COMPARATIVE ANALYSIS OF PREVENTIVE PRACTICES FOR SEXUALLY TRANSMITTED INFECTIONS AMONG SECONDARY SCHOOL STUDENTS IN EDO STATE, NIGERIA

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Abstract
Preventing the spread of sexually transmitted infections (STIs) has become imperative due to the alarming rate of occurrence, especially among adolescents. This study therefore examined the preventive practices of STIs among secondary school students in Edo State, Nigeria. A total of 763 students were selected for this study using multistage sampling technique. Structure questionnaire was used to collect data on the preventive practices of STIs among the students. The data were analyzed using simple percentages and t-test. Findings revealed abstinence as the main preventive measure for STIs among students. However, the use of condom among sexually active respondents was low. The most significant factor influencing abstinence was eroding societal values while for condom, it was considered too expensive for regular use. There was significant difference in STIs preventive practices of the respondents based on gender but was not significant based on location. It was recommended among others, that capacity building programmes be organized periodically for students, teachers and parents to equip them with necessary skills to handle sexual issues, especially those that put them at risk of contracting STIs.

Keywords: *Sexually transmitted infections, comparative analysis, Preventive Practices, Adolescents, Edo State*

Introduction

Sexually Transmitted Infections (STIs) are major collective public health challenge affecting people all over the world, constituting huge health and economic burden especially to developing countries, (Anwar, Sulaiman, Ahmadi and Khan, 2010). It has imposed enormous morbidity and mortality rates on developing countries hence ranked among the five major causes of productive life loss in these countries (WHO, 2001). Sexually Transmitted Infections are those diseases that are transmitted mainly through sexual intercourse. Globally, an estimated one million new cases occur daily thus making up about 499 million curable but often untreated cases annually (WHO, 2012). Developing countries account for about 75-85% of the annual occurrence of new cases of curable STIs.

The importance of STIs has been more widely acknowledged since the advent of HIV/AIDS epidemic. In 2013, of the 34 million people living with HIV/AIDS, 4 million were aged 15-24 years (UNAIDS, 2014). Certain demographic factors undoubtedly contribute to increase in STIs in developing countries. The population explosion, marked increase in the number of young people, rural to urban migration, delayed marriage as a result of increasing

educational opportunity are some of the factors that put people at risk of STIs (Center for Disease Control and Prevention (CDCP), 2005). Age and sex are also major determinants of STIs. For most notifiable STIs, the highest rates of incidence are observed in 20-24years old, followed by 25-29years and 15-19years age groups (WHO, 2006).

Adolescence is a transitory period between childhood and adulthood with appearance of freshness and vitality. It is characterized by desire for independence and curiosity, marked with experimentation including limit testing especially in the area of drug and sex. Young people at this stage are eager to try new things without prior consideration of the consequences of their actions. Thus, they are prone to dangers that threaten their health and wellbeing (Habu et.al, 2018). Adolescents and young adults between the ages of 15-24years perceived to be more at risk of contracting STIs constitute the largest and fastest growing population in Sub-Saharan Africa. By 1995, the population of this group grew to 56 percent and in Nigeria, it accounted for 30million of its estimated 150million population.

Some studies conducted in developing countries have indicated that many adolescents engage in unprotected sexual intercourse (Tengia-kessy, Mamanga & Moshiro, 1998; Kiapi-Iwa & Hart, 2004). Early initiation of sexual activity which expose them to several partners over time coupled with inconsistent use of condom and low perception of risks are some factors that make them vulnerable to STIs (Tilson, Sanchez Ford et.al, 2004; Aliyu et.al, 2013; Amu & Adegun, 2015). Studies from various African countries indicate that the age of sexual intercourse initiation has decreased over the years, with increasing number of adolescents engaging in sexual activity before the age of 16 years (Okonofua, 2000; Okpani & Okpani, 2000; Sumolu, Dipeolu & Babalola, 2002;). The reasons advanced for this as further emphasized by the researchers include high rate of poverty, sexual liberty, decline in traditional norms/values, poor parental control and guidance, mass media, urbanization and tourism. An early inception of sexual activity not only increases the likelihood of having numerous sexual partners, it also increases the chances of contracting sexually transmitted infections.

The risk is higher for female adolescents as their cervical anatomic development is incomplete and especially vulnerable to infections by certain sexually transmitted pathogens. For example, the bacteria causing gonorrhea and chlamydia prefer the specialized columnar epithelial cells lining of the female cervix. These cells are more exposed in young women, this explains why adolescent girls are at particular risk for these STIs (WHO, 2006). In a large surveillance study performed in Germany, the highest prevalence of chlamydia was found among 15–19years old females, with prevalence significantly decreased after 25 years of age. Prevalence among females appears to be up to three or four times greater than that of males. This may be due to anatomical factors, as the cervix of adolescent females is not sufficiently developed and is therefore particularly susceptible to STIs (Wilson et al, 2002).

Women contract gonorrhea 50% of the time they engage in sexual relations with an infected male although men only contract infections 20% of the time they have sexual relations with infected females (Winstock, Berman & Cates, 2004).

Majority of the STIs occur in developing countries and some of the key prevention and treatment strategies including large scale screening face significant barriers (Mayaud & Mabey, 2004). Primary prevention which includes sexual abstinence, mutual monogamy and correct use of condom may be quite effective in the reduction of STIs especially among adolescents (Mayaud and Mabey, 2004). Several studies have indicated that adolescents engage in sexual relations as a result of peer pressure, desire to maintain relationship, for pleasure and to express maturity (Temin, Okonofua, Omorodion, Renne, Coplan, Heggenhougen, et.al, 1999; Amuyunzu-Nyamongo, Biddlecom, Quedraogo, Woog, 2005; Owolabi, Onayade, Ogunlola, Ogunniyi, Kuti, 2005). The decision to practice sexual abstinence is shaped by a number of inter-linking forces that include individual, family and community influences. Such influences may include what youths discuss and consider to be reality among themselves and such reality may differ for other groups. Definitions of being abstinent may differ between rural and urban adolescents. Other factors that determine the understanding of abstinence include gender, age, ethnicity and sexual experience (Bersamin, Fisher, Walker, Hill & Grube, 2007).

Condom when used correctly and consistently is also one of the most effective methods of HIV and STIs protection (NIH, 2001). However despite the efforts of some agencies only a considerable number of the sexually active population use condom and some irregularly and with selected partners. Barriers to consistent condom use include high price, low availability and inadequate marketing. Women may also be forced into unprotected sexual intercourse as a result of unequal power relations between sexes.

Knowledge is an important preventive factor for STIs. It has been suggested that knowledge about STIs transmission might influence sexual behaviour. STIs knowledge excluding HIV/AIDS is generally low among adolescents especially in developing countries (Anwar, Sulaiman, Ahmadi & Khan, 2010; Amu & Adegun, 2015). Despite early initiation of sexual activity, many adolescents especially in rural societies are poorly informed and lack access to adequate preventive information/services thus increasing their vulnerability to STIs (Dehne & Riedner, 2005; Kassie, Gudayu & Araya, 2020) Barriers to STIs preventive effort among adolescents include access to factual information, difficulty in accessing preventive services due to financial constraint and non-availability of youth friendly centres (Tilson, Sanchez, Ford, et.al, 2004). A study carried out in Thailand indicated low condom use among students which was attributed to their level of knowledge about STIs (Thatto, Charron-Prochownik, Dorn, Albrecht & Stone, 2003). Biological and social differences put males and females at different levels of contracting STIs, hence

preventive efforts should adopt different approaches to meet their needs.

It has been revealed that Nigerian secondary school students are becoming more sexually active at much earlier age than in time past (Fawole, Asuzu, Odutan & Brieger, 1999). Many studies have reported high prevalence of STI/HIV among adolescents as a result of their reckless sexual exposures (Amazigo, Silva, Kaufman & Obikeze, 1997; Olakpo & Brieger 2000; Fatai, 2005). Students in Edo state form part of the larger population of students in Nigeria and are perceived to share similar characteristics. A study on student's preventive practices for STIs in Edo State will provide information on the number of adolescents likely to be at risk of contracting STIs. Furthermore, most of the studies conducted in this area did not explore the difference in preventive practices between the variables of interest (sex and location) in this study. It is this gap that was therefore covered in this paper.

Materials and Method

The descriptive survey design was used to assess the preventive practices for sexually transmitted infections among secondary school students in Edo state. Study population consists of all Senior Secondary School students attending Public Schools in Edo State. The total population of students in the 18 Local Government Areas of Edo State as at 2018/19 session was 92,063. A sample size of seven hundred and sixty-three (763) respondents was used for this study. The multi-stage sampling technique comprising cluster, purposive, proportional and simple 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). In the second stage, 3 LGAs were selected from each of the senatorial districts using purposive random sampling technique. In this case two LGAs from the extremes and one at the middle were picked in each of the senatorial districts. 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 sampling technique was applied to select 10% of the students from the 27 schools purposively selected. This was based on the assertions of Owie (2006), that for a population of over 10,000 respondents, 10% is adequate.
A pre-tested questionnaire designed by the researcher was used to elicit information on the demographic information of the respondents as well as their preventive

practices for STIs. Ten questions with dichotomous and three response options were used to assess preventive practices of the respondents. For two option response questions, "Yes" was scored ten points while "No" was scored zero. For three option items, "Always" was scored ten points, "Sometimes" was scored five points and "Never" or "I don't know'' was scored zero. The range of scores obtainable was between 0-100, with one hundred as the highest score and zero as the lowest. Dichotomous response of Yes or no was used to elicit information on factors influencing the practice of measures for STIs.

The research instrument was administered personally by the researcher and two trained personnel who served as 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. The collected data were coded and analyzed using descriptive statistics of frequency counts, percentages, bar charts and histograms while t-test statistics was used to test hypotheses at 0.05 level of significance.

Results

Table 1: Preventive Practices for STIs by Secondary School Students in Edo State

S/N	Preventive Practices	Frequency	%
1	Abstinence	457	60.0
2	Faithful to one partner	79	10.4
3	Use of condom	73	9.6
4	Regular checkup	38	5.0
5	Use of local herbs	24	3.1
6	Use of antibiotics	22	2.8
7	Genital cream	21	2.7
8	Douching	18	2.4
9	Oral contraceptive	18	2.4
10	Vaccination	13	1.7

Data in table 1 reveals STI preventive practices of students. The major source of STI prevention for students was abstinence (60.0%). Other measures were, being faithful to one partner (10.4%), use of condom (9.6%), regular checkup (5.0%), use of local herbs (3,1%), antibiotics (2.8%), douching (2.4%) and vaccination (1.7%).

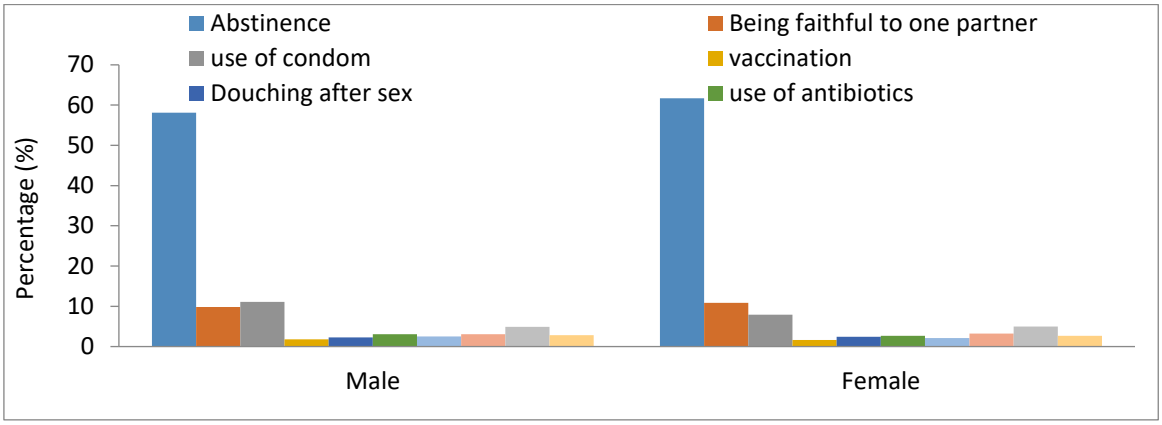

Fig. 1: Sex distribution of preventive practices

Figure 1 is a histogram showing sex distribution of STI preventive practices among secondary school students in Edo State. There was no distinctive difference in almost all the STI preventive practices among male and female respondents. However it was observed that more males (11.1%) than females (7.9%) practiced condom use.

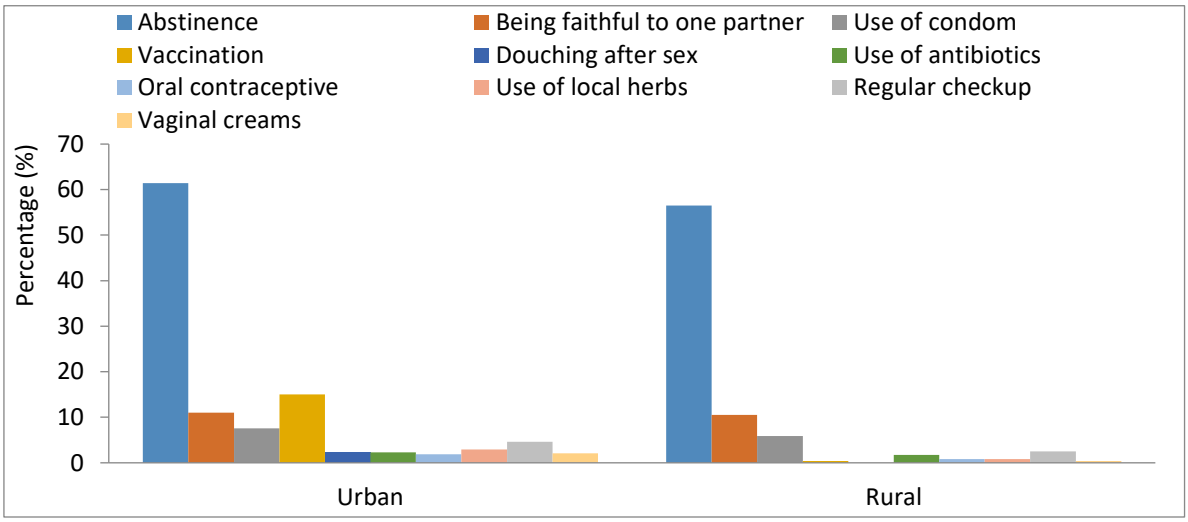

Fig. 2: location distribution of preventive practices

Figure 2 gives a description of the STI preventive practices among secondary school students in Edo State. The histogram shows no major differences between urban and rural students in their STIs preventive practices. However, the number of students who practiced abstinence as a preventive measure for STIs was slightly higher among those in urban (61.4%) than rural (56.5%) schools.

Table 2: Perceived factors influencing abstinence

S/N	Perceived Factors	Frequency	%
1	Having sex is a sign of maturity	118	50.6
2	Fear of embarrassment by friends	106	45.5
3	Fear of losing partner	124	53.2
4	Abstinence no longer valued in the society	205	88.0
5	Sex as only way of expressing love to partner	95	40.8
6	Identifying with friends	181	77.6

Table 2 presents factors influencing the practice of abstinence among students in Edo State. The data presented reveals that loss of societal value for abstinence (88.0%) and identifying with friends (77.6%) were the most significant factors influencing the practice of abstinence as a preventive measure for STIs. Fear of losing partner (53.2%) and having sex been seen as a sign of maturity (50.6%) were also quite significant. Embarrassment from friends (45.5%) and sex being a means of expressing love for partner (40.8%) did not have much influence.

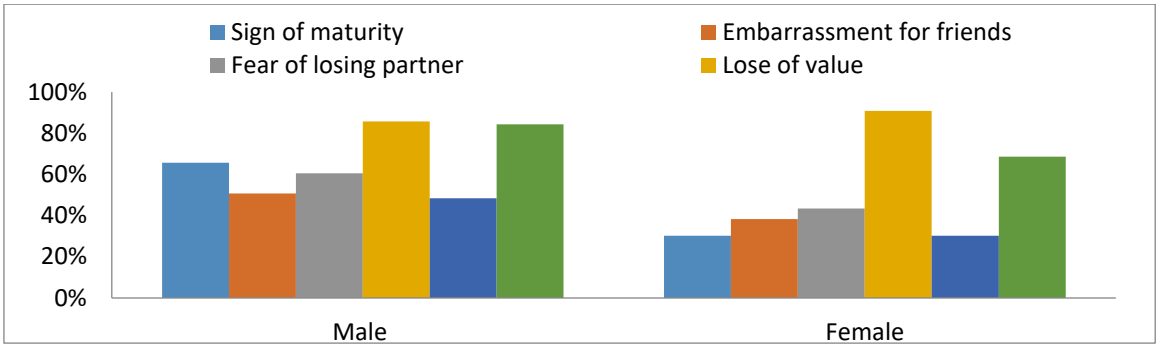

Fig. 3: Perceived factors influencing abstinence as a preventive measure for STIs by Sex.

Figure 3 is histogram describing the perceived factors influencing abstinence as a preventive measure for STIs among secondary school students in Edo State based on sex. The figure clearly shows the factors mentioned were more significant for male respondents than their female counterparts. Engaging in sexually activity was seen as a sign of maturity for more male (65.7%) respondents than female (30.3%). Other factors such as embarrassment from friends, fear of losing partner, sex as a way of expressing love to partner and having a sense of belonging among peers were also higher for male (50.7%, 60.5%, 48.5% and 84.3%) than female (38.4%, 43.4%, 30.3% and 68.7%) respondents respectively.

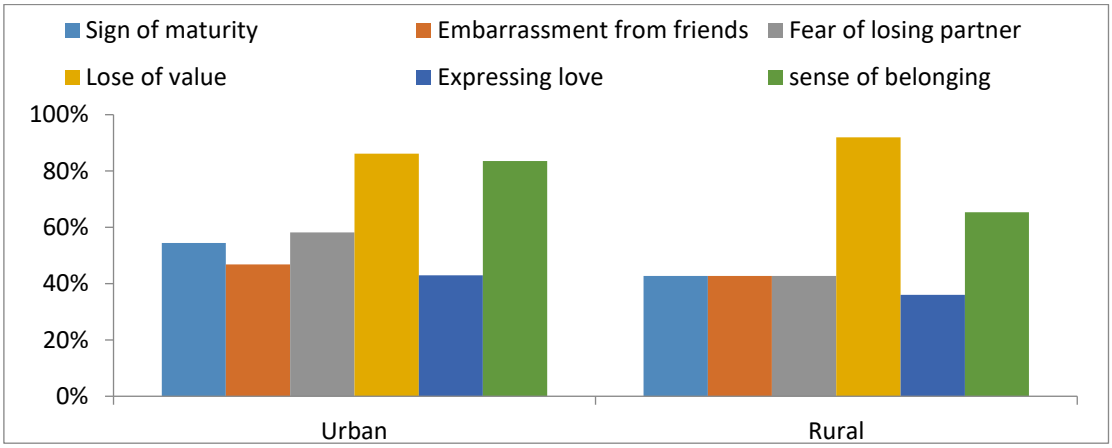

Fig. 4: Perceived factors influencing abstinence as a preventive measure for STIs by location.

Figure 4 is a histogram showing location distribution of the factors influencing abstinence as a preventive practice for STIs. The figure shows that all factors mentioned except loss of value for abstinence in the society were more significant for urban than rural students.

Table 3: Perceived factors influencing condom use

S/N	Perceived Factors	Frequency	%
1	Condom reduce sexual pleasure	150	64.4
2	Loss of trust	155	66.5
3	Expensive	202	86.7
4	Embarrassing to buy from shop	129	55.3
5	Partner does not like it	156	67.0
6	Lack of confidence to negotiate condom use	115	49.4
7	Fear of losing partner	94	40.3

Table 3 presents the factors influencing condom use as a preventive practice for STIs. The data presented indicates that financial constraint (86.7%), was the most significant factor influencing condom use among students. Other factors such as partner not liking condom (67.0%), partner feeling untrusted (66.5%), reduction of sexual pleasure (64.4%) and feeling ashamed to purchase condom (55.3%) had some level of influence. However, lack of confidence to negotiate condom use (49.4%) and fear of losing partner (40.3%) did not have much influence on the use of condom as a preventive measure for STIs among students.

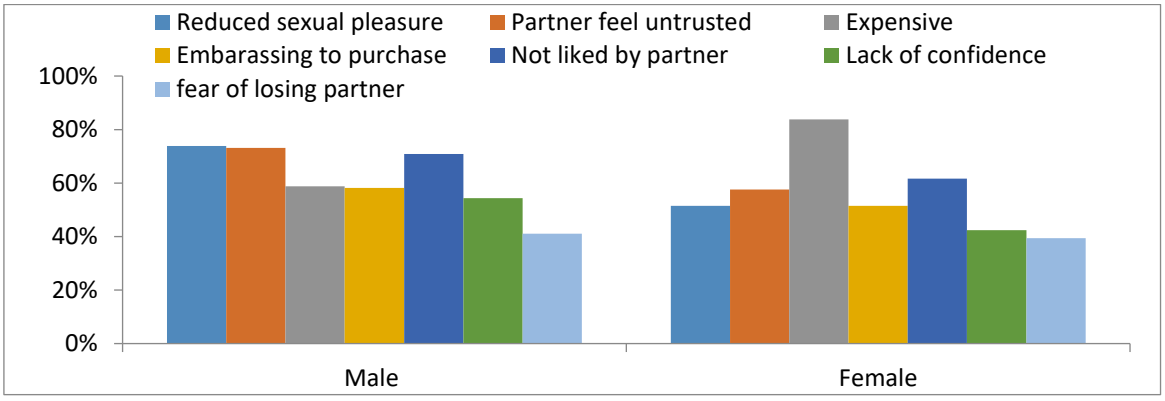

Fig. 5: Sex distribution of perceived factors influencing condom use as a preventive measure for STIs

The histogram on figure 5 gives a distribution of perceived factors influencing condom use as a preventive measure for STIs based on sex. Most of the factors mentioned such as reduced sexual pleasure, partner feeling untrusted and condom not liked by partner, were more significant for males (73.9%, 73.1% and 70.9%) than females (51.1%, 57.6%, and 61.7%) respectively.

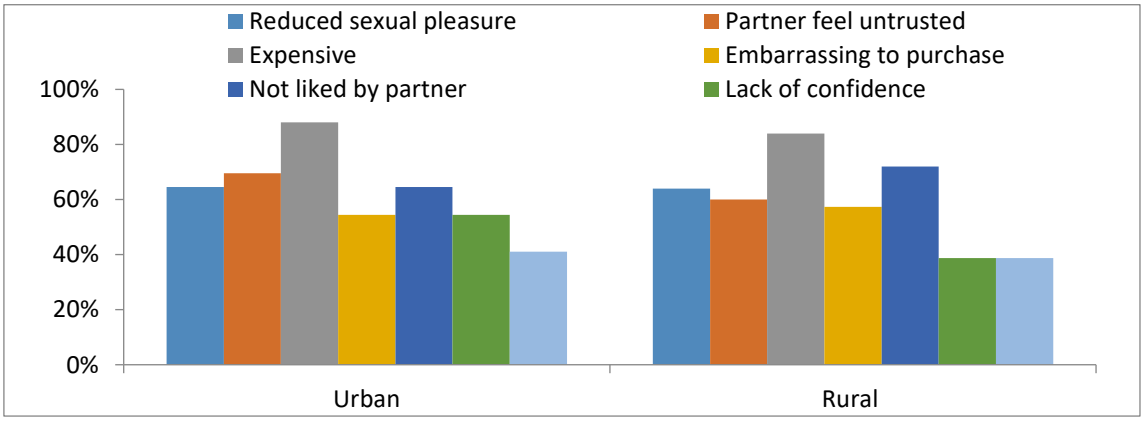

Fig. 6: Location distribution of perceived factors influencing condom as a preventive measure for STIs

The histogram on figure 6 gives a description of the factors influencing condom as a preventive measure of STIs based on location. The figure indicates that more urban students (69.6%) than rural (60.0%) would not use condom because it will make their partner feel untrusted. It also showed that more of the urban students (54.4%) than rural (38.7%) would not use condom because they lacked the confidence to suggest it.

Table 4: Difference in preventive practices between male and female students

Sex	N	Mean	Std. Deviation	Df	t-value	P-value
Male	134	39.254	20.707			
				231	2.601	0.010
Female	99	32.273	19.617			

$\alpha = 0.05$

Table 4 presents t-test for difference in STI preventive practices between male and female secondary school students in Edo State. The data shows that t-value of 2.601 at degree of freedom 231 testing at alpha level of 0.05, is significant at p-value of 0.010. This means that the null hypothesis which states that there is no significant difference in STI preventive practices between male and female students in Edo State is rejected. It therefore implies that gender has influence on STI preventive practices among secondary school students in Edo State.

Table 12: Difference in STI preventive practices between students in urban and rural schools

Location	N	Mean	Std. Deviation	Df	t-value	P-value
Urban	158	36.772	20.558			
				231	0.523	0.602
Rural	75	35.267	20.482			

$\alpha = 0.05$

Table 12 presents t-test for difference in STI preventive practices between students in urban and rural secondary schools in Edo State. The result shows a t-value of 0.523 and p-value of 0.602. Testing at alpha level of 0.05, the null hypothesis is retained since p-value is greater than alpha level of 0.05. it therefore indicates that there is no significant difference in STI preventive practices between urban and rural secondary school students in Edo state.

Discussion

The findings of the study revealed that more than half of the respondents (60%), practiced abstinence as a measure for STI prevention. This was also the same with the findings of Nwabueze et.al (2014) in similar study conducted in Anambra state which also indicated high level of abstinence (74.2%) among respondents. There were however slight differences in terms of gender and location as there were more abstainers among female and urban respondents. Furthermore, the findings did not quite agree with the report from surveys conducted by the Federal Ministry of Health, Nigeria in 2005 which indicated that the practice of abstinence as a preventive measure for STIs among adolescents aged 15-24years as being quite low, 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 and also the fear of getting pregnant could be a possible explanation for having more females abstaining.

Other preventive measures as seen from the study includes, being faithful to one partner (10.4%), use of condom (9.6%) and regular check-up (5.0%), were not quite encouraging. Further analysis showed that among the 233 representing about one third of the participants in the study who were sexually active, only 32.7% were actually using condom as a preventive measure for STIs. This was in contrast with the study done by Nwabueze et.al (2014), which indicated a higher percentage of condom use (48.8%) among respondents. The findings of this study corroborates the assertions of Dehne and Riedner (2005), which emphasized that while factual information regarding barrier is an important component of STI reduction strategies, it has not met the desired objective of diminishing the global STI pandemic especially among adolescent population. They further explained that exposure to condom education and increased awareness of risk does not result to safer sex choices when adolescents are aroused. They maintained that, only minority of people engaging in risky sexual behaviour use condom consistently. The study further indicated that there was more utilization of condom among male than female and also among urban than rural respondents. The reason for this could be that males found it easier to suggest condom use than females while condoms may be more accessible to urban respondents than rural.

In general, there was a significant difference between males and females in their preventive practices as indicated on table 4 which shows a p-value of 0.01 lower than the alpha level of 0.05. This indicates a rejection of hypothesis which states that there is no significant difference between males and females in their preventive practices for STIs. 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 5 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.

The responses on table 2 indicate that the major factors influencing abstinence are, abstinence not being valued in the society (88.0%) and the need to identify with friends (77.6%). Other notable factors were fear of losing partner (53.2%) and having sex being seen as sign of maturity (50.6%). 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. This is also indicated from the results of this study as about 77.6% of the respondents would not abstain because of the desire to identify with their peers.

The findings of the study further show that the major factor hindering condom use among students was because it is too expensive for them (86.7%). Other factors were, partner not liking it (67.0%), leads to loss of trust (66.5%), reduce sexual pleasures (64.4%) and quite embarrassing to buy from the shop (55.3%). All these as indicated by the Health Belief Model are barriers to taking action even when knowledge is present and the benefits of taking the right precaution are known. This finding agrees with that of other researchers who also reported similar factors as mentioned by respondents to be barriers to condom use as a measure to prevent STIs (Azuike et.al, 2015; Brabin, 1999; Araoye & Fayeke, 1998).

Conclusion

This study assessed the preventive practices for Sexually Transmitted Infections (STIs) among secondary school students in Edo State. Abstinence was the main preventive practice for STIs adopted by majority of the students while only very few sexually active students practiced condom use. The major factors influencing abstinence and use of condom as preventive measures for STIs are declining societal values and financial constraint respectively. There is no difference in STIs preventive practices between urban and rural students but difference exist between male and female secondary school students in Edo State. Mean values of below 40 both for gender and location is an indication that preventive practices for STIs among secondary school students in Edo State is quite low.

Adolescent reproductive health issues have been indeed a topical issue in the last two decades. Several efforts have been put in place to curb the unacceptable prevalence of HIV/AIDS and other STIs among youths. It is however necessary to ensure that the various programmes put in place by both governmental and non-governmental organizations, be constantly monitored and evaluated if any meaningful success will be achieved.

Recommendations

Based on the findings, the following recommendations were made:

1. Efforts should be intensified to increase reproductive health knowledge including STIs through more holistic approach among adolescents. Topics emphasizing reproductive health consequences of premarital sex should be adequately and extensively discussed.
2. 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.

3. There should be collaboration with the school, home and society. All adults who are in close contact with adolescents should serve as good role models and help encourage these adolescents to take the right decisions as regards their sexual and reproductive health.
4. 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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