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Assessment of the Awareness Levels on Sexual Transmission Diseases among Secondary School Students in Northern Nigeria

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Abstract

Background: Sexually Transmitted diseases (STDs) are societal problems that could result in tremendous health, social and economic consequences. Due to certain socio-cultural beliefs, certain regions of Nigeria could be poorly aware of STDs and their consequences especially in the adolescents. Hence the need for assessment and health education on STDs in the adolescent population.

Objectives: This study aims to assess the awareness levels of sexual transmission diseases among adolescents in selected public secondary schools in Sokoto State, Nigeria.

Materials and methods: This was a cross-sectional and questionnaire-based survey on 346 randomly selected adolescent students aged 10 – 19 years from secondary schools. Using a pre-tested structured questionnaire, data on participants' sociodemographic variables and responses related to their knowledge and awareness about STDs were collected. The responses were scored and analysed using Statistical Package for Social Sciences (SPSS) version 23.0.

Results: Of all the participants, 306 (76.0%) were females, and most of the students, 220 (63.6%) indicated their peers as the major sources of information about STDs, whereas the least was via mass media, 30 (8.7%). Overall, 65.1% of the students do not discuss with their parents on adolescent reproductive health, 80.3% disagreed that reproductive health facility exists in our community/neighbouring community, and all (100.0%) agree that secondary school students need inclusion in sex education in their curriculum. Also, 70.0% do not believe in having a friend from the opposite sex. Over 65% do not know the major etiological agents of STDs.

Conclusion: Based on these findings, the level of knowledge on STDs among adolescents was low. The secondary school students held a negative view of the existence of reproductive health care facilities in schools and communities. All the respondents submitted that lack of knowledge is one of the factors that influence adolescents' attitudes and practices.

Keyword: Sexually transmitted diseases; Contraceptive; Preventive knowledge; Sexual and reproductive health; Adolescent health; Nigeria

Abbreviations: STDs: Sexually Transmitted Diseases; HPV: Human Papillomavirus; WHO: World Health Organization; RHS: Reproductive Health Services.

Introduction

Sexually Transmitted Diseases (STDs) are a societal burden with tremendous health, social and economic

consequences [1]. Many STIs are hidden because many people may feel stigmatized when addressing them [1]. Although there are several etiological agents of STIs, human immunodeficiency virus (HIV), hepatitis B and C viruses, herpes simplex viruses-1 and 2, *Treponema pallidum, Chlamydia trachomatis, Neisseria gonorrhoea* and human papillomavirus (HPV) often make the top list [2].

According to UNAIDS, almost 37 million people globally were living with HIV in 2017, sub-Saharan Africa accounted for 66% of the cases, 68% of new adult HIV infections, 92% of new infections in children and 72% of all AIDS-related deaths [3]. In Nigeria alone, about 1.9 million people were living with HIV, with a prevalence rate of 1.4% in adults aged 15 to 49 years in 2019 [4]. On the other hand, according to WHO; an estimated 257 million people are living with HBV infection with the highest prevalence in the Western Pacific Region and the African Region as 6.2% and 6.1% of the adult population are infected, respectively [5]. About 1% of persons living with HBV infection (2.7 million people) are also infected with HIV. Moreover, approximately 399,000 people die each year from hepatitis C infection [6]. Furthermore, the estimated global HPV prevalence is 11.7% with Sub-Saharan Africa having the largest burden as well (24.0%) [7].

Adolescent sexual and reproductive healthcare is a global public health concern [8]. This is because the adolescent sexual activity has been on the increase in many countries around the world [8]. The World Health Organization (WHO) defines adolescents as young people between the age of 10 and 19 years, and they constitute about a fifth of the world's population. Adolescence has been described as a time when young people engage in increased risk-taking behaviour that exposes them to many health risks. Worldwide, the highest rates of sexually transmitted diseases (STD) occur among 20-24 years old, followed by 15-19 years old [9]. Out of an estimated 22 million unsafe abortions that occur yearly, 15% occur among young women aged 15–19 years [10].

Adolescents need sexual and reproductive health services to stay safe from unwanted pregnancies and sexually transmitted diseases (STDs). Sexual activity among young people is not always consented and this exposes them to greater risks. Thus, adolescents are more vulnerable to rape, harassment and sexual exploitation, and physical and verbal abuse because they are less able to prevent or stop such manifestations of power [11].

Many adolescents below the age of 20 are already sexually active, but many face difficulties in obtaining reproductive health care. In addition, adolescents are typically poorly informed about how to protect themselves from pregnancies and STDs [12]. Globally adolescents access health services less frequently than expected. In Nigeria, a considerable population of adolescents is sexually active and is involved in unprotected sexual activities with multiple partners which exposes them to a host of reproductive health problems. Nigerian adolescents are also faced with cultural and social contexts which likely affect their access to and use of reproductive health services (RHS) [13]. Sexuality matters are looked upon as taboo for adolescents because sex is regarded as sacred and seen as a topic for only the married [14]. Hence, this study aims to assess the awareness levels of sexual transmitted diseases among adolescents in selected public secondary schools in Sokoto State, Nigeria.

Materials and Methods

Study Area

This study was conducted in Sokoto state, located in extreme north-western Nigeria between longitude $4^0$8E and 6054^0E and between latitude 12^0N and 13^058^1. It shares a boundary with the Niger Republic to the north, Kebbi state to the west and southwest and Zamfara state to the East. The state has a land area of about 28, 232,37 square kilometres and a population of 4,244,399 million people based on the 2006 census made up of two major ethnic groups namely, Hausa and Fulani. The schools that were used for the study include; Nana Girls Secondary school (girls dominated school with a population of 2000 adolescents), Sheikh Abubakar Gummi Model Secondary School (male-dominated with a population of 500 adolescents), Command Day Secondary School, Sokoto (dominated by boys and girls and population of 150 adolescents), Sultan Bello Secondary School (dominated by boys and population of 600 adolescents), Government Day Secondary School, Minannata (dominated by boys and girls and population of 400 adolescents).

Study Design

This was cross-sectional survey research because it was carried out at one point in time. According to Robson [15], survey research seeks to obtain information that describes existing phenomena by asking individuals about their perceptions, attitudes, behaviour or values.

Study Population

This study population included all adolescents aged 10 – 19 years in the selected public secondary schools in Sokoto state.

Inclusion Criteria

The inclusion criteria for this study were voluntarily consented students 10 – 19 years; that is adolescent students at secondary schools in Sokoto State.

Exclusion Criteria

Adults who were 20 years and above were excluded from the study because this study is for adolescent students at secondary schools in Sokoto State. So also, those that cannot read and write are all excluded from the study. Any students that declined consent for participation was excluded.

Sample Size

The sampled population of students was selected using a simple random sampling technique. The sample size for the study was determined as follows:

$n= Z^2 p (1-p) d^2$

Where n = sample size

Z = Statistic for a level of confidence (95% level of confidence, Z value is 1.962)

P = Expected proportion in the target population. (Assuming 50% for the paucity of a similar previous study, p =0.5)

d= Precision level of statistical significance (7%, d=0.07)

$n= (1.962)^2 x0.5 (1-0.5) (0.07)^2$

n = 346.

Therefore, a total of three hundred and forty-six (346) students were selected as respondents for this study. From the target population, the sampling size consisted of adolescents drawn from the 3,650 adolescents of the five public secondary schools in Sokoto state (Table 1).

S/No	Schools	Nº of Adolescents	Sampled Population
1.	Nana Girls Secondary School, Sokoto	2000	190
2.	Sheikh Abubakar Gummi Model Secondary, School	500	47
3.	Command Day Secondary School, Sokoto	150	14
4.	Sultan Bello Secondary School, Sokoto	600	57
5.	Government Day Secondary School Minannata, Sokoto	400	38
	Total	3,650	346

Table 1: Proportionate sampling of respondents from 5 Secondary Schools.

Sampling Technique

Simple random sampling involves hand selection of subjects because they are informative or possess the required characteristics for the objectives of the study. Students at secondary schools in Sokoto State (Nigeria) were selected for this study. Five (5) secondary schools in Sokoto State were selected for the study and 346 respondents were sampled using Krejcie and Morgan table.

Data Collection

After getting consent from the schools' authorities on behalf of the student's parents, questionnaires were distributed by the researcher and two research assistants (1 senior Nursing Officer and 1 Lecturer I from the Faculty of Education). For the administration of the students' questionnaire, the researchers visited the selected schools. Students were approached in the selected schools; first, they were engaged by creating a rapport between the researcher and students by explaining the purpose of the study. Students' consent to participate in the study was sought to sign consent forms and a questionnaire was then handed over for them to fill. Consents were signed by parents through the school authority. The school authority contacted the principal and explained to the parents about the research before approaching the students for the informed consent was signed and collected from students and the questionnaires were given to the students. However, for educational purposes, some declined to request if the filled questionnaire could pick on a later date which was agreed upon by the students and researcher. The researcher guided the students through the rigours of answering the questionnaires; that is, the researcher made sure that the respondents (students) understand every part of the questionnaire and help with the interpretation of any respondent, should the need arise. After collecting the filled questionnaires from the students by the researcher and with the help of research assistants, the questionnaires were put in an envelope and sealed. So also, two weeks after that, the researcher goes through the data collected, to make a presentation and analysis of the data.

Research Instrument

The instrument used for this study is a questionnaire. Data from the student participants was collected by the use of a self-administered questionnaire. Kothari stipulates that the use of the questionnaire is one of the major ways to elicit self-reports on people's opinions, attitudes, beliefs and values. It consists of closed-ended questions to provide specific responses and open-ended items for in-depth information. Open-ended questions permit a greater depth of response and give an insight into the respondents'

feelings, backgrounds, hidden motives and intentions. The questionnaire was designed to measure questions related to the study and it comprised two sections; Section A and Section B. Section A covered the socio-demographic information of the respondents while section B is on the other variables related to the research topic. Before data collection, pre-testing of the study instruments was conducted. Pre-testing aimed to assist in determining the accuracy, clarity and suitability of the research instruments and to check their validity and reliability. The pilot study was conducted at the Government Day Secondary School Kofar Rini, Sokoto State, Nigeria and involved a total of fifteen students. The fifteen (15) students were self-sponsored students who were not residents of the five (5) selected schools in the state hence could not be duplicated in the main study.

Data Analysis

Quantitative data collected were analysed using the Statistical Package for Social Sciences (SPSS) version 23.0 (IBM, California, USA). Descriptive statistics of means, frequencies and percentages were used to describe and summarize data. Data presentation was done on tables.

Results

Table 2 showed the demographic features of the respondents including gender, age, religion, and parents' educational background. It revealed that the respondents consist of 38.2% male and 61.8% female. The age range data indicated that 22% of the respondents were between 10-12 years of age; 41% were between 13-15 years, while 37% are 16 years and older. Furthermore, 83.2% are Muslims while only 16.8% are Christians. Overall, 14.7% of the students' parents had primary education, 47.7% had secondary education, 22.3% had tertiary education and 15.3% had none.

	Frequency	Percent
Gender		
Male	132	38.2
Female	214	61.8
Age		
10-12	76	22
13-15	142	41
16+	128	37
Religion		
Islam	288	83.2
Christianity	58	16.8
Parent Education		
Primary	51	14.7
Secondary	165	47.7
Tertiary	77	22.3
None	53	15.3

Table 2: Demographic features of the Respondents.

Data were collected to examine the respondents' source of information on reproductive health (Table 3). It appeared that majority of the respondents (63.6%) get information on reproductive health from their peers. This was followed by parents/guardians (15.9%), teachers (11.8%), and mass media (8.7%). The results, therefore, suggest that many students get information on reproductive health care from their peers, further implying peer influence concerning adolescent health (Table 3).

	Frequency	Percent
Parents/Guardians	55	15.9
Teachers	41	11.8
Peers	220	63.6
Mass Media	30	8.7

Table 3: Sources of information on Reproductive Health Care.

S/N	Items	Strongly Agree F (%)	Agree F (%)	Strongly Disagree	Disagree	Undecided F (%)
1	I discuss with my parents about Adolescent Reproductive Health care?	0 (0.0)	101 (29.2)	0 (0.0)	225 (65.1)	20 (5.8)
2	The discussion on Adolescent Reproductive Health care with my parents is beneficial to my adolescent life	0 (0.0)	346 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
3	Reproductive health facility exists in our community/neighbouring community	0 (0.0)	47 (13.6)	0 (0.0)	278 (80.3)	21 (6.1)
4	The adolescent reproductive healthcare facility in my community/neighbouring community is closest to my school	0 (0.0)	42 (12.1)	0 (0.0)	269 (77.8)	35 (10.1)
5	There is religious restriction in the issues related to Adolescent Reproductive Health care.	0 (0.0)	43 (12.4)	0 (0.0)	262 (75.7)	41 (11.8)
6	There is adolescent reproductive health care facility in your school?	0 (0.0)	42 (12.1)	0 (0.0)	235 (67.9)	69 (19.9)
7	Secondary school students need inclusion of Sex Education in their curriculum	0 (0.0)	346 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)

Table 4: Perceptions on Reproductive Health Care.

Table 4 showed the respondents' perceptions of reproductive health in secondary schools in Sokoto State. About 65.1% of the respondents disagreed that they discussed the reproductive health care with their parents. However, 29.2% agreed, while only 5.8% were not sure. On item two, all the respondents however acknowledged that discussion of reproductive health care with parents is beneficial. On item three, 80.3% of the respondents disagreed that reproductive health facilities exist in their community, however, 13.6% agreed and 6.1% were not sure. On item four, 77.8% objected that reproductive health care facilities are close to schools. Yet, 12.1 agreed while 10.1 were not sure. Item five showed that 75.7% of the respondents believed that there is a religious restriction on issues related to adolescent reproductive health care. However, a considerable percentage of 12.4 agreed. On the availability of reproductive health care facilities in schools, 67.9% of the respondents disagreed although 12.1% agreed while 19.9% were not sure. Lastly, all the respondents (100%) agreed that secondary school students need the inclusion of sex education in the school curriculum.

S/N	Items	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided
1	The knowledge of students on contraceptive use is beneficial	0 (0.0)	346 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
2	I belief in having a friend from opposite sex	0 (0.0)	104 (30.0)	0 (0.0)	242(70.0)	0 (0.0)

Table 5: Knowledge and Attitude toward Contraceptive use.

To address knowledge and attitude towards the use of contraceptives among secondary school students, two subjective ratings were used. Respondents were asked to rate their agreement on the benefits of students' knowledge of contraceptives and their belief in having friends of the opposite sex. All the respondents had a positive attitude toward the benefits of contraceptives. Furthermore, 30% of the respondents believed in having friends from the opposite sex although a higher per cent (70%) don't believe, thereby having a negative attitude towards it (Table 5).

S/N	Items	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided
1	I am aware of any Sexually Transmitted Diseases (STDs)	0 (0.0)	115 (33.2)	0 (0.0)	231 (66.8)	0 (0.0)
2	I know about Gonorrhoea, Syphilis, HIV/ AIDS and Chlamydia	0 (0.0)	115 (33.2)	0 (0.0)	231(66.8)	0 (0.0)

Table 6: Respondents' Knowledge of STI.

Respondents were asked to rate the level of awareness of STIs. 66.8% of the respondents disagreed that they are aware of STDs. The same per cent also disagreed that they are aware of Gonorrhea, Syphilis, HIV/AIDS and Chlamydia (Table 6).

Discussion

Adolescent sexual and reproductive healthcare is a global public health concern. This is because the adolescent sexual activity has been on the increase in many countries around the world. Sadly, sexual health is not thoroughly discussed in schools as policymakers, teachers, and stakeholders continuously debate the emotionally charged topic of how explicit sex education should be done, how often should it be discussed, who should deliver the message, and at what age the conversation should be initiated.

The problems of teenage pregnancy, crude abortion, maternal complications, and STIs are common occurrences and increasing recently. These problems call for research on reproductive health care and practices. The current study highlights the specific levels of STIs-related knowledge and awareness among secondary school students of different schools with varied gender populations in Sokoto state, Nigeria.

Findings from this study revealed that secondary school students held a negative view of the existence of reproductive health care facilities in schools and communities. However, they acknowledged the potential benefits of the inclusion of sex education in the school curriculum and the discussion of reproductive health with parents. Low provision of reproductive health facilities has been an issue of concern over the last few years. For example, available statistics indicate that reproductive health service coverage rates are low, while the few available ones are not targeted to the needs of adolescents [16]. The resultant effect of this low provision is the high rate of infectious diseases such as HIV and AIDS [17]. In support of this finding, other studies have reported increased challenges that adolescents face in accessing reproductive health services [18]. These studies reported that access is low due to low provision. While supporting the finding that the respondents of this study acknowledged the potential benefits of inclusion of sex education in the school curriculum, a major challenge that inhibits such inclusion is the pressure from community leaders.

The study by UNESCO [19] indicated that opposition from religious organizations and conservative political interest groups have successfully opposed the inclusion of sex education in schools. Findings of the UNESCO [19] study further indicate that these groups believe that sex education is bound to encourage young people to experiment with sexual activities. In another study [20], the low provision and under-utilization of RHS are associated with this opposition, and adolescents are inadequately informed about sexual matters. Based on this evidence, it can be inferred that the low provision of RHS in Nigeria is not a free choice, but a function of societal, political, and religious pressure [21]. This low provision of RHS is contained various empirical evidence which reported that RHS coverage is low resulting to the prevalence of STIs including HIV and the increasing rates of teenage pregnancy [18,22]. Supporting the potential benefits of RHS provision as found by the study, WHO suggested that adolescents require services that are specific, appropriate, accessible and user-friendly to effectively address their SRH needs.

Findings from this study revealed that secondary school students in Sokoto State display a positive attitude (belief) concerning the benefits of awareness of knowledge on the use of contraceptives. Literature indicated that adolescents have low access and knowledge on the use of contraceptives. For example, available statistics by UNFPA [23] reported that young adolescents in Sub-Saharan Africa under-utilize modern contraceptives. In support of the study findings, another survey conducted in 41 Sub-Saharan African countries from 1990-2011 revealed that in most countries, less than 10% of adolescent women report the use of a

modern contraceptive method [24]. However, other studies reported a higher trend in the use of contraceptives among adolescents as opposed to married youths [25]. Yet, low rates of modern contraceptive use were reported in West Africa, including Niger, Nigeria and Benin Republic. In contrast, some countries in Eastern and Southern Africa had higher rates of contraceptive use with 31% in Rwanda, 35% in Zimbabwe and 39% in Namibia [23]. Based on studies, it can be inferred that report on contraceptive use is inconsistent as the use of contraceptive tend to differ across countries and region.

Findings from the study revealed that secondary school students in Sokoto State lack knowledge of sexually transmitted diseases. This finding contradicts the previous findings that revealed perceptions on the potential benefits of contraceptive use. However, attitude toward the benefits of contraception might be due to avoidance of other adolescent-related problems such as pregnancy. Several explanations have been offered as to why adolescents lack knowledge of STIs, including the lack of inclusion of sex education in schools and parents' inability to educate their children on matters concerning STIs. Insufficient access to Sexual and Reproductive Health (SRH) education and services is another problem resulting in a lack of knowledge about sexuality, puberty and reproductive rights which may result in severe problems among adolescents' sexual and reproductive health. Several empirical studies support the findings of the present study. For example, Omo-Agjoja [17] found that limited knowledge of STIs among adolescents and the low level of knowledge of reproductive health and limited access of young people to youth-friendly health services have been identified as underlying factors contributing to the rising trend of HIV/AIDS in Nigeria.

Such low knowledge of STIs among adolescents has resulted in to increase in STIs. For instance, Aji, *et al* [16] found that most of the adolescents seen in STD clinics had a previous history of vaginal intercourse. In the Cross River State of Nigeria, 13.1% of the sexually active female adolescents have had genital tract infection; in Abia State, 19.3% of boys and 9.5% of girls claimed they had been infected with gonorrhoea and syphilis while data from Niger State show that 15.4% of sexually active adolescents had contracted STDs. However, low knowledge of STI have been associated with religious opposition, claiming that exposure of adolescents to the knowledge of STIs could help in illegal sexual behaviour at the expense of awareness of prevention.

The strength of this study was that it systematically identified and included awareness estimates from the participants. However, the cultural homogeneity was high among most respondents analyzed and could be a source of bias in the interview or the data collection process.

Conclusion

This study found that Secondary school students held a negative view of the existence of reproductive health care facilities in schools and communities. However, they acknowledged the potential benefits of the inclusion of sex education in the school curriculum and the discussion of reproductive health with parents. All the respondents submitted that lack of knowledge is one of the factors that influence adolescents' attitudes and practices. The respondents were also of the view that lack of knowledge on reproductive health care affects students' wellbeing. Participants reported that a lack of knowledge about reproductive healthcare leads to many health challenges. The study also found that participants display a positive attitude regarding the benefits of awareness of knowledge on the use of contraceptives. Furthermore, the study revealed that the participants lack knowledge of sexually transmitted diseases. More so, the participants believed that peer pressure influence information seeking in reproductive healthcare. Lastly, the participants acknowledged that knowledge plays a large influence on the effect of reproductive healthcare. The current study findings indicate that awareness is needed to be enforced. The differences observed among populations are highlighting the possibility for improvement by directing effort toward specific populations.

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