Knowledge and Attitudes of Students at a Caribbean Offshore Medical School Towards Sexually Transmitted Infections and Use of Condoms

RO Orisatoki[1], OO Oguntibeju[2]

ABSTRACT

Background: *Sexually transmitted infections remain one of the predominant health issues that affect young adults. The aim of this study is to assess the level of knowledge, the attitudes and misconceptions of medical students at a Caribbean University towards STIs and condom use.*

Method: *A cross-sectional descriptive study was carried out among medical students by employing semi-structured questionnaires.*

Results: *Out of 150 questionnaires, 130 were completed, showing a response rate of 87%. The ages of the respondents ranged from 19 to 45 years with a mean age of 26 (SD 5.2) years. The findings indicated that the knowledge of students concerning STIs is high (95.4%). Twenty-four (18.5%) of the respondents had experienced vaginal/penile discharge following sexual intercourse over the last 6 months. The correlation of beliefs in condom usage and risky behaviour gives an odds ratio of 0.19 indicating a lower use of condoms among the students. A negative attitude towards condom usage was seen in 3.8% of the respondents. The main reason for condom usage was to prevent unwanted pregnancy and not to prevent contracting sexually transmitted infections.*

Conclusion: *The knowledge of students about STIs in this study was found to be high, however, risky behaviour such as having sexual intercourse with commercial sex-workers and regular unprotected sexual activities were identified although the prevalence of such behaviour was found to be low. We therefore recommend that behaviour modification programmes with regard to sex education and condom usage be implemented for the medical students as they are to be the future educators of the public on these matters.*

Keywords: Attitudes, Caribbean offshore medical school, condom, knowledge, sexual transmitted infections, students.

Conocimientos y Actitudes de Estudiantes en una Entidad de la Llamada Caribbean Offshore Medical School en Relación con las Infecciones de Transmisión Sexual y el uso de Condones

RO Orisatoki[1], OO Oguntibeju[2]

RESUMEN

Antecedentes: *Las infecciones de transmisión sexual siguen siendo uno de los problemas de salud predominantes que afectan a los adultos jóvenes. El objetivo de este estudio fue evaluar el nivel de conocimientos, actitudes y concepciones erróneas de estudiantes de medicina en una universidad caribeña hacia las ITS y el uso del condón.*

Método: *Se llevó a cabo un estudio descriptivo transversal entre los estudiantes de medicina empleando cuestionarios semiestructurados.*

Resultados: *De 150 cuestionarios, se completaron 130, para una tasa de respuesta de 87%. Las edades de los encuestados fluctuaron de 19 a 45 años con una edad promedio de 26 (SD 5.2) años. Los hallazgos indicaron que el conocimiento de los estudiantes acerca de las ITSs es alto: (95.4%). Veinticuatro (18.5%) de los encuestados habían experimentado descarga vaginal/uretral tras el acto*

[1]Department of Medical Physiology, School of Medicine, Spartan Health Sciences University, Vieux Fort, Saint Lucia, West Indies and [2]Department of Biomedical Sciences, Faculty of Health and Wellness Sciences, Cape Peninsula University of Technology, Bellville 7535, South Africa

Correspondence: Dr RO Orisatoki, Department of Medical Physiology, School of Medicine, Spartan Health Sciences University, Vieux Fort, Saint Lucia, West Indies. E-mail: rotioris@yahoo.com

sexual durante los últimos 6 meses. La correlación de creencias en el uso del condón y comportamiento de riesgo arrojó un cociente de probabilidades (odds ratio) de 0.19, lo que indica un uso menor de condones entre los estudiantes. En 3.8% de los encuestados se observó una actitud negativa hacia el uso del condón. La razón principal para el uso del condón era prevenir embarazos no deseados y no el evitar contraer infecciones de transmisión sexual.

Conclusión: *Se halló que el conocimiento de estudiantes sobre las ITSs en este estudio fue alto. Sin embargo, se identificaron comportamientos de riesgo tales como el acto sexual con las trabajadoras del comercio sexual y las actividades sexuales regulares sin protección, aunque se halló que la prevalencia de estos tipos de comportamiento era baja. Por consiguiente, recomendamos que se pongan en práctica programas dirigidos a la modificación de conductas en relación con la educación sexual y el uso del condón para los estudiantes de medicina, ya que estos van a ser los futuros educadores del público en estos asuntos.*

Palabras claves: Actitudes, "Caribbean Offshore Medical school", condón, conocimientos, infecciones de transmisión sexual, estudiantes

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INTRODUCTION

Sexually transmitted infections are regarded as a group of communicable diseases that are transferred predominantly by sexual contact. They are increasingly occurring at a high level, thereby forming one of the commonest groups of notifiable infectious diseases in most countries (1). Sexually transmitted infections (STIs) demonstrate varying epidemiologic presentation from country to country and from one region to another within a country, based on ethnographic, demographic, socio-economic and health factors (2).

According to a recent report, the Caribbean has a HIV/AIDS prevalence rate of 1.1% which is considered to be the second highest in the world after sub-Saharan Africa, and the most affected in the Americas (3). The commonest route of transmission of HIV/STI in the region is unprotected sexual intercourse. Despite a certain level of knowledge and awareness of the virus in the Caribbean, the incidence of new cases of HIV/AIDS is on the increase, making it one of the leading causes of death among persons aged 25 to 44 years. In 2007, it was estimated that about 17 000 newly infected cases were identified in the region, which translates to about 230 000 people living with HIV in the Caribbean (3).

The epidemiologic profile of STIs, before the advent of HIV/AIDS, was observed primarily to be bacterial infections which included syphilis, gonorrhoea and viral infections caused by the herpes simplex and human papilloma viruses, however HIV/AIDS has contributed its own effect to the disturbing situation of STIs (1, 2). Research findings have indicated that persons living with a STI have a three to five fold increase in risk of being infected with HIV than those who do not have sexually transmitted infections (4–7).

Recent statistical data on STIs showed that there is an increasing number of STIs and deaths due to HIV/AIDS, particularly in the developing countries (8). The risk of contracting STIs due to risky sexual behaviour such as unprotected sexual intercourse among the youth and young adults who hold various misconceptions about the use of condoms for protective sex is high (1). It has been observed that effective preventive measures that can reduce the rate of spread of STIs among young adults, particularly university students can only be achieved through assessment of the students' knowledge of STIs which include HIV infection, predisposing factors to infection by STIs and their attitudes towards STI/HIV (7). Hence, the need arose to assess the knowledge and attitudes towards STIs among students at an offshore medical school in St Lucia, West Indies. This study assessed the level of knowledge, attitudes and misconceptions of the students towards STIs and condom usage. The study was deemed to be important and relevant due to the increasing spread of HIV infection in the Caribbean in general and St Lucia in particular and to our knowledge, no such study has been carried out in St Lucia.

SUBJECTS AND METHODS

The study was a cross-sectional descriptive survey where qualitative data were collected from medical students in their preclinical years at the Spartan Medical School. Spartan Health Sciences University is a private medical school located in rural southern St Lucia, with 90% of the students coming from the United States of America (USA) and Canada while 10% of the students are Africans and West Indians.

Questionnaires were distributed to the students who were grouped in their various trimester classes. The aims of the study were explained to them and verbal consent to participate obtained from them. The questions were semi-structured and consisted of personal data (excluding names) and demographic characteristics, knowledge about STIs, their causes, modes of transmission and signs and symptoms as well as their attitudes towards condom use. The questions were designed in such a way as not to lead the respondents to a particular answer especially the knowledge questions on 'Yes' which were ascribed to the correct definition of sexually transmitted infections and 'No' to incorrectly defined ones. Each questionnaire took about 10–15 minutes to complete. Some questionnaires results were recorded as

invalid responses because the respondents marked 'Yes' and 'No' columns at the same time while other respondents left some questions unanswered. The protocol and design of the study was approved by the Academic and Ethical Committee of Spartan Health Sciences University in accordance with the Helsinki Declaration on the use of human subjects for study purposes. The data were collated and analysed using the Statistical Package for Social Sciences version 13.0 software (SPSS inc., Chicago, Illinois, USA). Statistical significance was concluded at $p < 0.01$ and Pearson's Chi-square was used to determine correlation.

RESULTS

Out of 150 questionnaires which represent the total number of students in the basic medical sciences, 130 were correctly completed and showed a response rate of 87%. The ages of the respondents ranged from 19 to 45 years with a mean age of 26 (SD 5.2) years with 64% being males and 36% females. The gender differences in knowledge and attitudes towards STIs and condom use and risky behaviour or practices were not assessed in this study.

Table 1 shows the assessment of knowledge of STIs: 95.4% knew what STI means, 90% knew that there is a relationship between contracting STIs and HIV transmission, 79.2% were aware of the symptoms of STI such as penile/vaginal discharge, 75.4% knew that having a STI can increase the chance of contracting HIV. It was found that 18.5% of the respondents admitted to a vaginal/penile discharge following unprotected sexual intercourse in the last six months.

Table 2 shows behavioural patterns that are associated with the risk of contracting HIV/AIDS and STIs. Four per cent of the respondents indicated that they have had sex with commercial sex-workers before, while 21.5% had sex with casual partners within the last 6 months; 62 (47.7 %) were currently using the A, B, C (Abstinence, Be Faithful and correct and consistent Condomized) principle of HIV/AIDS prevention.

Table 3 shows the beliefs that are associated with condom use: 97(74.6%) believed that it protects their lives, 99 (76.6%) said it should be used at every sexual intercourse, 109 (83.8%) said it prevents the spread of HIV/AIDS, 38 (29.2%) indicated that it reduces/eradicates sexual pleasures, 114 (87.7%) were of the opinion that it prevents unwanted pregnancies, 107 (82.3%) believed that it prevents the spread of STIs, 25 (19.2%) said that it is too tight, 10 (7.7%) thought

Table 1: Knowledge of sexually transmitted infections (STIs)

Knowledge	Yes	No	Invalid Response
Do you know how STI is transmitted?	96.20% (125/130)	2.30% (3/130)	1.50% (2/130)
Do you know who are at risk of contracting STIs	92.30% (120/130)	4.60% (6/130)	3.10% (4/130)
Do you know what STI means?	95.40% (124/130)	3.80% (5/130)	0.80% (1/130)
Do you know that there is a relationship between STIs and HIV transmission?	90.00% (117/130)	7.70% (10/130)	2.30% (3/130)
Do you know that a disease with a discharge from the penis/vagina is an STI?	79.20% (103/130)	16.20% (21/130)	4.60% (6/130)
Do you know that STI's increase the chance of contracting HIV?	75.40% (98/130)	20.0% (26/130)	4.60% (6/130)

Table 2: Risky behaviour associated with HIV/AIDS and STIs

Risky Behaviour	Yes	No	Invalid Response
Do or have you had sex with commercial sex workers?	4.0% (4/130)	0.00% (0/130)	96.90% (126/130)
Do or have you had sex with casual partners?	21.50% (28/130)	0.00% (0/130)	78.50% (102/130)
Are you currently using any one or more parts of the A, B and C Principle?	47.70% (62/130)	26.90% (35/130)	25.40% (33/130)

Table 3: Knowledge, attitudes and beliefs associated with condom use

Belief	Yes	No	Invalid Response
Condom usage protects my life	74.60% (97/130)	15.40% (20/130)	10.00% (13/130)
Condom should be used at all times	76.20% (99/130)	16.90% (22/130)	6.90% (9/130)
Condom usage prevents the spread of HIV/AIDS	83.80% (109/130)	9.20% (12/130)	6.90% (9/130)
Condom usage reduces/eradicates sexual pleasure	29.20% (38/130)	55.40% (72/130)	15.40% (20/130)
Condom usage prevents unwanted pregnancies	87.70% (114/130)	6.20% (8/130)	6.20% (8/130)
Condom usage prevents the spread of STD's/STI's	82.30% (107/130)	9.20% (12/130)	8.50% (11/130)
Condoms are too tight	19.20% (25/130)	56.90% (74/130)	23.80% (31/130)
Condom usage increases the spread of HIV/AIDS	7.70% (10/130)	83.80% (109/130)	8.50% (11/130)
There is no need to use condoms; I only have one partner	24.60% (32/130)	60.00% (78/130)	15.40% (20/130)
There is no need to use condoms; I will never be involved in sex	9.20% (12/130)	72.30% (94/130)	18.50% (24/130)
I do not use condoms at all	22.30% (29/130)	64.60% (84/130)	13.10% (17/130)
Condoms should be given to prisoners	66.20% (86/130)	23.10% (30/130)	10.80% (14/130)
I do not use condoms because of religion	3.80% (5/130)	80.00% (104/130)	16.20% (21/130)
Condoms are not healthy	8.50% (11/130)	73.80% (96/130)	17.70% (23/130)

that it increases the spread of HIV/AIDS, 3 (2.3%), 32 (24.6%) saw no need to use condoms, since they had only one partner, 12 (9.2%) believed that there was no need to use condoms because they would never be involved in sexual intercourse, 29 (22.3%) do not use condoms at all, 86 (66.2%) said that it should be given to prisoners, 5 (3.8%) do not use condoms due to religious beliefs, 11 (8.5%) were of the opinion that condoms were bad for their health.

Table 4 depicts the relative correlations for condom usage. All correlations have been adjusted relative to one individual using a condom during sexual intercourse.

DISCUSSION

With the global increase in the incidence of STIs among young adults, medical students assessed in this study could be vulnerable to STIs including HIV infection. This correlates with recent epidemiological data which shows that HIV infection has been found to be common in young adults between 20–29 years of age (8). Also, the majority of students were foreigners to St Lucia, with 90% coming from the USA and Canada, and were now free from the constraints imposed on them by their normal social environment. Many of them had been found to engage in risky sexual behaviour with other students as well as with local residents as a means of relieving academic stresses and tensions. This type of behaviour has been observed among young adults coming to the Caribbean islands for studies, vacation or business trips (9–11).

In this study, the knowledge of STIs among the students is high (124/130, 95.4%), although a high level of knowledge has been shown not to necessarily indicate that young adults are willing to take precautionary measures during sexual activities (12, 13). Results indicated that 96.2% know the various routes of transmission of STIs and HIV/AIDS from one person to another which includes the outcome of unprotected sexual intercourse with an infected person. Slightly over ninety-two per cent of the respondents were aware that certain category of people such as commercial sex-workers, homosexuals and multiple heterosexual partners are at higher risk of contracting the STI/HIV. It has been shown that people with formal or high levels of education respond more accurately to general knowledge of AIDS, based on questions asked, than those with little or no formal education (14). Unfortunately, no other group of students at different educational levels were studied, therefore we could not assess the relationship between response to STIs knowledge-based questionnaires and the level of education of respondents in order to prove whether people with higher educational levels are more knowledgeable and therefore will provide more accurate information on STIs. Strong evidence exists which indicate that both ulcerative and non-ulcerative STIs in homosexual and heterosexual partners promote HIV transmission by augmenting HIV infectiousness and HIV susceptibility via a variety of biological mechanisms, thereby suggesting that the timely provision of STI preventive services can substantially reduce

Table 4: Correlations between knowledge, attitudes, beliefs and condom use

Aspect of STIs and HIV/AIDS	Individuals using condoms	Individuals with correlated aspect of HIV/AIDS
Risky behaviour	1	0.19
Knowledge of STIs & HIV/AIDS	1	1.69
STIs/HIV-associated beliefs	1	0.57
STIs/HIV/AIDS-associated medical history	1	0.32

the incidence of HIV infection (15). About 80 per cent of the respondents knew that penile/vaginal discharges following sexual intercourse were an early symptom of STI. Twenty-four respondents admitted to a history of vaginal/penile discharge in the last six months following unprotected sexual intercourse. For most STIs, the isolation rate for cases reported in the hospitals is assumed to be generally higher in females than in males however, symptoms occur earlier in males than females (16). This study did not attempt to look at the gender presentation of STIs, however in a previous study Oguntibeju and Fabode reported STIs to be higher in females than in males and also in non-condom users than in condom users (1).

The risky behaviour of some respondents was thought to possibly increase the probability of them contracting STI/HIV. In this study, four of the respondents admitted to sexual intercourse with commercial sex-workers in the last 6 months. Unregulated commercial sex-work can be regarded as one of the high risk sexual practices that increases the rate of spread of STI/HIV in heterosexual relationships (17, 18). Despite a relatively acceptable knowledge of modes of transmission and prevention methods, only a few of the participants admitted condom use. This is considered to be an indication that a relatively good knowledge about STI/HIV may not be a necessary key factor in behavioural change in combating the STIs/HIV epidemic in the study population. The ABC approach employs a population-specific intervention that emphasizes abstinence for the youth and other unmarried persons, including a delay of sexual debut, mutual faithfulness and partner reduction for sexually active adults as well as the correct and consistent use of condoms by those whose behaviour places them at risk for transmitting or becoming infected with sexually transmitted organisms (19). To reduce or prevent the spread of STI/HIV, these approaches should be adhered to.

A study done in Malaysia revealed that the major reason for condom usage among adolescents was to prevent pregnancy and not for protection against contracting sexually transmitted infections (20). It has also been found that the female condom is more effective in protecting against and reducing STI/HIV incidence (21). This correlates with the present study where it was found that the major reason (88%) for condom usage was to prevent unwanted pregnancies. Condom usage was positively correlated in those respondents who demonstrated a high level of knowledge of HIV/AIDS and STIs and lowest among those who were involved in risky behaviour such as unprotected sexual activities. A negative attitude towards condom use was seen in 3.8% of the respondents who indicated that they did not use condoms at all because of religious views. This implies that such misconceptions might in fact encourage some individuals to take risks by creating false impressions that they will be cured if they became infected with STIs including HIV. It could also lead to overconfidence and misconceptions that condom usage is not necessary for the prevention or the spread of STIs and HIV. However, strong evidence exists that indicates that religiosity among adolescents can be associated with a delayed onset of sexual activity, however religious youths did not differ from their peers in condom use, the age at which they first used condoms or the rate of partner change according to a study done in Australia (22). However the impact of religion on STI and HIV infection in this population group requires further investigation.

CONCLUSION

The knowledge of STIs is high among those students with a low prevalence rate of risky behaviour. Religion was identified to play an important role in the misconception about condom usage and possibly the transmission of STIs and HIV. It was also found that the main reason why students used condoms was to prevent unwanted pregnancies and not to protect themselves from contracting STIs and HIV.

Recommendations

* Behaviour modification courses promoting safe sexual activities should be offered at the various medical and health institutions as a means of increasing students' awareness as regards the problems associated with as well as the prevention of STIs.
* Sexuality education programmes should be encouraged at all institutions of higher learning in the Caribbean.
* Recreational activities should be promoted and encouraged at the universities as part of a stress reduction programme. Engagement in recreational activities could possibly reduce risky behaviour among the students.
* The role of religion in health education and its promotion and delivery should be looked into by various health policy-makers

Limitations of the study

The study was done in only one medical school due to logistical and financial constraints, however the findings of the study is expected to give an insight into what prevails at other medical schools in the country. The study was also limited by a paucity of literature regarding knowledge and attitudes on STIs / HIV among medical students on the island since this was the first study done in St Lucia.

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