

Awareness, Gender Variations, Consequences of Sexual Risk Behavior and Adopted Solutions among Senior Secondary Schools Adolescents in Owerri, Nigeria.

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Abstract: In our area, there is dearth of accurate sex education that could equip adolescents in making informed decisions on sexual issues. This scenario has been linked to a high prevalence of sexual risk behaviors, consequences and poor choices with regard to solutions. **Objective:** To determine the awareness, gender variations, consequences of sexual risk behavior, and adopted solutions among senior secondary school adolescents in Owerri, Nigeria. **Methodology:** This was a cross sectional survey of 384 in-school adolescents in Owerri, Nigeria, selected using a multistage sampling technique. Data were collected using pretested self-administered semi-structured questionnaires. Data were analyzed using SPSS v.22 ($p < 0.05$). **Results:** The majority of adolescents, i.e. 306 (82.5%), were aware of sexual risk behaviors, 340 (91.6%) had received some sex education, and 296 (79.8%) were aware of contraceptives. Key sources of information on sexuality were schools and parents. In total, 54 (14.1%) participants were sexually active, 12 (22.2%) reported ever having an STI, and 9 (75%) had been treated in hospital. Also, 8 (14.8%) of the 54 had dealt with a pregnancy; 7 (87.5%) had undergone an abortion, 3 (42.9%) in a hospital. Sexual risk behaviors among males were associated with age ($p = 0.002$), school type ($p = 0.002$), and alcohol intake ($p = 0.000$), while the residence of the parents had a stronger influence among females ($p = 0.014$). **Conclusions:** This study found high awareness of sexual issues, mainly sourced from schools and parents. Associations were made between sexual risk behaviors and gender differences (age, school type, and alcohol intake in males, parental residence among females). The consequences of sexual risk behaviors were early pregnancy and STIs, with poor solutions adopted.

Keywords: Awareness, gender variations, sexual risk behavior, school adolescents, Nigeria

INTRODUCTION

Sexual risk behaviors are sexual activities that increase the risk of negative outcomes and can take two pathways: either an increase in the chance of contracting or transmitting disease or an increase in the chance of unwanted pregnancy and the attendant consequences (*Oluwatoyin & Oyetunde, 2014*). These sexual risk behaviors include: early age at sexual debut, unprotected sexual acts, multiple sexual partners, coerced sexual intercourse, transactional sexual acts, sexual intercourse under the influence of intoxicating substances, and the use of unreliable methods of birth control or inconsistent use of birth



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Ethics approval: The study was assessed and approved by the Department of Community Medicine Madonna University Ethics Committee, Elele, Nigeria. The study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki. As per international standards or university standards, respondents provided written consent, which was collected and preserved by the authors for the conduct and publication of this research study. Study participants were free to refuse or withdraw from the study at any time without any penalty. The respondents benefited from this study via health education on the consequences of risky sexual behavior and preventive measures.

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control methods (*Oluwatoyin & Oyetunde, 2014*). Adolescence is a period of disorientation and discovery often linked to issues of independence and self-identity arising from tough choices regarding school work, sexuality, drugs, alcohol, and social life (*WHO, 2016*).

Adolescent sexuality still constitutes public health concern worldwide. Studies have shown that this age group lacks accurate and adequate information on sexuality, reproductive health, the consequences of these negative behaviors, and access to reproductive healthcare commodities like contraceptives (*Oluwatoyin & Oyetunde, 2014; Odeyemi et al., 2009; Hall et al., 2004; Woolf-King et al., 2013*). In Nigeria, there are high rates of unintended adolescent pregnancies, early childbirth or risky childbearing from sexual acts, suicide, and untimely deaths from accidents, as well as the negative effects of alcoholism, drug use, violence, and sexually transmitted diseases, including HIV/AIDS (*NPC, 2004; Godswill, 2012; Nnebue et al., 2015; Duru et al., 2010*). These outcomes could be curbed by ensuring that this age group is well-educated on the risks associated with unhealthy sexual behaviors as well as their consequences and preferred solutions.

The influence that families have on effectively promoting a positive attitude and healthy sexual behavior among adolescents has been reduced by the negative effects of modernization, among other factors (*Godswill, 2012*). This is evidenced by a report in Nigeria stating that sexually active students have low mean scores for parent-teenager connectedness, parent-teenager activities, and parental presence (*Nnebue et al., 2015*). This could imply that another avenue by which to effectively reach this group could be through school.

The objective of this study was to determine the awareness, gender variations, consequences of sexual risk behavior, and adopted solutions among senior secondary school adolescents in Owerri, Nigeria.

MATERIALS AND METHODS

This was a cross-sectional descriptive study on the awareness, knowledge, gender variations, consequences of risky sexual behavior, and adopted solutions among senior secondary school adolescents in Owerri Nigeria.

Study setting: This study was conducted from

August to October 2017 in Owerri, one of the three local government areas (LGAs) that constitute Owerri, the capital of Imo state in southeastern Nigeria. The Owerri municipal LGA has its headquarters in the city of Owerri, with an area of 58 km² and a population of 127,213 at the 2006 census (Available at https://en.m.wikipedia.org/wiki/Owerri_Municipal). The majority of the inhabitants are Ibos, civil servants, and Christians. Owerri is a metropolitan city hosting several educational institutions ranging from the primary to the tertiary level. There are 14 registered private and 11 public secondary schools in the municipality.

Study participants: The study population comprised all male and female senior secondary school (SS) students (SS1-3) aged 10-19 in selected registered public and private secondary schools in Owerri Municipal LGA, Imo state. The sample size was determined using a prevalence of 34.3% of sexually active students reported in a study performed in Nnewi Anambra state. With a 10% attrition rate, the sample size was 380 students.

Sampling technique: The multistage sampling technique was used to select study respondents (Cochran, 1997). Stage 1: this involved getting the list of all government approved secondary schools in Owerri, comprising 25 secondary schools, from the State Ministry of Education. Using this as a sampling frame, the schools were stratified into private and public schools (14 private, 11 public schools). Stage 2: this involved further stratification into private single boys, public single boys, private single girls, public single girls, private co-educational schools, and public co-educational schools. Stage 3: a simple random sampling technique was used to select six schools; three each were private and public secondary schools, including one boys only school, one girls only school, and one co-educational secondary school. Stage 4: this involved the selection of students from each school, using a systematic sampling method by consecutive recruitment until the number allotted to each selected school was attained, putting our inclusion and exclusion criteria into consideration.

Variables: These comprised: a) sociodemographic variables such as respondent age, sex, class, religion, tribe, and type of family; b) awareness, knowledge, and sources of information on sexual risk behaviors, contraceptives, and HIV counselling and testing (HCT); c) the consequences of risky

sexual behaviors and adopted solutions.

Data collection: Self-administered, semi-structured questionnaires designed from the relevant literature were used. Reporting bias could result from the sensitive nature of the questions. This was overcome by using anonymous questionnaires and ensuring the students that their answers are would be strictly confidential and used specifically for research purposes.

Statistical analysis: Descriptive and analytical statistics of the data were carried out using SPSS v.22 for Windows (IBM, USA). Descriptive data are presented as charts, simple frequencies, and percentages. Tests of statistical significance were carried out using the chi-squared test for proportions ($p < 0.05$).

RESULTS

Three hundred and eighty-four questionnaires were distributed

in this survey. Three hundred and seventy one of them were analyzed, giving a response of 96.6%. Table 1 shows the socio-demographic distribution of senior secondary school adolescents in Owerri, Nigeria. Table 2 shows awareness of risky sexual behavior as well as STI and sex education uptake among senior secondary school adolescents in Owerri, Nigeria. Table 3 described the awareness of the participants with regard to contraceptives and HCT among senior secondary school adolescents in Owerri, Nigeria. Table 4 shows the contraction of STIs and related outcomes among sexually active senior secondary school adolescents in Owerri, Nigeria. Table 5 shows the occurrence of pregnancy and its outcome among sexually active senior secondary school adolescents in Owerri, Nigeria. Table 6 shows a gender-based comparison of statistically significant variables influencing the sexual practices of senior secondary school adolescents in Owerri, Nigeria.

TABLE 1. Sociodemographic characteristics of senior secondary schools adolescents in Owerri Municipal, Imo State Nigeria.

Age (years)	N (%)	Tribe	N (%)
14	10 (2.7)	Hausa	2 (0.5)
15	84 (22.6)	Ibo	356 (95.9)
16	175 (47.2)	Yoruba	3 (0.8)
17	84 (22.6)	**Others	10 (2.7)
18	16 (4.3)	Marital status	N (%)
19	2 (0.5)	Never married	365 (98.4)
Gender	N (%)	Currently married	2 (0.5)
Male	146 (39.4)	Cohabiting	3 (0.8)
Female	225 (60.6)	Separated	1 (0.3)
Class	N (%)	Residence of parents	N (%)
SS2	63 (17)	Urban	320 (86.4)
SS3	308 (83)	Rural	51 (13.7)
Religion	N (%)	Type of family	N (%)
Catholic	184 (49.6)	Monogamous	303 (81.7)
Pentecostal	128 (34.5)	Polygamous	20 (5.4)
Orthodox	52 (14)	Extended	29 (7.8)
Muslim	3 (0.8)	Single parent	18 (4.9)
Others	4 (1.1)	No response	1 (0.3)

TABLE 2. Awareness of risky sexual behavior, STIs and sex education uptake among senior secondary schools adolescents in Owerri Municipal, Imo State Nigeria.

Heard of risky sexual behavior	n (%)
Yes	306 (82)
No	65 (18)
Source	n (%)
Parent	114 (30.7)
School	180 (48.5)
Church	62 (16.7)
Media	92 (24.8)
Friends	82 (22.1)
Books	83 (22.4)
Internet	5 (1.3)
Have you heard of STIs	n (%)
Yes	330 (88.9)
No	41 (11.1)
If yes, which?	n (%)
Hiv/aids	312 (84.1)
Gonorrhoea	146 (39.4)
Syphilis	143 (38.5)
Chancroid	7 (1.9)
Had sex education	n (%)
Yes	340 (91.6)
No	31 (8.4)
Had sex education	n (%)
Parent	133 (36.3)
School	253 (68.2)
Church	54 (14.6)
Media	58 (15.6)
Friends	55 (14.8)
Books	83 (22.4)
Others	5 (1.3)

TABLE 3. Knowledge of contraceptives and HIV Counselling and Testing among senior secondary schools adolescents in Owerri Municipal, Imo State Nigeria.

What method of preventing STIs do you know	n (%)
Abstinence	236 (70.9)
Condoms	148 (39.9)
Pills	56 (15.1)
Being faithful	141 (38)
Herbs	29 (7.8)
Others	6 (1.6)
Have you heard of contraceptives	n (%)
Yes	296 (79.8)
No	75 (20.2)
What methods of contraceptives do you know	n (%)
Abstinence	118 (31.8)
Condoms	191 (51.5)
Pills	116 (31.3)
Herbs	45 (12.1)
Others	6 (1.6)
Do you know yours HIV status	n (%)
Yes	178 (48)
No	150 (40.4)
Not important	40 (10.8)
No response	3 (0.8)
Heard of HCT	n (%)
Yes	213 (57.4)
No	158 (42.6)
If yes, from where	n (%)
Peers	62 (16.7)
Tv/radio	98 (26.4)
Internet	57 (15.4)
Church	40 (10.8)
Parents	84 (22.6)

TABLE 4. CONSEQUENCES AND ADOPTED SOLUTIONS, STI CONTRACTION AND OUT-COME AMONG RESPONDENTS

Ever had an STI/vaginal infection before	n (%)
Yes	12 (22)
No	42 (78)
If yes, what were the symptoms	n (%)
Itching	8 (66)
Abnormal vaginal discharge	4 (33)
Coloured discharge	2 (16)
Ulcer	0 (0)
Dyspareunia	3 (25)
Offensive odour	0 (0)
Dysuria	1 (8.3)
Where did you treat it	n (%)
Hospital	9 (75)
Home	1 (8.3)
Locally (herbalists)	1 (8.3)
Others	1 (8.3)
Do you know your HIV status	n (%)
Yes	21 (38)
No	24 (44)
Not important	9 (16)
Heard of HCT	n (%)
Yes	30 (55)
No	24 (45)
If yes, from where	n (%)
Peers	7 (13)
Tv/radio	11 (20.4)
Internet	10 (18.5)
Church	6 (11.1)
Parents	13 (24.1)
Have you gone for HCT	n (%)
Yes	4 (7.4)
No	41 (75)
Not important	9 (18)

TABLE 5. CONSEQUENCES AND ADOPTED SOLUTIONS, PREGNANCY OCCURRENCE AND ITS OUTCOME AMONG RESPONDENTS

Ever been/got someone pregnant	n (%)
Yes	8 (14.8)
No	46 (85.2)
If yes, what happened to it	n (%)
Miscarried	0 (0)
Delivered and cared for	1 (12.5)
Delivered and abandoned	0 (0)
Aborted/terminated	7 (87.5)
If abortion, where was it done	n (%)
Chemist	2 (28.6)
Home	0 (0)
School	2 (28.6)
Hospital	3 (42.8)
How many abortions have you had	n (%)
1	2 (28.6)
2	1 (14.3)
3 and above	4 (57.1)
Complications following abortion	n (%)
Yes	6 (85.7)
No	1 (14.3)
If yes, what were the symptoms	n (%)
Bleeding	5 (83.3)
Foul smelly vaginal discharge	2 (33.3)
Menstrual irregularities	0 (0)
Fever	1 (16.7)
Lower abdominal pain	1 (16.7)
How did you treat it	n (%)
Went to hospital	3 (50)
Chemist	0 (0)
Herbs	2 (33.3)
Others	0 (0)
No response	1 (16.7)
Have you repeated an academic year because of this	n (%)
Yes	0 (0)
No	8 (100)

TABLE 6. CONSEQUENCES AND ADOPTED SOLUTIONS, PREGNANCY OCCURRENCE AND ITS OUTCOME AMONG RESPONDENTS

Age (years) for males	Had ever sexual intercourse	χ^2 (p-value)
14	0 (0,0%)	19.362 (0.002)
15	3 (14,3%)	
16	13 (21,0%)	
17	12 (21,6%)	
18	8 (66,7%)	
19	2 (100%)	
Males total	38 (26%)	
Age (years) for females		
14	1 (14,3%)	0.943 (0.918)
15	4 (6,3%)	
16	8 (66,7%)	
17	3 (7,9%)	
18	0 (0,0%)	
Total	16 (7,1%)	
Type of school for males		
Private	25 (39,1%)	10.056 (0.002)
Public	13 (15,9%)	
Total	38 (26,0%)	
Type of school for females		
Private	3 (4,9%)	0.609 (0.002)
Public	13 (7,9%)	
Total	16 (7,1%)	
Residence of parents for males		
Private	29 (23,8%)	1.963 (0.161)
Public	9 (37,5%)	
Total	38 (26,0%)	
Residence of parents for females		
Urban	11 (5,6%)	6.004 (0.014)
Rural	5 (18,5%)	
Total	16 (7,1%)	
General total	54 (14,6%)	7.906 (0.005)

DISCUSSION

The socio-demographic characteristics reported in this study are similar to those reported by studies previously conducted in Nigeria (*Nnebue et al., 2015; Duru et al., 2010*). The majority of the respondents were Christians (98.1%) and of the Ibo tribe (95.4%). This

study found high awareness of sexual issues (about eight in every ten respondents for sexual risk behaviors and STIs and nine in every ten for sex education). This finding differs with respect to the proportions observed in another study, where 60% of participants did not have formal education on sexual issues (*Duru*

et al., 2010). In addition, HIV was the most reported STI (84.1%). This scenario could be due to a high rate of awareness on HIV/AIDS propagated via the media, and other sources such as church, parents, and peers.

Adolescents obtain health information from sources such as parents, peers, religious leaders, health providers, teachers, magazines, books, and the media (*Nnebue et al., 2014*). The utmost concern here is not the varied sources, but where and how to seek and obtain information such that it ensures an understanding of the reproductive health needs of adolescents and encourages healthy sexual decision making and behaviors (*Duru et al., 2010; Nnebue et al., 2014*). We therefore recommend an improved and intensified multi-sectoral approach to promote accurate and adequate information on sexuality and reproductive health via formal comprehensive sex education programs.

Based on the findings of the current study, the key sources of information on sexual risk behaviors reported were almost half (48.5%) from school and a third (37.4%) from parents. For sex education, the key sources of uptake were also from school and parents, at 68.2% and 36.1%, respectively. This finding is in tandem with those of Barker and Rich, where the key sources of information on sexual issues were from school and parents (*Barker & Rich, 1992*). These reports are not in keeping with the findings elsewhere (*Duru et al., 2010; Omobuwa et al., 2012; Oyo-Ita et al., 2005; Lal et al., 2008*), and in nearby Anambra state where 47.2% of participants reported that their key sources of information on sexual issues were friends, peers, and television (*Duru et al., 2010*). However, the sources of information reported in this study are encouraging. The reason is that, while studies have documented that in-school adolescents have gaps in their understanding of reproductive health issues and STIs/HIV (*Woolf-King et al., 2013; Ademola et al., 2006; Tolulope & Oludare, 2009*), it has been reported that adolescents view information from parents as the most trusted. This impacts on sexual decision making and resultant behavior such as delayed sexual debut, controlled sexual partnerships, and protected sexual acts (*Jones et al., 2011; Robert & Sonenstein, 2010*). Since school was reported the major source of in-

formation on health issues, the government at all levels should formulate and ensure the implementation of policy for the inculcation of adolescent reproductive health services into the school curriculum. School teachers should be educated on the need for proper delivery of sex education and effective peer education in schools.

The current study revealed that about eight in every ten respondents is aware of contraceptives. The most common contraceptive method reported was condoms, while abstinence was the most reported method of preventing STIs. This pattern agrees with that of another study (*Duru et al., 2010*). The main reason for the high awareness about abstinence and male condom use is likely to be connected with widespread information in mass media and schools on the ability of these methods of contraception to prevent unwanted teenage pregnancy and STIs, including HIV/AIDS.

Based on the findings of this study, only two-tenths of the sexually active participants reported ever having an STI. This finding is inconsistent with those in studies performed elsewhere, where more than half of the sexually active reported ever having an STI (*UNAIDS, 2000; Chimah et al., 2016*). In this study, while three-fifths of them were treated in the hospital, only 2.7% visited a health facility elsewhere. However, this finding is in keeping with the findings of *UNAIDS (2000)*, *Chimah et al. (2016)*, *Lawoyin (2001)*, and *Fatusi (2005)* in Nigeria, and *Prasad et al. (2005)* in India. This emphasizes the level of risk these students are facing and calls for urgent intervention. This study reported that 44.4% of sexually active respondents do not know their HIV status, while only 7.4% have gone for a HCT. This picture is disturbing since more than half of new HIV infections occur in people aged 15-24 years (*UNAIDS, 2006*). More effort and awareness campaigns should be put in place to promote HCT.

Based on our study findings, 14.8% of the sexually active participants have ever been involved with pregnancy; 87.5% of those had undergone an abortion. This finding is consistent with the rate recorded by *Brabin et al. (1995)* among girls in rural Nigeria. The findings of our study are inconsistent with a study performed in military barracks Lagos that showed that more than half of the sexually experienced participants had been involved

with pregnancy; the most adopted solution to pregnancy was abortion (75.9%), as was revealed in our study (*Chimah et al., 2016*). The reason for this disparity could be that respondents from the Lagos study had more influence from their peers, unlike respondents in this study that had most of their information from their parents. This picture is disturbing, based on a report that, in Nigeria, pregnancy and motherhood mark the end of school attendance. Furthermore, by the age 16 years, 21% of female adolescents have either been pregnant or have given birth (*Brabin et al., 1995*). Also, the incidence of pregnancies among girls in this age group is rising, and most of them face the risk of induced abortions under unsafe conditions (*Oluwatoyin et al., 2011; NPC, 2009*).

In this study, several factors were revealed to have significant associations with the sexual practices of respondents. It was found that age, gender, the nature and ownership of the school, alcohol use, and the residence of respondent's parents had more influence among males than females. The explanations for these gender variations could fall within the context of differences in study methodologies as well as the socio-cultural differences where parental control and monitoring differs between genders.

CONCLUSION

Adolescents from Owerri (Nigeria) have a high degree of awareness of sexual issues, with schools and parents as the key sources of information. This level of awareness did not translate into practice, as there was a high level of involvement in risky sexual behavior culminating in early pregnancy and STIs with the attendant consequences and poor health seeking behaviors.

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