% of females had [8].

The number of people reporting none use of condoms during last sexual encounter was significantly higher among males (44.8%) than females (64.3%). This corresponds with 37% of males and 29% of females in the study done by Quyen Duong in Ghana [8]. This is also similar to the study done among adolescent school girls in South Delhi, India [6]. Mean age at first intercourse was 14.1 for males while that of females is 15.4, this has a similarity with mean age for males 14.5 and 15.1 for females in the work done by Quyen Duong in Ghana [6] but sharp contrast with the mean age of 12 years and range of 6 - 19 years in the work done by Owolabe *et al.*, in Ilesa, Western Nigeria [11].

The overall practice of safe social and sexual behavior amongst these students clearly shows that females are more careful and health conscious than their male counterparts which is statistically significant.

5. Conclusion

Most of the students had objective knowledge on STI's transmission and prevention. Their overall attitude was positive but their practices were different especially between males and females. Females were more careful and health-conscious than males. Recommendations: Sexual health education should be promoted among adolescents especially in the male adolescents. Reproductive health consequences of pre-marital sex should be explained to students. Special adolescent friendly clinics should be established by governments with adequate privacy to encourage adolescents to come and treat their health problems.

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