

Condom Use among Undergraduates in Osun State, Nigeria: Implication for Sexually Transmitted Infections (STIs)/HIV Prevention

¹Esther O. Asekun-Olarinmoye and ²Edward A. Oladele

¹Department of Community Medicine, Faculty of Clinical Sciences,
College of Health Sciences, Ladoke Akintola University of Technology (LAUTECH),
P.M.B. 4400, Osogbo, Osun State, Nigeria

²Department of Community Medicine, Ladoke Akintola University of Technology (LAUTECH),
Teaching Hospital, P.M.B. 5000, Osogbo, Osun State, Nigeria

Abstract: In a descriptive cross-sectional survey, the knowledge, attitudes and practice of condom use among undergraduates in Osun State, Nigeria was assessed with a view towards highlighting areas needing closer attention both in interventional strategies and policy formulation. A high level of awareness of condoms exists alongside a high ever-used rate. Disposition to condom use was largely positive but did not translate to significant consistent use. STI prevention and protection against unwanted pregnancy were the most adduced reasons for a positive disposition. The most frequent reason given for using the condom at sexual intercourse is as a means of preventing HIV/AIDS and other STIs. Males were more likely to use condoms at sexual intercourse, while use could not be guaranteed by females if their partners did not wish to use the condom. A low prevalence of history of STI was found. Mass media was the most quoted source of information on condoms therefore, it is important not only to sustain current efforts but also to ensure comprehensiveness of awareness messages passed through the medium. Issues bordering on gender roles in reproductive health matters, such as the ability of females to negotiate for condom use by sexual partner, need thorough appraisal and policies that will empower females to take firm stands in reproductive health issues that involve them and that will engender female equality should be put in place.

Key words: Knowledge, attitude, practice, condom use, STI/HIV prevention, undergraduates

INTRODUCTION

This study was designed to assess the knowledge, attitudes and practices of condom use among undergraduates in the Federal Polytechnic, Ede, Osun State, Nigeria with a view towards highlighting areas needing closer attention both in interventional strategies and policy formulation. The prevalence of sexually transmitted infections has been on the increase for quite a while (FMOHN, 1999; Ofuso-Barko, 2000). In 1999, there were an estimated 340 million new cases of sexually transmitted infections globally of these; 69 million new cases were from sub-Saharan Africa (WHO, 2001). In 2006, there were an estimated 4.8 million new HIV infections globally (UNAIDS, 2006a). The sub-Saharan region of Africa alone accounted for 3.2 million (66.7%) of these cases (UNAIDS, 2006b).

The true prevalence of STIs in Nigeria may not be known due to secrecy of sex, incomplete disease reporting and notification but the country is expected to

follow global trends. However, prevalence of HIV infection alone in adults has been put at 5.0% (FMOHN, 2004).

In reproductive health matters such as reproductive tract infections (including STI and HIV/AIDS), unwanted pregnancy and unsafe abortion, adolescent reproductive and sexual health, contraception and gender equality, young persons ages 10-24 years constitute a high-risk group due to their peculiar physiological and psychological characteristics. The age group 15-24 years has been shown to be the most infected with STIs (Ofuso-Barko, 2000) and >50% of the 19 million new STI cases each year in the USA occur in youth ages 15-24 years (Weinstock *et al.*, 2004). Unwanted pregnancies and STIs among youths continue to be public health problems of concern in both developed and developing countries, such as America, Brazil, Mexico, Jamaica and Nigeria (Teen Health, 2007; Robinson and De Roberts, 1991; Singh and Wulf, 1994; Makinwa-Adebusoye, 1992; Cherannes, 1993). Globally

each year, about 340 million new cases of four major curable STIs-gonorrhea, chlamydia, syphilis and trichomoniasis are reported (WHO, 2000). One third of these cases are in persons <25 years of age (Butler, 2003). Young persons account for more than half of all new HIV infections every year (UNAIDS, 2006a, b). These figures point to the fact that there is still a lot to be done in the control of STIs in this group. Despite awareness campaigns about prevention of STIs including abstinence-only programs, many youths change partners often and have engaged in unprotected sex for various reasons (Dryfoos, 1990; Igra and Irwin, 1996; Black *et al.*, 2007). Age at first marriage is increasing due to increased engagement of youths in educational pursuits. This may increase the likelihood of premarital sex (Singh, 1998), which may be unprotected leading to unplanned consequences. Traditional norms in most Nigerian cultures which demand premarital abstinence have almost disappeared (Orubuloye *et al.*, 1991) and this is most evident among undergraduates in higher educational institutions where the lifestyle tends to follow Western ones. With a lower age limit (16-17 years) for admission into Universities in Nigeria and duration of most academic courses ranging from 2-6 years, most undergraduates are <25 years old (between ages 17-24 years) (Adewole and Lawoyin, 2004). Many are living away from home and parental control for the first time and often fall victim of influences/pressures, which encourage casual sexual relationships (Arowojolu *et al.*, 2002). This peculiarity of undergraduates has been explored by various Nigerian studies, which report an increased level of risky sexual behavior including unprotected sex among undergraduates (Orubuloye *et al.*, 1991; Okonofua, 1995; Feyisetan and Pebley, 1989).

A cardinal strategy in the prevention of STI/HIV is the promotion of the use of condoms during sexual intercourse in those who find abstinence difficult. The correct and consistent use of condoms has been proven to be effective in preventing most STIs including HIV (Gardner *et al.*, 1999). Barriers may however, exist to condom use. These barriers include religious beliefs (WHO, 2000), social and cultural norms, which often discourage people from using condoms even when at risk of contracting an STI (Gardner *et al.*, 1999; Sunmola, 2001). Poor risk perception, association of condoms with uncleanness, illicit sex, infidelity and immoral behavior are also contributory factors (Sunmola, 2001). Appropriate knowledge itself has not been consistently found to increase condom use even among undergraduates (Orubuloye *et al.*, 1991; Arowojolu *et al.*, 2002; Sunmola *et al.*, 2002).

Undergraduates are a pivotal group for the growth of the nation. They consist mostly of late adolescents and

youths attending tertiary education institutions such as Polytechnics/Colleges and Universities. Their training is to equip them to take up roles as the skilled workforce of the country as well as to be the intellectual drivers of development. As with other groups of young persons, the consequences of STIs and HIV infection are grave, both for the individuals as well as the society at large. This is because treatment and rehabilitation programs of STIs and HIV infection require commitment of funds that may otherwise be directed at other national development programs especially, in the developing countries, there is reduced quality of life for survivors, reduced reproductive capabilities and a decline in national productivity. In view of the high rates of risky sexual practices among undergraduates, the attendant grave consequences, the effectiveness of condoms in preventing STIs and its consequences and the relatively simple application of this prevention strategy, it is important to study the determinants and actual practice of condom use among undergraduates.

MATERIALS AND METHODS

Study area: The Polytechnic, Ede is an institution owned by the Federal Government of Nigeria and as such has the whole country as its catchment's area with different states of the nation represented in the student population. The campus in addition to other facilities has a Health Center and student hostels but a number of students also reside in off-campus hostels and rented apartments in Ede town, which is a semi-urban area. The total population of undergraduates in the school as at April 2007 was 13, 057 with 7209 (55.3%) and 5848 (44.7%) being females and males, respectively. These students were in various stages of study National Diploma (ND) years 1 and 2, Higher National Diploma (HND) years 1 and 2.

Study design: The study was a descriptive cross-sectional survey carried out among undergraduate students at the Federal Polytechnic, Ede, Osun state, Nigeria.

Sample size calculation: The sample size calculation assumed that 70% of the students knew about condom use and anticipated a 20% non-response rate. The confidence interval was set at 95%, normal deviation $Z = 1.96$ and $d = 0.05$. A sample size of 403 was arrived at using the $n = Z^2 pq/d^2$ expression.

Sampling technique: The sample respondents were selected using proportionate stratified random sampling method to ensure gender balance and adequate representation of each level/year of study. Stratification was along level/year of study.

Instrument: A structured questionnaire was developed in English for the purpose of data collection. This instrument was refined after pre-testing the initial tool at another tertiary institution with similar characteristics. The questionnaire contained 33 questions in five sections covering the socio-demographic characteristics of respondents, knowledge/awareness of condoms, attitudes to condom use, practice of condom use and history of STI. Informed consent was obtained both from the school authority and the respondents. Four hundred and fifty questionnaires in all were distributed and were self-administered. Trained research assistants distributed the questionnaires to consenting undergraduates. Questionnaires were handed over to respondents after lecture periods with the understanding that it will be filled immediately and handed back to the research assistants. Four hundred and nine questionnaires were returned completely filled and useful for data analysis.

Data analysis: The data gathered were manually edited before entry into the computer using the SPSS (Statistical Package for Social Sciences) version 11 software. Analysis was carried out with the generation of frequency tables and evidence of association between categorical variables in cross tabulations was assessed using the chi-square (χ^2) statistics.

Ethical consideration: The ethics and research committee of the Department of Community Medicine of LAUTECH approved the research protocol and study instrument. Verbal informed consent was obtained from each respondent prior to data collection.

RESULTS

Four hundred and fifty questionnaires were distributed and 409 were collected back, giving a 90.9% response rate.

Socio-demographic characteristics: There were more females in the total polytechnic population and this was reflected in the sample; 56.5% of respondents were females, while 43.5% were males. Majority of respondents (80.2%) were below age 25 and only 1.2% were above 29 years. The age group 20-24 and 25-29 years made up 66.5 and 18.6% of the respondents, respectively. With regards to level of study, 128 (31.3%), 109 (26.5%), 91 (22.2%) and 81 (19.9%) respondents were in ND I, ND II, HND I and HND II, respectively (Table 1).

Knowledge/awareness: Majority of the respondents (94.6%) knew about condom (Fig. 1), most (58.4%) knew

Table 1: Distribution of respondents according to socio-demographic characteristics (n = 409)

Characteristics	Frequency (%)
Gender	
Male	178 (43.5)
Female	231 (56.5)
Age-group	
15-19	56 (13.7)
20-24	272 (66.5)
25-29	76 (18.6)
>29	5 (1.2)
Marital status	
Single	392 (95.8)
Married	17 (4.2)
Level/year of study	
ND I	128 (31.3)
ND II	109 (26.5)
HND I	91 (22.2)
HNDII	81 (19.9)

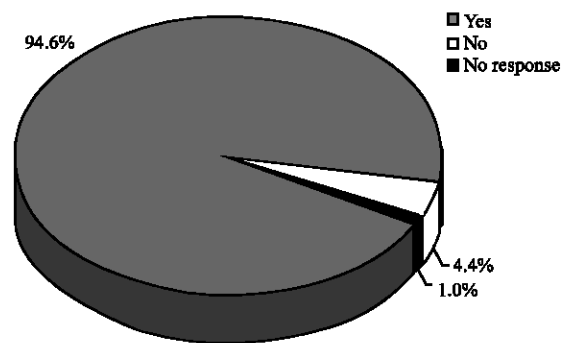


Fig. 1: Distribution of respondents according to their awareness of condoms

only the male condom, 2.2% thought that only female condoms existed, while both types of condom were known by 34.0% of the respondents (Fig. 2). The source of knowledge in majority (69.9%) of the respondents was the electronic media including sources like the radio, television, etc. The least quoted source (7.3%) was the partner of respondents. Peers and the print media were quoted as the source of knowledge by 18.3 and 19.1% of respondents, respectively (Fig. 3).

Attitude: Table 2 shows, distribution of respondents according to attitude towards condom use and reasons for support or non-support of condom use. A positive attitude to condom use was found in 343 (83.9%) of the respondents, while 66 (16.1%) did not support condom use. Of the 343 respondents who were in support of condom use, 292 (85.1%) gave reasons for their support of condom use, while 51 (14.9%) did not respond. Reasons given included prevention of STIs and protection against unwanted pregnancy by 242 (70.6%) and 50 (14.6%), respectively. Respondents with negative attitude to condom use gave reasons as follows;

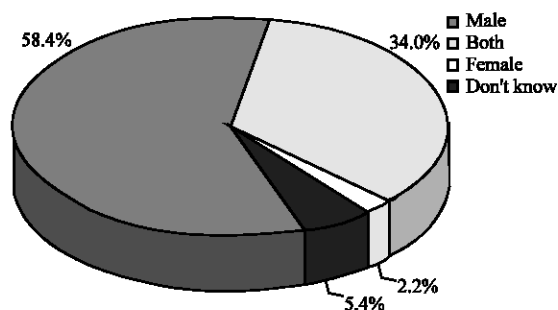


Fig. 2: Distribution of respondents according to type of condoms known

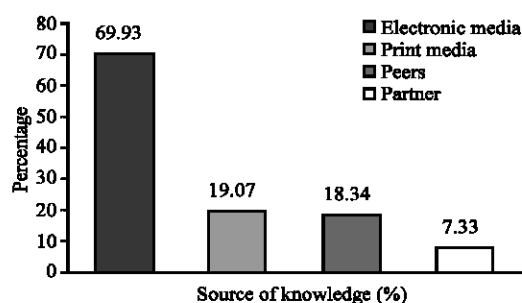


Fig. 3: Distribution of respondents according to source of respondents' knowledge of condoms

religious/cultural beliefs (93.9%), partner's wish (80.3%), promotes promiscuity/infidelity (50.0%), not sure of effectiveness (30.3%) and reduction of sexual enjoyment (15.2%), respectively.

Practice: Table 3 shows, a gender-based distribution of respondents according to sexual behavior, attitude to and use of condom. Three hundred and seven respondents (149 males and 158 females) admitted to having ever had sex. Of these, 244 (79.5%) use condoms during sexual intercourse. A statistically significant greater proportion of male than female respondents ever-had sex ($\chi^2 = 12.59$; $p = 0.000$), support condom use ($\chi^2 = 4.38$; $p = 0.036$) and practice use of condoms ($\chi^2 = 8.94$; $p = 0.003$), respectively.

The frequency of condom use varied with 138 (56.6%) using it every time and 106 (43.4%) using it inconsistently. When, female respondents who had sex were asked if they demanded condom use by their partners, 115 (72.8%) responded in the affirmative and 43 (27.2%) otherwise. The frequency of demand was every time by 58 (50.4%), often by 8 (7.0%) and sometime by 49 (42.6%) respondents (Table 4).

Of the 244 respondents that are sexually active and are using condoms, 199 (81.6%) respondents gave reasons for their use of condoms, while 45 (18.4%) did not

Table 2: Distribution of respondents according to attitude towards condom use

Variables	Frequency (%)
Disposition towards condom use (n = 409)	
Support condom use	343 (83.9)
Against condom use	66 (16.1)
Reasons for support (n = 343)	
Prevention of HIV/AIDS and other STIs	242 (70.6)
Protection against unwanted pregnancy	50 (14.6)
No response	51 (14.8)
Reasons for non-support* (n = 66)	
Religious/cultural beliefs	62 (93.9)
Partner's wish	53 (80.3)
Promotes promiscuity/infidelity	33 (50.0)
Not sure of effectiveness	20 (30.3)
Reduces sexual enjoyment	10 (15.2)

*Multiple responses

Table 3: Gender-based distribution of respondents according to sexual behavior, attitude to and use of condom

Variables	Male freq. (%)	Female freq. (%)	Total freq. (%)	χ^2	p-value
Ever-had sexual intercourse					
Yes	149 (83.7)	158 (68.4)	307 (75.1)	12.59	0.000
No	29 (16.3)	73 (31.6)	102 (24.9)	-	-
Total	178 (100.0)	231 (100.0)	409 (100.0)	-	-
Support condom use					
Yes	157 (88.2)	186 (80.5)	343 (83.9)	4.38	0.036
No	21 (11.8)	45 (19.5)	66 (16.1)	-	-
Total	178 (100.0)	231 (100.0)	409 (100.0)	-	-
Use of condom					
Yes	129 (86.6)	115 (72.8)	244 (79.5)	8.94	0.003
No	20 (13.4)	43 (27.2)	63 (20.5)	-	-
Total	149 (100.0)	158 (100.0)	307 (100.0)	-	-

Table 4: Pattern of condom use amongst ever had sex respondents, who use condoms during sexual intercourse

Variables	Frequency (%)
Frequency of condom use at intercourse (n = 244)	
Every time	138 (56.6)
Sometime	106 (43.4)
Females who demand condom usage from their partners (n = 158)	
Yes	115 (72.8)
No	43 (27.2)
Frequency of females demanding condom use by partners (n = 115)	
Every time	58 (50.4)
Often	8 (7.0)
Sometime	49 (42.6)

respond. The reasons for using condoms were that it offers protection against STI/HIV/AIDS by 138 (69.3%) and protection against pregnancy by 61 (30.7%) respondents, respectively. Those who did not use condom (n = 63) cited various reasons including cultural inappropriateness (98.4%), partner's wish (84.1%), concerns about effectiveness (31.7%) and reduction of sexual pleasure (15.9%). Association between level/year of study and sexual behaviour, attitude towards and use of condoms is shown in Table 5. Level of study was statistically significantly associated with support for condom use ($\chi^2 = 9.724$; $p = 0.021$), while it was not statistically significantly associated with either sexual behaviour ($\chi^2 = 3.504$; $p = 0.320$) or use of condoms

Table 5: Association between level/year of study and sexual behaviour/condom use

Table 5: Association between level/year of study and sexual behaviour/condom use							
	Level/year of study freq. (%)						
Sexual behaviour	ND I	ND II	HND I	HND II	Total	χ^2	p-value
Ever had sexual intercourse							
Yes	97 (75.8)	81 (74.3)	63 (69.2)	66 (81.5)	307 (75.1)	3.504	0.320
No	31 (24.2)	28 (25.7)	28 (30.8)	15 (18.5)	102 (24.9)	-	-
Total	128 (100.0)	109 (100.0)	91 (100.0)	81 (100.0)	409 (100.0)	-	-
Support condom use							
Yes	116 (90.6)	88 (80.7)	78 (85.7)	61 (75.3)	343 (83.9)	9.724	0.021
No	12 (9.4)	21 (19.3)	13 (14.3)	20 (24.7)	66 (16.1)	-	-
Total	128 (100.0)	109 (100.0)	91 (100.0)	81 (100.0)	409 (100.0)	-	-
Use of condoms							
Yes	80 (82.5)	65 (80.2)	48 (76.2)	51 (77.3)	244 (79.5)	1.178	0.758
No	17 (17.5)	16 (19.8)	15 (23.8)	15 (22.7)	63 (20.5)	-	-
Total	97 (100.0)	81 (100.0)	63 (100.0)	66 (100.0)	307 (100.0)	-	-

Table 6: Age-group distribution of respondents according to attitude to and use of condom

Age-group (in years)	Support condom use freq. (%)			χ^2	p-value
	Yes	No	Total		
15-19	48 (85.7)	8 (14.3)	56 (100.0)	7.17	0.03
20-24	235 (86.4)	37 (13.6)	272 (100.0)	-	-
>24	60 (74.1)	21 (25.9)	81 (100.0)	-	-
Total	343 (83.9)	66 (16.1)	409 (100.0)	-	-
Use of condoms during sexual intercourse					
15-19	31 (79.5)	8 (20.5)	39 (100.0)	6.36	0.04
20-24	170 (82.9)	35 (17.1)	205 (100.0)	-	-
>24	43 (68.3)	20 (31.7)	63 (100.0)	-	-
Total	244 (79.5)	63 (20.5)	307 (100.0)	-	-

Table 7: Distribution of respondents who ever had sex by number of sexual partners and practice of condom use

No. of partners	Condom use			χ^2	p-value
	Used (%)	Did not use (%)	Total (%)		
Single	146 (76.0)	46 (24.0)	192 (100)	-	-
Multiple	98 (85.2)	17 (14.8)	115 (100)	3.71	0.05
Total	244 (79.5)	63 (20.5)	307 (100)	-	-

($\chi^2 = 1.178$; $p = 0.758$). Table 6 shows age-group distribution of respondents according to attitude towards and use of condoms. Age-group was found to be statistically significantly related to both support for condom use ($\chi^2 = 7.17$; $p = 0.03$) and actual practice of use of condoms during sexual intercourse ($\chi^2 = 6.36$; $p = 0.04$).

Among the sexually active respondents, 192 (62.5%) had single sexual partner, while 115 (37.5%) had multiple sexual partners. The number of sexual partners was found to be statistically significantly related to condom use ($p = 0.05$; Table 7).

History of STI: The proportion of respondents that had ever experienced symptoms associated with STIs was 15.9% (65). These symptoms ranged from burning sensation during urination 65 (100.0%), genital itching 60 (92.3%), abnormal discharge 57 (87.7%) to genital sore 37 (56.9%).

DISCUSSION

The study population comprised more females than males, which is a reflection of the larger school population structure. This may suggest that advocacy campaigns to improve girl child education are beginning to yield positive results but this would require further study. As expected, majority (98.8%) of the respondents were in the age range 15-29 years, which is considered to be the most sexually active period of life. Majority (95.8%) were single. This is in keeping with the result of another study that found that increasing engagement in educational pursuits is keeping more youths single and increasing the age at marriage (Singh, 1998).

A high level of awareness of condoms was found in the study population (94.6%). This may reflect to some level, the effectiveness of the recent mass media campaigns by governmental and non-governmental organizations to increase condom use among unmarried people who cannot abstain from sexual intercourse in order to prevent HIV/AIDS and other STIs. It may also be due to the view that youths are getting less embarrassed to discuss about the condoms, which itself results from exposure to mass media campaigns (Agha and Van Rossem, 2002). Awareness was highest for male-type condoms (92.4%), while less than half (36.2%) of the respondents were aware of the female-type condoms (Fig. 2). Relative availability as well as general acceptance of either type of condoms largely tilts towards the male-type condoms. Social marketing strategies have mainly emphasized the male-type condoms in this environment; therefore, it would not be surprising to obtain such disparities in awareness as found in the study population. The relative cost of either type is a factor that also could contribute significantly to the observed disparity.

Most of the respondents (89.0%) quoted the mass media (electronic and print) as their source of information on condoms with only 18.3% citing peers as their source.

Many authors have agreed that the mass media is an effective way of reaching young people with messages though the information may often be incomplete and at times inaccurate (Agha and Van Rossem, 2002; Kenyan National Forum Group on Transport, 2004). The National behavior change communication strategy also recognizes the role played by the media and lists the mass media as the first channel of building awareness, increasing knowledge, promoting role models and influencing societal norms (NACA, 2004).

Majority of the respondents (83.9%) had positive attitudes towards the use of condoms while only 16.1% were not in support of condom use. The most frequent reason given for using condoms at sexual intercourse is as a means of preventing HIV/AIDS and other STIs. This fact has been reported in population reports showing that more people are using condoms for the prevention of HIV/AIDS and other STIs (Gardner *et al.*, 1999). It could be inferred that this group of respondents was adequately informed about the risks involved with unprotected sex and understood that these risks were real and more than just propaganda to discourage sex.

Top amongst the reasons for not using condoms are cultural believe (98.4%) and partners' wish (84.1%). This is in line with earlier researches in this environment confirming that cultural barriers and societal expectations are factors militating against acceptability of condom use among Nigeria youths (Gardner *et al.*, 1999; Sunmola, 2001). These issues need to be put in mind and addressed by intervention program planners when developing STI/HIV prevention programs and strategies. Furthermore, there is a need to teach the females skills for negotiating condom use by their sexual partners. Promotion of infidelity was also given as a reason for non-support of condom use. It can be postulated that this group perhaps believe more in abstinence and faithfulness to one partner and as such saw no need to use condoms. In this proportion of respondents, such beliefs/behaviors should actually be reinforced by messages in STI/HIV intervention prevention programs and on the mass media. On the other hand, it could also mean that these respondents either use other forms of contraception to prevent pregnancies or were ignorant of the fact that condoms not only prevent STIs but also pregnancies. Promotion of infidelity is a factor that is widely quoted as a reason for non-use or non-support for condoms use (Sunmola, 2001).

Of the 307 respondents, who were sexually active, there were more females (51.5%) than males (48.5%). This could be due to the fact that the sampled population has greater proportion of females but it could also be a reflection of the new trends in female liberation among

young literate women in this environment. However, a significantly higher percentage of males than females were favorably disposed to condom use ($p < 0.05$, Table 3). This is a direct reflection of socially sanctioned gender roles or responsibilities in this culture while, the male is expected to be in charge, the female is more or less expected to be a passive partner. It may also be due to the perceived difficulties associated with condom use (Sunmola, 2001).

Even though, 3 quarters of the female respondents who ever-had sex stated that they demand condom use by their partners, condom use could not be guaranteed if the partners wished not to use the condoms. The finding that a statistically significant higher percentage of the males (86.6%) use condoms at sexual intercourse as compared to the females (72.8%) ($p = 0.003$, Table 3) may be a pointer to the fact that messages promoting the use of condoms might be more successful when aimed at males than at females. This would be exploring gender roles as currently existing while trying to work using other programs to promote gender equality. This is another issue that prevention intervention program developers should take special note of.

This study also found that level/year of study was statistically significantly associated with support for condom use, while it was not significantly associated with sexual behaviour and use of condoms. Respondents in the lower levels of study were more likely to support condom use than those in the higher levels of study who had spent more years in the school ($p = 0.021$). This support of condom use by the lower level students however was not accompanied by significant condom use by them. There must exist factors that are responsible for this gap and this needs further research.

The observation that condom use is relatively more frequent among those with multiple sexual partners (85.2%) as compared to those with single sexual partners (76.0%) may be related to the most frequently given reason for use of condoms, which is prevention of STI/HIV among people having multiple sexual partners. This relationship was found to be statistically significant ($p = 0.05$, Table 6). Those who give promotion of infidelity as their reason for staying away from the use of condoms find their strength in associations such as this. It is difficult however, to establish whether, this is a cause or effect. Is it that youths are emboldened to keep many partners because, they feel the condoms would protect them from the risks or is it that the youths who naturally keep many partners seek protection by using the condoms? Whatever, the direction of association, it is important to note that this may reflect an inadequacy of content of awareness campaigns. Campaigns should not be strictly limited to promoting condom use, the content

should be comprehensive including messages to discourage unsafe practices such as keeping multiple sexual partners and messages to reinforce and promote abstinence and/or fidelity to a single sexual partner as being desirable.

As high as 79.5% of the sexually active respondents (>3 quarters) had ever used the condoms during sexual intercourse. Though, there exist an awareness-use gap, the gap is narrow in comparison to what has been described by Sunmola *et al.* (2002), Iwuagwu *et al.* (2000), Orji and Onwudiegwu (2002), Sorhainda *et al.* (2002) and Etuk and Ekanem (2003). This comparatively high use rate may be said to account for the low prevalence of history of symptoms suggestive of STI found among the respondents. This in line with the findings of Salako *et al.* (2006), which recorded a relatively high prevalence of experience of symptoms of STIs among sexually active male adolescents alongside low usage of condoms.

It is noteworthy, that the statistically significant positive relationship between high rate of condom use and low prevalence of STIs found in this study is close to the ideal situation desired by most intervention programs-high awareness levels, high use of contraception and consequently low rates of STIs. This should not however obscure the fact that there still exist an awareness-use gap that should be addressed.

CONCLUSION

This study found a sample of undergraduate youths with a high level of awareness of condoms existing alongside a high level of ever-used rate. However, there still exists an awareness-use gap. A gap also, exists between support for condom use and eventual use of condoms as support for condom use was largely positive but did not translate to significant consistent use of condoms. Males were more likely to use condoms at sexual intercourse while, use could not be guaranteed by females if their partners did not wish to use condoms. Various reasons/misconceptions were proffered by respondents for non-use of condoms in this target group including cultural inappropriateness, partner's wish, concerns about effectiveness and reduction of sexual pleasure.

RECOMMENDATIONS

It is the recommendation that health education intervention programs geared towards addressing reasons/misconceptions that constitute barriers to consistent use of condoms, towards increasing the ability/skill of females in negotiating condom use and

influencing their partner's wish to use condoms are needed in this target group. Although, the study shows a considerably high rate of consistent use of condoms during sexual intercourse, the level of inconsistent use was also fairly high (43.4%). Strategies for promoting consistent use of condoms should be included into intervention programs planned for this target group. With the mass media being the most quoted source of information on condoms by the respondents in this study, it becomes important not only to sustain current efforts, which seem to be yielding fruit but also to ensure comprehensiveness of awareness messages being passed through the medium. The government should put in place policies that will empower females to take firm stands in reproductive health issues that involve them and that will engender female equality. Religion as a reason for non-support of condom use also needs thorough appraisal and religious bodies that discourage the use of condoms should be encouraged to teach alternative strategies for STI prevention.

REFERENCES

- Adewole, D.A. and T.O. Lawoyin, 2004. Characteristics of volunteers and non-volunteers for voluntary counseling and HIV testing among unmarried male undergraduates. *Afr. J. Med. Med. Sci.*, 33 (2): 165-170. DOI: 15565937 .
- Agha, S. and R. Van Rossem, 2002. Impact of mass media campaigns on intentions to use the female condom in Tanzania. *Int. Fam. Plan. Perspect.*, 28 (3): 151-158. DOI: 10.2307/3088258. <http://www.guttmacher.org/pubs/journals/2815102.pdf>. <http://dx.doi.org/10.2307/3088258>
- Arowojolu, A.O., A.O. Ilesanmi, O.A. Roberts and M.A. Okunola, 2002. Sexuality, contraceptive choice and AIDS awareness among Nigerian undergraduates. *Afr. J. Reprod. Health*, 6 (2): 60-70. DOI: 10.2307/3583131. PMID: 12476717. <http://www.bioline.org.br/request?rh02022>. <http://dx.doi.org/10.2307/3583131>.
- Black, M.M., J. Gordon and J. Santelli, 2007. Adolescents Risk-taking Behaviour: Computer-assisted Questionnaire. 2nd Edn. In: Hemphill-Pearson B.J. (Eds.). *Assessments in Occupational Therapy Mental Health: An Integrative Approach*, pp: 309-319. Therefore: N.J. Slack. ISBN: 13:9781556427732
- Butler, A.P., 2003. The reproductive health situation of adolescents. *Prog. Reprod. Health Res.*, 64: 2. <http://www.who.int/hrp/publications/progress64.pdf>.
- Cherannes, B., 1993. Sexual behaviours of Jamaicans: A study review. *Soc. Econ. Stud.*, 42: 1-45.

- Dryfoos, J.G., 1990. Adolescents at Risk: Prevalence and Prevention. 2nd Edn. New York: Oxford University Press, pp: 61-77. ISBN: 13:9780195179620.
- Etuk, S.J. and A.D. Ekanem, 2003. Knowledge, attitude and practice of family planning amongst women with unplanned pregnancy in Calabar-Nigeria. *Nig. J. Physiol. Sci.*, 18 (1-2): 65-71. <http://www.bioline.org.br/pdf?np03015>.
- FMOH, 1999. Federal Ministry of Health, National AIDS and STI Control Programme-Facts Sheet for Nigeria. FMOH.
- FMHN, 2004. Federal Ministry of Health Nigeria. Technical Report on the 2003 National HIV/Syphilis Sentinel Survey among Pregnant Women attending Antenatal Clinics in Nigeria. Abuja, Nigeria: Federal Ministry of Health. <http://www.nigeria-aids.org/pdf/2003SentinelSurvey.pdf>.
- Feyisetan, B. and A.R. Pebley, 1989. Premarital sexuality in urban Nigeria. *Stud. Fam. Plann.*, 20 (6): 343-354. DOI: 10.2307/1966437. PMID: 2623729. <http://www.jstor.org/stable/1966437>. <http://dx.doi.org/10.2307/1966437>.
- Gardner, R., R. Blackburn and U. Upadhyay, 1999. Closing the condom gap. *Popul. Rep. H, Series H*, 9: 1-36. PMID: 10360271. <http://www.infoforhealth.org/pr/h9/h9.pdf>.
- Igra, V. and C.E.J.R. Irwin, 1996. Theories of Adolescent Risk-taking Behaviours. In: DiClemente R.J., W.B. Hansen and L.E. Ponotn (Eds.). *Handbook of Adolescents Health Risk Behaviour* New York: Plenum Press, pp: 35-41. ISBN: 13: 9780306451478.
- Iwuagwu, S.C., A.J. Ajuwon and I.O. Olaseha, 2000. Sexual behavior and negotiation of male condom by female students of Ibadan University, Nigeria. *J. Obstet. Gynaecol.*, 20 (5): 507-513. DOI: 10.1080/014436100434712. PMID: 15512638. <http://www.informaworld.com/10.1080/014436100434712>.
- Kenyan National Forum Group on Transport (KNFGT), 2004. Kenya National Forum Group on Transport. Mitigating the spread of HIV/AIDS within transport activities: A synthesis of literature in Kenya (Submitted for the Kenya Phase I HIV/AIDS Draft Report), pp: 14-15.
- Makinwa-Adebusoye, P., 1992. Sexual behaviour, reproductive knowledge and contraceptive use among Urban Nigerians. *Int. Fam. Plan. Perspect.*, 18: 66-70. DOI: 10.2307/2133396. <http://www.jstor.org/stable/i310769>. <http://dx.doi.org/10.2307/2133396>.
- NACA, 2004. National Action Committee on AIDS. National HIV and AIDS Behaviour Change Communication Strategy 2004-2008, pp: 15-26. Abuja: NACA. <http://ibpinitiative.org/legacy/countries/Nigeria/TRNGA38.pdf>.
- Ofuso-Barko, K., 2000. STDs, HIV/AIDS-challenge of the next millennium. *Nig. J. Genito. Urin. Med.*, 1 (1): 27-29.
- Okonofua, F.E., 1995. Factors associated with adolescent pregnancy in rural Nigeria. *J. Youth Adolescence*, 24(4): 419-438. DOI: 10.1007/BF01537189. PMID: 12319941. <http://www.springerlink.com/content/j252857w0046t137/fulltext.pdf>. <http://dx.doi.org/10.1007/BF01537189>.
- Orji, E.O. and U. Onwudiegwu, 2002. Prevalence and determinants of contraceptive practice in a defined Nigerian population. *J. Obstet. Gynaecol.*, 22(5): 540-43. DOI: 10.1080/0144361021000003126. PMID: 12521426. <http://dx.doi.org/10.1080/0144361021000003126>.
- Orubuloye, I.O., J. Caldwell and P. Caldwell, 1991. Sexual Networking in the Ekiti District of Nigeria. *Stud. Family Plann.*, 22: 61-73. DOI: 10.2307/1966777. PMID: 1858106. <http://dx.doi.org/10.2307/1966777>.
- Robinson, L. and M.S. De Roberts, 1991. Trends in sexual attitudes and behaviours of a college population over a 15 years period. *J. Sex Edu. Ther.*, 17: 32-41.
- Salako, A.A., C.A. Iyaniwura, O.A. Jemiusi and R. Sofowora, 2006. Sexual behaviour, contraception and fertility among in-school adolescents in Ikenne Local Government, South-Western Nigeria. *Nig. J. Clin. Pract.*, 9 (1): 26-36.
- Singh, S., 1998. Adolescent childbearing in developing countries: A global review. *Stud. Fam. Plann.*, 29(2): 106-116. DOI: 10.2307/172154. PMID: 9664627. <http://dx.doi.org/10.2307/172154>.
- Singh, S. and D. Wulf, 1994. Estimated levels of induced abortion in 6 Latin American Countries. *Int. Fam. Plan. Perspec.*, 20 (1): 4-13. DIO: 10.2307/2133331. <http://www.jstor.org/stable/2133331>. <http://dx.doi.org/10.2307/2133331>.
- Sorhainda, A., D. Becker, H. Fletcher and S.G. Garcia, 2002. Emergency contraception among University students in Kingston, Jamaica; A survey of knowledge attitudes and practices. *Contraception*, 66(4): 261-268. DOI: 10.1016/S0010-7824(02)00384-0. PMID: 12413623. [http://dx.doi.org/10.1016/S0010-7824\(02\)00384-0](http://dx.doi.org/10.1016/S0010-7824(02)00384-0).
- Summola, A.M., 2001. Developing a scale for measuring barriers to condom use in Nigeria. *B World Health Organ.*, 79 (10): 926-932. DOI: 10.1590/S0042-96862001001000005. http://www.scielo.org/scielo.php?script=sci_arttext&pid=S0042-96862001001000005&lng=en&nrm=iso.

- Sunmola, A.M., M.M. Dipeolu, S. Babalola and A.D. Otu, 2002. Reproductive, sexual and contraceptive behaviour of adolescents in Niger State, Nigeria. *Afr. J. Reprod Health*, 6 (3): 82-92. DOI: 10.2307/3583260. PMID: 12685412. <http://dx.doi.org/10.2307/3583260>.
- Teen Health, 2007. One-third of Pregnancies in America Are Unwanted. Oct. 19. http://www.teenpregnancy.org/press/pdf/launch_final_5.9.07.pdf.
- UNAIDS, 2006a. Annual Report-Making the money work. Geneva: UNAIDS. ISBN: 978 92 9173 585 3. http://data.unaids.org/pub/Report/2007/JC1306_annual_report_en.pdf.
- UNAIDS, 2006b. Report on the Global HIV/AIDS Pandemic. Geneva: UNAIDS. <http://www.unaids.org/en/KnowledgeCentre/HIVData/GlobalReport/2006/default.asp>.
- Weinstock, H., S. Berman and W. Cates Jr., 2004. Sexually transmitted diseases among American youth: Incidence and prevalence estimates, 2000. *Perspect. Sex Reprod. Health*, 36 (1): 6-10. DOI: 10.1363/3600604. PMID: 14982671. <http://dx.doi.org/10.1363/3600604>.
- WHO, 2000. World Health Organization. Preventing Reproductive Tract Infections. October 16, 2007. http://www.who.int/reproductivehealth/publications/biennial_reports/2000-01/Chapter_3.pdf.
- WHO, 2001. World Health Organization. Global prevalence and incidence of selected curable sexually transmitted infections: Overview and estimates. Geneva: World Health Organization. http://www.who.int/hiv/pub/sti/who_hiv_aids_2001.02.pdf.