

HIV/AIDS Knowledge and Sexual Behaviour among Junior High School Students in New Providence, Bahamas

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ABSTRACT

Objective: To determine accuracy of knowledge and sexual behaviour patterns of junior high school students in New Providence towards HIV/AIDS and identify gender variations.

Methods: A cross-sectional study with cluster sampling of classrooms was undertaken at two schools utilizing a questionnaire. SPSS was used for statistical analysis.

Results: Three hundred and fifty-four students participated in the study; the mean age was 12.25 years, 55.1% males and 44.9% females. Most (88%) students identified sexual intercourse as a mode of HIV transmission, 62.5% were accurate regarding anal sex and 32.9% were accurate about sexual intercourse in the water, as modes of HIV transmission. Abstinence was identified as a method of HIV prevention by 54.1% of students although 85.2% of students knew that condoms were a method of prevention. On beliefs regarding transmission, 21.2% believed mosquito bites and 13.1% believed toilet seats were routes for disease spread. Only 16.9% of participants reported a history of sexual intercourse; of those, 57.6% indicated that they were age ≤ 10 years when they first had intercourse. Concerning use of birth control, 64.5% of sexually experienced respondents reported never using any method.

Conclusion: Junior high school students have fairly accurate knowledge of HIV/AIDS but misconceptions regarding transmission are still prevalent; patterns in gender variation are few.

Keywords: HIV/AIDS, knowledge, junior high school, sexual behaviour, students

El Conocimiento Acerca del VIH/SIDA y el Comportamiento Sexual entre los Estudiantes de Escuela Secundaria en Nueva Providencia, Bahamas

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RESUMEN

Objetivo: Determinar la exactitud del conocimiento y los patrones de comportamiento sexual hacia el VIH/SIDA, así como identificar las variaciones de género, entre los estudiantes de escuela secundaria básica en Nueva Providencia.

Métodos: Se realizó un estudio transversal con muestreo por conglomerados de aulas en dos escuelas utilizando un cuestionario. Se utilizó el programa SPSS para el análisis estadístico.

Resultados: Trescientos cincuenta y cuatro estudiantes participaron en el estudio, de los cuales 55.1% fueron varones y 44.9% hembras. La edad promedio fue 12.25 años. La mayoría (88%) de los estudiantes identificaron las relaciones sexuales como un modo de transmisión del VIH, 62,5% fueron precisos con respecto a la transmisión por sexo anal, y 32,9% fueron precisos acerca de las relaciones sexuales en el agua, como modos de transmisión del VIH. La abstinencia fue identificada como método de prevención del VIH por 54,1% de los estudiantes, aunque 85,2% de ellos sabían que los condones son un método de prevención. Sobre las creencias con respecto a la transmisión, 21,2% creía que las picaduras de mosquitos constituían vías de propagación, en tanto que 13,1% consideraba los asientos de inodoro como rutas para la enfermedad. Sólo 16,9% de los participantes reportaron una historia de las relaciones sexuales. De ellos, 57,6% indicó que tenían ≤ 10 años de edad cuando tuvieron su primera relación sexual. Sobre el uso del control de la natalidad, 64,5% de los encuestados con experiencia sexual, reportaron no haber usado nunca ningún método.

Conclusión: *Los estudiantes de escuela secundaria tienen un conocimiento bastante preciso del VIH/SIDA, pero los conceptos erróneos acerca de la transmisión son aún frecuentes. Los patrones de variación de género son pocos.*

Palabras claves: VIH/SIDA, conocimiento, escuela secundaria básica, comportamiento sexual, estudiantes

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INTRODUCTION

The human immunodeficiency virus (HIV) pandemic remains the most serious of infectious disease challenges to public health (1). In 2008, the estimated number of persons living with HIV worldwide was 33.4 million (2). Acquired immune deficiency syndrome (AIDS) remains a leading cause of mortality worldwide and AIDS-related illnesses are projected to continue as a significant global cause of premature mortality in the coming decades (1, 2).

The Caribbean has been more heavily affected by HIV than any other region outside sub-Saharan Africa (2). AIDS was first documented in the Bahamas in 1983 and has been the leading cause of death in the 15–49-year age group since 1994 (3). Over recent years, the HIV epidemic has been stable with an overall seroprevalence rate of 3%; there are an estimated 7036 persons living with HIV in the Bahamas which has a population of 323 000 (3, 4).

AIDS is the leading cause of death among women ages 15–44 years (5). Globally, young people between 15 and 24 years of age account for half of all new cases of HIV (6, 7). Young people are engaging in sexual behaviours at earlier ages and with minimal knowledge and much misconception about HIV/AIDS and other sexually transmitted diseases (8). The aim of this study was to assess the accuracy of knowledge, and sexual behaviour patterns of junior high school students in New Providence, Bahamas, toward HIV/AIDS and identify gender variations.

SUBJECTS AND METHODS

There are more than 700 islands in the Bahamas; approximately 70% of the population lives on the island of New Providence.

A cross-sectional study was conducted during November to December 2009 at two schools among students in 7th and 8th grades in New Providence. Stratified cluster sampling of classrooms was done. All students in selected classrooms were invited to participate and consent forms issued. A structured self-administered questionnaire was used for the study. Approval was obtained from the Joint Ethics Committee of the Public Hospitals Authority and the University of the West Indies, as well as the Ministry of Education, and the principals of both schools.

The software SPSS version 17.0 was used to analyse the data, while *p*-values of ≤ 0.05 were considered statistically significant. Knowledge scores were computed by assigning a score to each knowledge-related question by coding the correct response as one and the incorrect response

as 0. Multivariate linear and logistic regression was done for more complex analyses.

RESULTS

There were 720 students in grades 7 and 8; 354 students completed the survey. Table 1 shows the sociodemographic

Table 1: Sociodemographic characteristics of the students

Parameters	Number (n = 354)	Percentage
Gender		
Males	195	55.1
Females	159	44.9
Grade level		
7	170	48.8
8	184	52.0
Age in years		
Mean (+ SD)	12.0 + 0.82	
Range	11–14	
11	66	18.7
12	150	42.5
13	118	33.4
14	19	5.4
Household occupants		
Mother	175	49.5
Father	18	5.2
Mother and father	98	27.8
Stepfather	11	3.0
Stepmother	7	2.1
Grandparents	34	9.6

characteristics of the students. Some 55.1% of students were males and 44.9% were females. There were slightly more 8th grade students (52.0%) than 7th graders (48.8%); mean age was 12 years (range 11–14 years). Some 49.5% of students lived with mother only, 27.8% lived with both parents and 9.6% lived with grandparents.

During the past month, 77.9% never used alcohol, 12.6% used it less than once weekly, 8.3% used it at least once a week, and few (1.1%) of them used it every day. Few students used cigarettes (4.8%), cocaine was rarely (0.3%) used and 14 (4.3%) students had tried marijuana (males, 6.8%, females, 1.3%; *p* = 0.02).

The majority (98.6%) of students had heard of HIV or AIDS; 39% knew there was a difference between HIV and AIDS. The most commonly cited sources of information about HIV/AIDS (between 75% and 81%) were school, parents, healthcare facilities and television. Some 61.6% of students had been exposed to HIV/AIDS programmes.

Table 2 represents the students' answers to the survey questions regarding knowledge of HIV/AIDS. Most respondents (88%) indicated that having sexual intercourse was a mode of transmission. Some 78.8% of persons indicated that hugging was not a mode of transmission although 42.6% believed that sharing meals can result in transmission. Three-fifths (60–63%) of the students knew that anal sex and

cited cure was medications (69.3%), bush medicine (18.0%) and sex with a virgin (15.5%).

The majority (83.1%) of students said they had never had sexual intercourse. Fifty-nine students (16.9%) said they had sexual intercourse: 84.7% (50) males and 15.3% (9) females. The mean age of sexually experienced respondents at their first sexual encounter was 9.65 (\pm SD 2.37) years of

Table 2: Distribution of answers regarding respondents' knowledge of HIV/AIDS

Survey questions on knowledge of HIV/AIDS	% Correct	% Incorrect	% Do not Know
Transmission			
Sexual intercourse	88.0	8.3	3.7
Mosquito bites	56.0	21.2	22.7
Breastfeeding	35.6	31.6	29.4
Sitting on toilet seat	62.8	13.1	24.1
Injections with dirty needle	75.4	12.0	12.6
Hugging	78.8	6.8	14.4
Anal sex	62.5	16.2	21.2
Sharing meals	42.6	30.7	26.8
Sex in the water	32.9	15.7	51.3
Oral sex with a female and a male	60.2	12.5	27.0
Oral sex with a female and female	30.5	25.9	43.6
Oral sex with a male and a male	45.8	16.8	37.4
Prevention			
Wait until you know partner well	68.5	18.2	13.3
Always use condom correctly	85.2	9.1	5.8
Abstinence	54.1	16.3	29.7
Have one faithful partner	57.9	20.4	21.7
You will know someone has HIV/AIDS			
By blood test	86.1	4.3	9.6
By looking at the person	56.6	18.0	25.3
If the person has a skin rash	41.7	22.4	35.8
If the person has lost a lot of weight	27.6	51.7	20.7
If the person has many partners	25.1	44.1	30.5
Healthy looking person can have HIV	83.7	8.6	7.7
Cure for HIV/AIDS	65.6	33.4	1.0

oral sex between a male and a female was a mode of transmission. There was considerable misunderstanding about the potential for mosquito transmission as just over one in five (22.7%) students were uncertain and a similar proportion (21.2%) gave incorrect responses (males, 69.4% females, 30.6%; $p \leq 0.008$). Almost one-quarter (24.1%) of students were also uncertain about toilet seats as a mode of transmission and 13.1% gave incorrect responses. As to whether HIV can be transmitted by having sex in water, only 32.9% of respondents were accurate.

Overall, just over half of the students had accurate knowledge on the various prevention methods. Most (85%) students had accurate knowledge of condom usage but just over half (54.1%) of them identified abstinence as a preventative method. The majority of respondents (86.1%) indicated that a blood test will determine if someone has HIV/AIDS.

Some 33.4% (113) of respondents believed that there was a cure for HIV/AIDS. Of that group, the most common

age. The age range was 4–13 years, with a median of 10 years of age and a mode of 12 years of age. Some 57.6% of sexually active students were ≤ 10 years of age at the time of their first sexual encounter and there were predominantly more males (91.2%).

Half (50.9%) of the sexually experienced students used a condom during their first sexual experience, 45.3% of them did not and 4.3% did not know. Regarding lifetime sexual partners, two-fifths (41.5%) of sexually active respondents said that they had one partner: females 71.4%, males 37%. Of sexually experienced students, 18.9% indicated that they had ≥ 5 partners and these were all male students. Six (11.3%) of the sexually experienced students indicated that they had been pressured into having sex and four (7.7%) of them had sex in exchange for money. When asked about the frequency of sexual activity, 61.4% said about once a month or less; 13.6% said 2–4 times a month, the same proportion said twice a week and 11.4% said three times a week or more. Regarding the use of birth control by sexually active res-

pondents, 64.5% indicated that they and their partner had never used any method, 18.8% said sometimes and 16.7% said always.

All of the students were asked to cite available methods of birth control. The most commonly cited methods of available birth control were pills (60%), condoms (55.5%), injection (26%), morning after pill (25.7%) and abstinence (21.9%). More males (66.9%) chose condoms than females [40.4%] ($p < 0.001$).

Knowledge scores ranged from 0–21 (maximum 24 points). The median was 13.00, mode 14 and mean (\pm SD) 12.65 (\pm 4.06). There was no difference in scores by gender, age, grade or prior HIV education, and no relationship between age and knowledge scores ($r = -0.09$, $p = 0.08$).

The logistic regression model that predicts having had sexual intercourse is shown in Table 3. Being male was a risk

Table 3: Logistic regression model for predicting sexual activity of respondents

Variable	Odds Ratio (OR) (\star B for OR)	95% \ddagger CI (\dagger SE of B)	<i>p</i> -value
(Constant)	0.089 (-2.418)	(0.370)	\ll 0.01
Gender	0.096 (-2.345)	0.035, 0.259 (0.508)	\ll 0.01
Grade	4.149 (1.423)	1.878, 9.163 (0.404)	$<$ 0.01
Cigarettes	35.220 (3.562)	4.136, 299.872 (1.093)	$<$ 0.01
Marijuana	22.532 (3.15)	3.006, 168.884 (1.028)	$<$ 0.01
Live with grandparents	4.345 (1.469)	1.828, 10.328 (0.442)	$<$ 0.01

Dependent variable: Ever had sex; \dagger SE = Standard Error, \ddagger CI = Confidence Interval, \star B = regression coefficient

factor and being female protective. With increasing grade, cigarette smoking and use of marijuana, there was also an increase in the risk of having had sexual intercourse. The model also supports that students who live with grandparents have higher reporting of having engaged in sexual intercourse. Table 4 displays a linear regression model that relates

Table 4: Linear regression model for predicting frequency of sexual activity of respondents

Variable	\star B (95% \ddagger CI)	\dagger SE of B	<i>p</i> -value
(Constant)	0.324 (0.195, 0.453)	0.066	\ll 0.01
Gender	-0.375 (-0.544, -0.206)	0.086	\ll 0.01
Alcohol	0.326 (0.119, 0.533)	0.105	$<$ 0.01
Cigarettes	0.528 (0.124, 0.932)	0.205	0.01
Live with grandparents	0.244 (0.020, 0.467)	0.114	0.03
$R^2 = 0.126$	Adjusted $R^2 = 0.115$		$p \ll 0.01$

Dependent variable: frequency of sex (0 = none/never, 1 = once/month, 2 = 2-4/month, 3 = 2/week, 4 = 3/week); \dagger SE = standard error, \ddagger CI = confidence interval, \star B = regression coefficient.

to predicting the frequency of sexual activity. Gender and use of alcohol were the most important predictors of the frequency of sexual intercourse.

DISCUSSION

This study revealed a high level of awareness of HIV/AIDS among participants as 98.6% of them had heard of HIV/AIDS which is comparable with other adolescents in the Caribbean (9).

The majority of participants knew that sexual intercourse was a mode of transmission but were uncertain of other modalities. Like other Caribbean communities (9, 10), there were other common myths and misconceptions about HIV transmission that were borne out in this study; 21.2% of students provided incorrect responses regarding mosquito bites and 13.1% were incorrect regarding sitting on a toilet seat.

Abstinence was recognized as a method of prevention by just over half of the respondents although it is the only method that is 100% effective against the spread of HIV; the majority of students (85%) identified proper condom usage. Regarding the use of birth control by sexually active respondents, however, 64.5% indicated that they and their partner had never used any method. The study also found that students still had misconceptions in regards to determining a person's HIV status by physical appearance. A third of students believed that there was a cure for HIV/AIDS. Of this group, almost a fifth of them indicated that bush medicine and sex with a virgin were cures. Kelly and Bain (11) reported that this myth of sex with a virgin will cure STDs, has led to the spread of infection including HIV/AIDS amongst young girls in the Caribbean even by rape.

Most of the students were not sexually active; only 16.9% of students were sexually active, predominantly males (84.7%). More than half (57.6%) of the sexually experienced students were \leq 10 years of age at their first sexual encounter, similar to findings of the World Health Organization (WHO) study on Caribbean youth (12). Hence, there is reason to be concerned about the early age of sexual activity among adolescents in New Providence. The distribution of lifetime partners was comparable to the Bahamas Youth and Health Survey (13) findings as just over 40% of sexually active students had one lifetime partner and 18.9% of students (all males) had \geq 5 partners. The regression models also reassure us that for the average student, the risk of being involved sexually is overall a low one. It does rise noticeably for those who engage in risky behaviours or for those who are in families where mother and fathers are absent. Grandparents are often unable to give adequate supervision for young adolescents (14) and this may increase the risk of sexual activity.

Concerning gender, the only statistically significant variation in the students' knowledge was found in the transmission of HIV/AIDS by mosquito bites; males (69.4%) were more inaccurate than females [30.6%] ($p = 0.008$). There were no significant differences in knowledge scores by gender. However, studies (12, 15) have demonstrated that gender specific services and information regarding HIV education are still very important for young people.

The cross-sectional study design limits data collection to a single time period, so as compared to the longitudinal design, it cannot assess changes over time. However, it provides the groundwork for implementation of a longitudinal study on youth and HIV/AIDS in The Bahamas.

CONCLUSIONS

Among students in New Providence, there was fairly accurate knowledge on HIV transmission and prevention but there is need for improvement. Most students were not sexually active although there was an early age of sexual activity mainly seen among males. There were few statistically significant variations by gender.

RECOMMENDATIONS

The promotion of abstinence and delayed sexual activity must be highlighted in HIV/AIDS programmes. A national strategy should be implemented that can assist adolescents living in single parent homes or with grandparents, in an effort to delay the onset of sexual activity. The government should focus on prevention programmes and continue to support HIV/AIDS decentralization into community clinics. Further research is needed, perhaps utilizing focus groups, which may provide additional information about behaviour patterns of young people, allowing for development of gender appropriate interventions. Nationally representative surveys should be done periodically to assess the effectiveness of education interventions.

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