Knowledge and Preventive Practices of Sexually Transmitted Infections among Secondary School Students in Edo State

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Abstract

Despite interventions, Sexually Transmitted Infections (STIs) remain huge challenge especially among sexually active age group in developing countries. Adopting strategies to prevent and combat the spread of STIs have become imperative as they are occurring at an alarming rate with adolescents becoming increasingly susceptible. This study examined the knowledge and preventive practices of Sexually Transmitted infections among secondary school students in Edo State, Nigeria. Multi-stage sampling procedure was adopted to select 763 students for the study. The instrument was a validated multiple choice and dichotomous scale format questionnaire containing items on knowledge and preventive practices of STIs. Data obtained were analyzed using percentages, means ant t-test statistics. Findings revealed that students had good knowledge of STIs but preventive practices were low. Knowledge, though mainly acquired from teachers did not correlate with preventive practices. The main STIs known by students were HIV/AIDS, Gonorrhea and Syphilis while abstinence was the major preventive practice adopted. It was concluded that although students have good knowledge of STIs, compliance with preventive practices was low. However, the weighted knowledge/preventive score average for the respondents based on their sex and location was poor (<20), a strong indication of the urgent need for educational intervention to increase knowledge that will translate to positive preventive practices

Key Words: Knowledge, Preventive practices, Adolescents, STIs, Edo State

Introduction

Sexually transmitted infections (STIs) are now among the most significant public health concern causing a variety of health challenges especially among young people not only in developed countries but also in developing countries (Otubu,2006; Samkange-Zeeb et al., 2011; Aliyu et al., 2013; Demis et al., 2017).Sexually Transmitted Diseases (STDs) which were in earlier times called Venereal Diseases (VDs) are now known as Sexually Transmitted Infections (STIs) since a person may be infected and not essentially develop the diseases (Workowski & Berman, 2010; Samkange-Zeeb et al., 2011; Habu et al., 2018), are ailments that are mainly transmitted among humans through

sexual contact which may be vaginal, oral or anal (Samkange-Zeeb et al., 2011). Although the most prominent STIs include gonorrhea, syphilis chancroids and lymphogranuloma venerum, there are still about twenty other infections often referred to as second generation STIs transmitted by bacteria, virus, parasite, protozoa and fungal agents (Demis et al., 2017). If STIs are not treated adequately, they can lead to serious complications which include chronic illness, infertility, cervical cancer, urethral stricture, malignancies, disability and death (Nsuam et al., 2010; De Waure et al., 2015).

The social and economic toll in terms of identification and management of STIs on nations of the world is quite significant (Chesson et al., 2004; Otubu, 2006). Developing countries of the world present eighty six percent of the world's burden, the largest proportion are in the poor nations mainly in sub-Saharan Africa, where identification and control of STIs is inadequate. The level of poverty in developing countries including access to credible information are among critical factors responsible for increasing vulnerability to STIs including HIV/AIDS (Demis et al., 2017). Adolescents have been identified as being vulnerable and at high risk of contracting STIs (Sekirlme et al., 2001; Habu et al., 2018). About two third (2/3) of all sexually transmitted infections occur in people younger than 25 years of age (Habu et al., 2018). Several factors which include, early sexual initiation, unprotected sexual intercourse, multiple sexual partners, engaging in trans-generational and transactional sexual activities, place them at risk (Tilson et al., 2004; Aliyu et al., 2013; Amu & Adegun, 2015; Fehintola et al., 2018). Furthermore, they may have limited access to STI information and services and may also feel uncomfortable approaching such facilities even where they are available (Tilson et al., 2004).

Adequate knowledge on STIs transmission and methods of prevention are important starting point and a major component of sex education in the promotion of informed and healthy options (Kraft, 1993; Lahai-Momoh & Ross, 1997; Johnson et al., 1999; Bobrova et al., 2005)). However, knowledge have also been reported to have a limited effect in translating to attitude and behaviour change especially among adolescents (Lister-Sharpe et al., 1999; Wight, 2002; Tucker et al., 2006; Nsuami et al., 2010; Stephenson, 2011). Several misconceptions which include, STIs being viewed as unavoidable, seen as initiation into adulthood, condoms reducing sexual pleasure and traditional norms which promote female subordination are among the factors which influence STIs preventive measures among the youth subgroup (Eaton et al., 2003; Magnani et al., 2003). Knowledge about STIs is primarily acquired through formal education. Other sources also frequently mentioned include parents, peers and the media (Siegal et al., 1998; Clark et al., 2002; Synovitz et al., 2002; Ancheta et al., 2005). However, acquiring in-depth and adequate information from teachers and parents often perceived as the most credible sources may suffer certain limitations. For example, in some developing countries including Nigeria, discussing sexual issues are often considered as taboos due to religious and cultural barriers (Mwambete & Mtaturu, 2006). Political factors and youth culture on the other hand also influence the smooth flow of STIs education especially in schools (Mwambete & Mtaturu, 2006). Knowledge about STIs has also been reported to be higher among individuals who have had the infection than those with no history (Andersson-Ellström & Milsom, 2002; Kelly et al., 2003; Downs et al., 2006). The knowledge of STIs acquired from other sources in addition to personal experience should form a strong basis for behavioural interventions that prompt

individuals towards safer sexual behaviour and probably reduce the risk of infection (Aral, 2002; Lawrence & Fortenberry, 2007). The gap between knowledge and sexual practices related to STIs among various populations still remain high (Samkange-Zeeb et al., 2011). Public health campaigns targeted at identification and bridging the knowledge- practice gaps among secondary school students will provide an important framework in the control of STIs through educational interventions.

Objectives of the Study

1. To analyze the difference in knowledge of STIs among secondary school students in Edo state based on sex and location.
2. To examine the difference in preventive practices for STIs among secondary school students in Edo State based on sex and location
3. To explore the relationship between STIs knowledge and preventive practices among secondary school students in Edo State.

Materials and Method

Research Design

The descriptive survey design was adopted for the study.

Sample and Sampling Technique

A sample size of seven hundred and sixty-three (763) respondents was used for this study. The population for this study is 92,063 students in public senior secondary schools in Edo State. The multi-stage sampling procedure comprising cluster, purposive, proportionate stratified random sampling techniques was used to select the sample size for the study.

The first stage was the clustering of the 18 LGAs into the three senatorial districts in Edo State which are, Edo South (7 LGAs), Edo Central (5 LGAs) and Edo North (6 LGAs). Purposive random sampling technique was then adopted to select three LGAs from each of the clusters. Thus for Edo South senatorial district (Orhionmwon, Oredo and Ovia North-East), Edo Central senatorial district (Esan North-East, Esan Central and Esan West) and Edo North senatorial district (Etsako West, Etsako Central and Owan East). This gave a total of nine LGAs.

The third stage involved clustering the schools in each of the LGAs selected into urban co-educational schools, rural co-educational schools and single sex schools after which simple random sampling technique using balloting without replacement was used to pick one school from each cluster across the nine LGAs to give a total of 27 schools. However, there was an aberration at this stage because Esan West L.G.A had no single sex school; hence a co-educational school was picked as a replacement. In the final stage, proportionate stratified random sampling technique was applied to select 10% of the students from the 27 schools purposively selected.

Instrument

A pre-tested questionnaire designed by the researcher was used to elicit information on the demographic information of the respondents as well as their knowledge and preventive practices for STIs. Twenty five multiple choice questions were used to test for knowledge of STIs. Each correct answer was scored four points while wrong answers were scored zero. The maximum score obtainable was one hundred (100) while the least was zero (0). Thus, Scores between 70- 100 were

considered to be Excellent Knowledge (A), 60-69, Very Good Knowledge(B), 50-59, Good Knowledge (C), 40-49 Fair Knowledge(D), 30-39, Poor Knowledge(E) and 0-29, Very Poor Knowledge(F). For preventive practices, ten questions with dichotomous and three response options were used to assess the respondents. For two response option questions, "Yes" was scored ten points while "No" was scored zero. For three response option questions, "Always" was scored ten points, "Sometimes" was scored five points and "Never" was scored zero. The range of scores obtainable was between 0-100, with one hundred as the highest score and zero as the lowest. The knowledge and preventive practice scores for male, female, urban and rural students were computed by assigning 1-6 points to very poor-excellent. The weighted knowledge and preventive practice scores average for each category was computed as the mean sum of the product of score and percentage score and classified as follows:

Knowledge/Preventive Practice Average (%)	Classification
0-20	Poor
21-40	Fair
41-60	Good
61-80	Very good
81-100	Excellent

Administration of Instrument

The research instrument was administered personally by the researcher and two research assistants. The researcher explained and discussed in details the various sections of the research instrument with the research assistants before administration. In all the schools visited, the researcher with the permission and assistance of the school authority ensured that the respondents had a conducive environment that provided some level of privacy. In all the schools, well arranged classrooms were provided, this created an atmosphere that guaranteed confidentiality of their responses because of the sensitivity of the study. All the distributed instruments were completed and retrieved immediately and the return rate was 100%.

Data Analysis

The collected data were coded and analyzed using descriptive statistics of percentages while t-test statistics and Pearson Product Moment correlation was used to test hypotheses at 0.05 significant level.

Presentation of Result

Table1: Socio-demographic characteristics of respondents

CHARACTERISTICS	*FREQUENCY*	*PERCENTAGE*
SEX		
MALE	***387***	***50.7***
FEMALE	***376***	***49.3***
TOTAL	***763***	***100***
CLASS		
SSS1	***269***	***35.2***
SSS2	***259***	***34.0***
SSS3	***235***	***30.8***
TOTAL	***763***	***100***
AGE		
10-12	***04***	***0.5***
13-15	***274***	***35.9***
16-18	***447***	***58.6***
19 AND ABOVE	***38***	***5.0***
TOTAL	***763***	***100***

Table 1 provides information on the demographic characteristics of the respondents. The sex distribution indicates that 50.7% were male while the female respondents were 49.3%. In terms of class, the table shows that 35.2% were in SSS 1 while those in SSS 2 and SSS 3 were 34.0% and 30.8% respectively. Majority of the respondents were between ages 13-15 (35.9%) and 16-18 years(58.6%).

Table 2: Information on STI Knowledge and Prevention Practices

CHARACTERISTICS	*FREQUENCY*	*PERCENTAGE*
LEVEL OF STI KNOWLEDGE		
EXCELLENT	*55*	*7.2*
VERY GOOD	*169*	*22.2*
GOOD	*168*	*22.0*
FAIR	*229*	*30.0*
POOR	*73*	*9.6*
VERY POOR	*69*	*9'0*
TOTAL	*763*	*100*
SOURCE OF STI INFORMATION		
TEACHERS	*484*	*63.4*
TELEVISION/RADIO	*368*	*48.2*
PARENTS	*336*	*44.0*
HOSPITAL	*323*	*42.3*
FRIENDS	*273*	*35.8*
INTERNET	*243*	*31.8*
MAGAZINE/NEWSPAPER	*232*	*30.4*
SEMINAR	*145*	*19.0*
SIBLINGS	*137*	*18.0*
BULLETIN/FLIERS	*117*	*15.3*
PREVENTIVE PRACTICES FOR STIS	*457*	*60.0*
ABSTINENCE	*79*	*10'4*
FAITHFUL TO ONE PARTNER	*73*	*9.6*
USE OF CONDOM	*38*	*5.0*
REGULAR CHECKUP	*24*	*3.1*
USE OF LOCAL HERBS	*22*	*2.8*
USE OF ANTIBIOTICS	*21*	*2.7*
GENITAL CREAM	*18*	*2.4*
DOUCHING	*18*	*2.4*
ORAL CONTRACEPTIVE	*13*	*1.7*
VACCINATION		
LEVEL OF STIS PREVENTIVE	*20*	*8.6*
PRACTICES	*16*	*6.8*
EXCELLENT	*37*	*15.8*
VERY GOOD	*32*	*13.6*
GOOD	*40*	*17.1*
FAIR	*89*	*38.1*
POOR	*234*	*100*
VERY POOR		
TOTAL		

The level of STIs Knowledge among respondents as seen in table 2 was mainly very good 169(22.2%), good 168(22.0%) and fair 229(30.0%), only 7.2% had excellent knowledge of STIs. The main sources of STIs information for the respondents were Teachers (63.4%), Television/radio (48.2%), Parents (44.0%) and Hospital (42.3%). Data on preventive practices of the students showed that the major source of STI prevention for students was abstinence (60.0%). However, for the sexually active respondents, over 50% of them had poor and very poor preventive practices.

Table 3: Weighted Knowledge and Preventive Practice Scores Average

CATEGORY	*KNOWLEDGE SCORE AVERAGE*	*CLASSIFICATION*	*PREVENTIVE SCORE AVERAGE*	*CLASSIFICATION*
MALE	***16.8***	***POOR***	***13.1***	***POOR***
FEMALE	***17.5***	***POOR***	***10.8***	***POOR***
URBAN	***17.5***	***POOR***	***12.9***	***POOR***
RURAL	***16.3***	***POOR***	***11.6***	***POOR***

The knowledge score average of the respondents as presented in table3 was 16.8% for male and 17.5% for female while urban and rural respondents had scores of 17.5% and 16,3% respectively. Preventive score average for the respondents was 13.1%, 10.8%, 12.9% and 11,6% for male, female, urban and rural respondents respectively. Classification of knowledge and preventive score average in all categories was generally poor.

Table 4: STI knowledge difference based on sex and location of students

	N	*MEAN*	*STD. DEVIATION*	*DF*	*T-VALUE*	*P-VALUE*
SEX						
MALE	***387***	***49.246***	***14.799***	***761***	***1.538***	***0.124***
FEMALE	***376***	***50.886***	***14.649***			
LOCATION	***526***	***50.741***	***14.963***			
URBAN SCHOOLS	***237***	***48.527***	***14.140***	***761***	***1.924***	***0.055***
RURAL SCHOOLS						

The result of t-test analysis of difference in knowledge of STI between male and female students in secondary schools in Edo State is presented in Table 3. The analysis reveals that there is no significant difference in knowledge of STIs between male and female students. This implies that that gender had no influence on STIs knowledge among secondary school students in Edo State.

The table also provided the t-test of STI knowledge difference between students in urban and rural secondary schools. The result indicates that the t-value of 1.924 is not significant at 0.05 significant level. This equally implies that location did not have any influence on STI knowledge among secondary school students in Edo state.

Table 5: Difference in preventive practices based on sex and location of students

SEX	***N***	***MEAN***	***STD. DEVIATION***	***DF***	***T-VALUE***	***P-VALUE***
SEX						
MALE	*134*	*39.254*	*20.707*			
				231	*2.601*	*0.010**
FEMALE	*99*	*32.273*	*19.617*			
LOCATION						
URBAN			*20.558*			
	158	*36.772*		*231*	*0.523*	*0.602*
RURAL			*20.482*			
	75	*35.267*				

***Significant at 0.05**

The t-test analysis for difference in STI preventive practices between male and female secondary school students in Edo State is presented in table 4. The data showed that STIs preventive practices among the respondents was statistically significant at 0.05 significant level based on sex of respondents but not signification in terms of their location

Table 6: Students' STI knowledge and preventive practices

VARIABLE	*N*	*MEAN*	*STD. DEVIATION*	*PEARSON'S R*	*P-VALUE*
KNOWLEDGE	*234*	*50.054*	*14.738*		
				-0.052	*0.425*
PREVENTIVE PRACTICE	*234*	*36.288*	*20.502*		

Table 5 presents Pearson's correlation of students' STI knowledge and preventive practices. The table revealed that the number of respondents was 234 indicating those who were sexually active. The data presented showed r value of -0.052 and p-value of 0.425. Testing at alpha level 0.05. It therefore indicated that there was no relationship between STI knowledge and preventive practices

among students in secondary schools in Edo state. A negative r-value of -0.052 is an indication that there was an inverse relationship which implied that as knowledge increased, there was decline in preventive practice. It therefore means that knowledge of STIs does not have any influence on preventive practices of secondary school students in Edo State.

Discussion of Results

The results of the study revealed that the level of STI knowledge among adolescents ranged from excellent to poor. Most of the studies known to the researcher in this area looked at knowledge based on specific elements such as type, causes, symptoms and prevention of STIs. However for purpose of effective discussion and comparison the responses were regrouped to indicate good (51.4%), fair (30.0%) and poor (18.6%) knowledge of STIs. Although this study may not totally agree with a similar study carried out by Amu and Adegun (2015), in South Western Nigeria where respondents had good (6.9%), fair (74.0%) and poor (19.1%) knowledge of STIs. A small percentage having poor knowledge from both studies is an indication that effort has been intensified to increase knowledge of STIs in the last couple of years. The AIDS pandemic and the introduction of sexuality education have led to more sensitization through printed and electronic media. The availability of cell phones which have in-built radios and internet facility has also made information on STIs especially HIV/AIDS more accessible to the general public.

The role of teachers in the dissemination of STI information cannot be overemphasized as indicated in this study where 63.4% of the students mentioned teachers as their main source of information. This is in consonance with several studies carried out in Kenya, Nairobi and Columbia (Profamila,1996) and more other studies in Nigeria (Amu &Adegun, 2015; Obiechina et al., 2002), where teachers were also commonly mentioned. Other notable sources of information mentioned by the respondents were parents, electronic media and hospitals. This further strengthens the reports of Somers and Surmann (2004), which pointed out that young people preferred parents as their main source of STI information, Trangrud (1998), who also indicated that clinics were sometimes mentioned as preferred sources of STI information by adolescents. However, the researchers had their reservations about these sources as parents were seen as not too equipped and sometimes feel embarrassed to give detailed information while clinics were seen as an unfriendly environment for adolescents hence they are not likely to feel free to seek such information. The place of friends, newspaper/magazines and internet cannot be overlooked as indicated by the considerably high number of respondents in this study seeking information from these sources. This agrees with the findings of Subbaroa and Akhilesh (2017). They however expressed their fear of the authenticity of the information from these sources as they explained that such information could be misleading especially if the content has not been screened by qualified health professionals.

The weighted knowledge score averages for sex (male and female) and location (urban and rural) of respondents fall within poor category (<20%). This corroborates the assertions of Amu and Adegun (2015) and Lena and Hajo (2011) as well as Alexandra and Lipi (2008), which reported poor knowledge and perception of STIs among adolescents. This suggests that there are still knowledge gaps of STIs and calls for intensification of educational intervention to avert another wave of

HIV/AIDS and prevent other deadly STIs such as HPV in Nigeria. Gender and location however, had no influence on students' knowledge of STIs. This is in consonance with the findings of Ogbe (2011), among rural dwellers in Delta State which also showed no difference between males and females in their knowledge of STIs but disagrees with some other studies in Ghana which reported more knowledge of STIs among males than females (LeQuyen, 2014; Amoakah-Coleman, 2006). It therefore suggests that intervention should target male and female adolescents alike.

As regards preventive practices, findings reveal that more than half of the respondents (60%), practiced abstinence as a measure for STI prevention. This corroborates the findings of Nwabueze et al. (2014) in a similar study conducted in Anambra State among adolescents. There were however slight differences in terms of gender and location as there were more abstainers among female and urban respondents. Furthermore, the findings slightly deviated from the survey report by the Federal Ministry of Health, Nigeria in 2005 which reported lower percentage abstinence as a preventive measure for STIs among adolescents aged 15-24 years, with only 47% females and 27% abstaining. Nevertheless, this report further confirms higher level of abstinence among females than males. One major reason for more adolescents deciding to abstain in recent times could be as a result of increased awareness about STIs especially HIV/AIDs as earlier stated. The fear of getting pregnant could be a possible explanation for having more females abstaining.

In general, there was a significant difference between males and females in their preventive practices as indicated on table 5which shows a p-value of 0.01 lower than the alpha level of 0.05. A higher mean value for males (39.254) than females (32.273) is an indication than males are in a better position to suggest protective measures than females and a further confirmation of the fact that we are in a patriarchal society where most decisions are taken by men. In terms of location, there was no significant difference in STI preventive practices between urban and rural respondents as seen on table which showed a p-value of 0.602 higher than the alpha level of 0.05. However, mean values of 36.772 (urban) and 35.267 (rural), is an indication that preventive practice is generally low among respondents as also indicated by gender. This was further indicated in the analysis on table 3 which reported poor prevention weighted score averages of < 20% among respondents. This is also similar to a South-East Nigeria which also reported poor preventive practice for STIs (Oluwole et al, 2020).

The findings of this study revealed that there is no significant relationship between knowledge of STIs and preventive practices among secondary school students in Edo State. A negative correlation coefficient value of −0.052 as seen on table 5 shows an inverse relationship, signifying that knowledge does not influence the practice of preventive measures for STIs among secondary school students in Edo State. There is no study known to the researcher that looked at knowledge and preventive practices for STIs holistically. However, in one study conducted by Ogbe (2011), among rural dwellers in Delta state, there was a relationship between knowledge of condom and it's use for STI prevention, this in any case did not agree with the findings of this study. Furthermore, the findings did not support the assertions of Adegbola, Babalola and Oni (1995), which stated that accurate information and knowledge of STIs should motivate logical safe sex behaviour. In their view, the level of accurate knowledge adolescents have about STIs is expected to influence their attitude towards the diseases as well as result in change in their sexual behaviour in favour of lower practice of unsafe sex. This was however not the case in this study.

The findings of this study have shown that knowledge alone is not a strong motivating factor for adolescents to adopt the necessary preventive measures for STIs. When viewed from the perspective of the Health Belief Model, these factors are very fundamental to the non-adoption of preventive measures for STIs. For example, respondents who perceive that abstinence is no longer valued in the society and also see having sex as a sign of maturity are not likely to perceive the benefit of taking action and may not even perceive the severity of taking action. This authenticates the finding of Nzioka (2001) and Brabin (1999), who reported that some adolescents and even adults in Romania and Zimbabwe respectively see contracting an STI as a sign of masculinity and something to be proud of. In recent times in Nigeria, it is almost a taboo for an adolescent to mention that he/she is a virgin.

Conclusion

Secondary School Students in Edo state generally have good knowledge of STIs. However, this knowledge does not have much influence on their preventive practices for STIs. The study reveals clearly that an excellent level of STIs knowledge which transcends beyond mere memorization and recall of information will probably influence practice as reflected in the weighted knowledge score average

Teachers, electronic media, parents and hospitals are the main sources of STIs knowledge for Secondary School Students in Edo State. Majority of the respondents knew HIV/AIDS gonorrhea and syphilis as STIs through mass media, teachers, parents and hospitals while others were rarely mentioned. Most of the students received information on STIs from one or more sources as indicated by the findings of this study, but knowledge gained did not really translate to practice. This is a confirmation that knowledge may not necessarily lead to develop of positive behaviour. It is therefore necessary to adopt holistic approach to the teaching of STIs and other issues related to adolescent sexual health. The aggressive use of media, road side shows, billboards, etc can be adopted to facilitate the dissemination of information on STIs. Such factual information when flooded all over can serve as "Cues to action" as explained in the Health Belief Model, can lead adolescents to make responsible decisions to help prevent STIs.

Generally, Secondary School students in Edo State irrespective of their gender and location are on the same level in terms of their knowledge of STIs but there are differences between male and female students in their STIs preventive practices.

Recommendations

Based on the conclusions, the following recommendations were made:

(5) Other STIs should be extensively discussed and given same level of attention like HIV/AIDS.This will help adolescents to appreciate more the dangers of these infections and thus may be prompted to practice the relevant preventive measures.

(6) There should be effective monitoring to ensure that information on sexuality and reproductive health issues passed through mass, electronic and social media are factual, relevant, adequate and non-conflicting.

(7) Sexuality education programmes in our schools should be adequately funded, monitored and encouraged by both government and non-governmental organizations.
(8) Capacity building programmes should be organized for adolescents to equip them with the necessary knowledge and skills they need to confidently take positive decisions regarding their sexual and reproductive health.

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