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Title: Knowledge and perception of young adults in Nigeria on effectiveness of condom use in prevention of sexually transmitted infections.

Abstract

Background: Although sexually transmitted infections (STIs) are a global health problem affecting every region of the world, the higher prevalence and mortality rate of STIs in developing countries of the world, like Nigeria, make them serious public health issues in this region.

Objective: The aim of this study is to assess the knowledge and perception of young adults in Nigeria on the role of condom (both male and female condoms) as a preventive measure against STIs during heterosexual and homosexual intercourse.

Materials and methods: Data was collected from participants selected from the northern and southern Nigeria using self-administered questionnaire specifically designed for this study.

Results: Knowledge of condom efficacy in STI prevention was satisfactory. However, knowledge and practice of the correct use of condom was poor. Only 47.1% of the 102 participants in this study reported correct condom use of wearing condoms before staring intercourse and removing condoms after ejaculation. As a strategy to include the experiences, knowledge and perception of men who have sex with men, this study asked the question on condom use during anal sex. Only 24.4% of the male participants indicated they have never had anal sex while for females, the percentage was more than half (53.5%). Condom use during anal sex was low with only 20.6% of participants reporting condom use during anal sex. Negative perceptions about condom use – such as that condom use promotes sexual promiscuity, and not using condoms with steady sexual partners – were significant in this study. Also, condom use errors were common in this study.

Conclusion: There is a wide gap in knowledge of correct condom use in this population. There is need for interventions that address the issue of condom use during anal and same-sex sexual intercourse in this population.

Keywords: condom; knowledge; perception; sexually transmitted infections; young adults.

Introduction

Sexually transmitted infections (STIs), are infections that are transmitted or contracted mostly through sexual routes. Some STIs can however, be spread through nonsexual routes like skin-to-skin contact, contact with blood products or tissues also (1). They are caused by more than 30 different organisms ranging from bacteria, viruses and parasites (1). Some common STIs include the human immunodeficiency virus (HIV), chlamydia infection, gonorrhoea, trichomonasis, syphilis, human papilloma virus (HPV), herpes simplex virus (HSV), and the hepatitis-B virus (HBV), amongst others. The asymptomatic nature of most STIs is a major contribution to their spread, late detection and control (2).

Indeed, STIs have caused major global health problems for centuries. Their prevalence cuts across every part of the world with an estimated daily incidence of more than one million globally (1). However, the developing regions of the world like Africa have the highest share of STI prevalence and mortality globally. In Africa, the high prevalence of STI remains a major health and economic burden (3). As in most diseases; some groups are more at risk of STIs than others.

Generally, anyone who is sexually active is at risk of contracting STIs. However, the risk increases with the increase in sexual activity and unsafe sexual practices. Young adults, sex workers, men who have sex with men (MSM), prison inmates and intravenous drug users are among high risk groups for STIs (2). Amongst all, age remains the highest risk factor in STIs.

Adolescents and young adults (15–24 years) constitute only 25% of the sexually active population, however, about 50% of all newly acquired STIs is attributed to this age group (4). The high prevalence in young adults is as a result of higher tendency to engage in high risk unsafe sexual activity (4, 5), and also as a result of lack of information and support during sexual development (6).

In addressing the problem of STIs, a key aspect of public health interventions is primary prevention. Several preventive measures – like the use of vaccines, male circumcision, abstinence, condom use amongst others –have been recommended to tackle the STI burden. Vaccines, when present, usually offer a high degree of protection against the specific STI they target. However, unlike vaccines, condom use – though not 100% effective – has a broader spectrum as it protects against many STIs (6). Condoms help to break the chain in transmission of STIs and have been recommended by the WHO (1) as an effective method in reducing the risk of acquiring or transmitting STIs.

Nevertheless, for one to fully enjoy the protection condom offers against STIs, condoms must be used correctly and consistently. Correct condom use involves: correct steps in wearing condom, wearing and removing the condom at appropriate times during sexual intercourse, not reusing condoms, amongst others. Consistent use of condoms involves using condoms for all sexual intercourses (both anal and vaginal). Proper knowledge about correct and consistent condom use, and condom effectiveness are important factors in shaping condom use behavior as they increase condom acceptability and subsequent use (7). Other factors that affect condom use behaviors include religion (8, 9), social norms and perceptions (10, 11).

Globally, there has been a rising trend in distribution, access and use of condoms in recent years (12). Contrary to this global trend, Nigeria, a developing country in Africa, is presently experiencing a declining trend in condom use (13). This is not unrelated to the increasing prevalence of STIs in the African region as a whole. The need to identify the underlying causes of this decline in condom use in Nigeria forms the basic rationale of this research. Previous studies on condom use have been conducted in the Nigerian population (14, 15) and in similar populations (16, 17); however, some gaps have been identified in these studies which the current study will be addressing. In achieving this, this study involved not just male participants, but females too and data was collected on condom use (both male and female condoms) during heterosexual and homosexual intercourse.

Materials and methods

The study was carried out using a survey research design, which provided a quantitative and numeric description of the issue under study using a study sample.

Study population

The target population for this study was adolescents and young adults, aged 16–29 years, in Nigeria. Nigeria has a population of about 173.5 million (18) 23.4% of which are adolescents and young adults aged 16–29 years (19). To extensively address the aim of this research, this is the most suitable population to study (based on their age, geographical location as well as decreasing trend in condom use in Nigeria). Equal number of participants were selected from the major geographical regions in Nigeria (Northern and Southern) for a better representation. Although, the Nigerian population as a whole shares similar characteristics, however, these two regions differ in some demographic characteristics like religion, educational/literacy rate amongst others.

Sampling, sample size and data collection

Sampling was purposively done based on members of the population who fall into the inclusion criteria until the desired number for both regions was attained. However, to ensure this study collected more representative data and included people from different social classes, participants were drawn from different locations in each region. The sample size in this study was 102 participants, comprising of 49 males and 53 females between the ages of 16–29 years. The decision of the sample size was based on its feasibility and cost effectiveness; and also similarities in demographic characteristics of the samples which reduce the heterogeneity of the population and hence reduce the need for larger sample size. For the purpose of this study, participants were adolescents and young adults (both males and females), aged 16–29 who were already sexually active.

Material and data collection

Data from participants in this research were collected using self-administered questionnaires distributed personally to participants. The decision to use this method was based on the sensitivity of the area of study, cost effectiveness, reliability and less influence of the researcher over results (20, 21). The questionnaire was distributed in different locations like youth centers, bars, churches, schools and recreation centers in the study areas. Prior to consenting to participate, participants were given an information sheet about the research area so as to obtain informed consent. As this study used a self-administered questionnaire, piloting was very necessary to ensure the questionnaire was well designed, worded and appropriate in collecting the necessary data. In addition to piloting, a test-retest exercise was carried out in this study to ascertain the reliability of the questionnaire in providing the same information if used on same participants at different times, day or location. A 100% correlation was achieved for all 10 participants in the test-retest exercise in this study.

Ethical consideration

Ethical approval was obtained from the University of Sunderland Research Ethics Committee. Participation in this study was voluntary, and participants gave informed consent prior to their filling the questionnaires. Confidentiality and anonymity was assured to participants all through the process.

Data analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) version 13. Analysis conducted included descriptive statistics, cross-tabulation and test of significant relationship. Statistical test of significance ($\chi 2$-test) was computed to assess the association and/or relationships between various dependent and independent variables.

Results

Descriptive analysis of data collected revealed that 52% [53] of the participants were females. A total of 5.9% [6] of the participants were aged 16–19 years while 44.1% [45] and 50% [51] were aged 20–24 and 25–29 years, respectively. At the time of the survey administration, 2% [2] of the participants reportedly had some secondary school education, 22.5% [23] were O level/SSCE holders, 27.5% [28] had tertiary certificate/degree, and 37.3% [38] had bachelor degrees, while 8.8% [9] had post graduate degrees. Tables 1 and 2 show results of descriptive and inferential analysis, respectively.

Condom use behavior

Only one fifth (20.6%) of the participants indicated they had always used condoms during intercourse in the last 3 months. Most of the participants (78.4%) reported that condom use can prevent STIs. The pharmacy was the most popular source of condoms (67.6%); other reported sources include shops (7.8%), health centers (5.9%), and sexual partners (4.9%).

Knowledge of condom use

In reporting where they first heard about condoms, 34.3% of the participants indicated from school, 28.4% and 21.6% reported from their friends and media respectively. Other sources mentioned include parents/family and sexual partners. Over half of the participants reported correct condom use of wearing condoms before intercourse begins (59.8%) and removing condoms after ejaculation (58.8%). However, further analysis of these two behaviors showed that less than half (47%) of participants reported both wearing and removing condoms at the correct times (i.e. before intercourse and after ejaculation, respectively). Participants of older age range (25–29 years) were more likely to wear condoms at the correct time during intercourse ($p = 0.005$) than the younger participants. As expected, people with higher level of education demonstrated statistically significant higher knowledge of the effectiveness of condoms in reducing STIs risks ($p = 0.003$).

Experiences and perception about condom use

Some commonly reported condom use experiences were also reported in this study. These include: reduced sexual sensation when using condoms (45.1%); condom breakage and slippage (35.3%); and loss of erection while using condoms (13.7%). All experiences were in the last 6 months. Further analysis using a 3-way contingency table showed that only 17.6% of the participants reported they have not experienced any of the above.

Inferential analysis of the variables on the frequency of condom use and loss of erection while using condoms showed a statistically significant relationship ($p = 0.003$). Of the participants who indicated they have always used condoms in the last 3 months, 90% reported that they have not experienced loss of erection in the last 6 months. Similarly, participants who have never used condoms during sexual intercourse in the last 3 months were significantly more likely not to feel same sexual sensation/pleasure when they use condoms ($p = 0.05$).

As a strategy to include the experiences, knowledge and perception of MSM, this study asked questions on condom use during anal sex. Only 24.4% of the male participants indicated they have never had anal sex while for females, the percentage was more than half (53.5%). Condom use during anal sex was low with only 20.6% of participants reporting condom use during anal sex.

Finally, some negative perceptions like ‘condom use promotes sexual promiscuity’ and ‘not using condoms with steady sexual partners’ were commonly reported (42.2% and 31.3%, respectively). People who reported using condoms with steady partners were significantly less likely to feel reduced sexual pleasure when using condoms ($p = 0.005$).

Discussion

The findings from this research show that the participants had a satisfactory knowledge of effectiveness of condoms in STI prevention. This is similar to the findings from the 2013 Demographic and Health Survey by the National Populations Commission Nigeria, which reported that 74% of men and 58% of women in Nigeria indicated having knowledge of the effectiveness of condoms in HIV prevention. In spite of this, knowledge of proper/correct condom use was poor amongst participants. Some demographic factors like educational level and age were found to have significant effects on knowledge about condom effectiveness and correct condom use behavior, respectively. The relationship with age might be because older participants might have had unpleasant outcomes like STIs in the past and have learnt the hard way.

Furthermore, pharmacies remain the major source of condoms in Nigeria. With most of the participants (78.4%) reporting pharmacies as their source for condoms; the cost of condoms (about 100 NGN, i.e. about 40 British pence for a pack of four condoms in Nigeria) can be a barrier to their use considering the rate of poverty in Nigeria – with about 68% of the general population living below $1.25 (22). The low response for those who get their condoms from the health centers might be an indication of the failure on the part of the health centers and clinics in Nigeria in providing enough condoms to serve this population; or a lack of trust in sourcing condoms from these institutions. The later can be attributed to factors like the health centers/clinics always running out of stock, labelling of the individuals who source for condoms here as promiscuous amongst others.

Evidently, this study also showed a pattern in condom use behavior that is underpinned by poor knowledge of proper condom use and also negative perceptions around condom use which can be products of social construction. Poor knowledge of condom use results to incorrect use of condom, like removing condoms before sex is over or immediately ejaculation occurs as well as starting sex before wearing condoms [all of which undermine the protective role of condoms against STIs (23–25)].

Another important aspect of proper condom use as stated earlier is consistency. With only 25.5% of the participants reporting using condoms always in the last 3 months, there is need to encourage consistent use of condoms among young adults in this population. Condom use inconsistency can be as a result of factors such as experience of condom use errors as well as social factors like societal norms and beliefs. Correcting the level of inconsistent condom use seen in this study population is not so simple. To achieve this, the underlying causes (such as the perception of not using condoms with steady sexual partners; associating condom use with promiscuity; and poor access to condoms – which were commonly reported in this study) need to be addressed.

An equally significant aspect of the results is the finding on condom use during anal sex. It is important to mention the existence of a gap in the literature on condom use among MSM in Nigeria. This is mostly because of the anti-gay law in Nigeria which attracts a 14 years' imprisonment for same sex sexual activities. However, the existence of this law does not necessarily mean absence of such practices in Nigeria. The gap in literature is perhaps related to fear to participate in studies centered on same sex intercourse, created by this law. Nonetheless, with MSM being at high risk of STI transmission as a result of the risks involved

in anal sexual activities, the researcher decided to design a question that will collect data on the experiences of MSM and at the same time make them feel most comfortable to respond to it. The question on condom use during anal sex was designed to apply to both heterosexual and homosexual activities. The males in this sample reported significantly inconsistent and non-use of condoms during anal sex. This trend can be a serious drive to STI transmission to the general population especially due to the fact that the MSM group is not a closed system,

some MSM still have sex with women.

Conclusion

The present rate of condom use in Nigeria, shown in this study, is not enough to curb the rising prevalence of STIs and HIV in this region. The major findings of this research are the existence of poor knowledge of correct condom use, and significant level of negative perception about condom use which subsequently affects the decision and behaviour around condoms. Further research is needed in this population to better understand the social factors that contribute to the commonly held negative perceptions about condoms in this population.

Conflict of interest statement: The authors declare no conflict of interest.

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