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Awareness of AIDS amongst High School Students in Bonaire, Dutch Caribbean

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Abstract

Background: The Caribbean region is the second most affected region in the world in terms of rates of HIV prevalence after sub-Saharan Africa. HIV/AIDS education needs to target at the young age groups. The aim of the study was to investigate the awareness of AIDS amongst high school students in Bonaire. We hypothesized that after a thorough workshop for students (teens) in schools, they will have a better understanding of the transmission of AIDS and its prevention. *Methods:* Fifty-two students were tested by using Healthy Oakland Teens Survey, two times, initially and after conduction of workshop on AIDS for the students, in order to see efficiency of this education effort to improve knowledge of AIDS. *Results:* Knowledge of the students about AIDS significantly increased after conduction of the workshop as compared to that before the workshop. There was a decrease in the number of students stating they were uncomfortable having a conversation about the sex, AIDS and its protection with friends, parents and adults from 32% before the workshop to 26% after the workshop. Their openness for conversation about AIDS, its protection, and sex with friends, adults, and others in the social community also significantly increased after workshop as compared to that before the workshop. *Conclusion:* There is need for creating enhanced knowledge and awareness on HIV/AIDS among adolescents. It is crucial not only for protecting the students from AIDS but also for preventing the spread of HIV infection.

Keywords: AIDS; Awareness; High School Students; Bonaire.

Introduction

Acquired Immune Deficiency Syndrome or better known as AIDS is still a worldwide concern and a cure has yet to be found. AIDS has become pandemic and now is being spread throughout the world [1]. In 2014, there were 36.9 million [34.3 million–41.4 million] people living with HIV in the world; this included 280 000 [210 000–340 000] people with HIV in the Caribbean. The first Caribbean case of AIDS occurred in Jamaica in 1982 [2]. In the early days of the epidemic, more men were affected than women [2]. The Caribbean is the second most affected region in the world in terms of HIV prevalence rates after sub-Saharan Africa, the leading cause being heterosexual sex [3]. Besides Africa, the Caribbean is the only place in the world where a higher number of girls and women (than boys and men) have HIV infection [3]. Several factors influence this epidemic, including poverty, sex tourism, social vulnerability arising from poverty, illiteracy or limited education, unemployment, and gender inequality. A study conducted by CDC's Youth Risk Behavioral Survey (YRBS), revealed that many young people start having sexual intercourse at early ages; 47% of high school students have had sexual intercourses before the age of thirteen [4]. Previous research has revealed that a large percentage of adolescents are not worried about becoming infected with AIDS/HIV [4]. A study done from 2001–2004 concluded that 62% of the 17,824 persons 13–24 years of age diagnosed to have HIV/AIDS were males, and 38% were females [5]. Gender plays an important role in the spread of HIV. Young women are more likely than men to contract HIV in the Caribbean, and most of these women are

between 24–44 years old [5], Young girls in the Caribbean are at particularly high risk of becoming infected at very young age, especially by older men who are much more likely to be HIV infected than their younger counterparts. One of the factors that put women most at risk is sexual violence. In general, violence against women as well as sexual abuse of young men and children are increasing in the region. Surveys indicate that some 21% of boys and 18% of girls may have been sexually abused before they are 16 years old, and 1% of men and 6% of women are sexually abused as young adults [6].

According to Pan American Health Organization report [7] between 1985 and 2010, 2,147 persons in the former Netherlands Antilles (including Aruba, Bonaire and Curacao) tested positive for HIV, of whom 57.3% were males and 42.7%, females. Most cases were concentrated in Curacao (1,426 cases, 66.4%) and Sint Maarten (664 cases, 30.9%). Approximately 63% of HIV transmission in men was through heterosexual contact. The demographic, ethnographic and geo-climatic features of Bonaire are similar to that of other Dutch Caribbean islands with a high tourist economy as well as a high prevalence of HIV/AIDS. There are several factors that should alert on importance of HIV in Bonaire, viz. a great number of tourist visitors from Europe, North America, South America, and neighboring islands. Numerous people from Dominican Republic work in Bonaire as cleaners, bartenders, waitresses and tourist guides. These workers often offer sexual favors to tourists they meet in their work place.

There is a high level of sexual activity among the youth, as evidenced by the 22 to 32 percent of persons in six eastern Caribbean states reporting having sex before 13 years of age [8]. It is thus imperative for parents, teachers, and all concerned to educate the young generation in protecting the society from AIDS [9]. We hypothesize that after a thorough workshop with teenage students, they will have a better understanding of the transmission of AIDS and escalation and spread of this infection. We believe schools can play a leading role for reaching youth before high-risk behaviors are established.

Methods

The study included 52 participants, 29 males (55.77%) and 23 females (44.23%) from the high school. We used Healthy Oakland Teens Survey [10]. The questionnaire was done two times, initially and after conduction of workshop on AIDS for the students, in order to see efficiency of this education

effort to improve knowledge of AIDS. The entire questionnaire was explained to the student participants and all queries raised by them were clarified. The first part of survey provided demographic data: sex, age, race, with whom they live, primary language and comfort ability with English, and their sexual behavior. The second part included questions to test the knowledge of students about AIDS in terms of saying “True”, “False”, and “Don’t know”. In third part, the students were asked to state if they felt comfortable to have a conversation about AIDS, protection, and sex with friends, and others. The fourth included basic questions to determine level of understanding on how efficient are condoms to prevent HIV infection. In fifth set questions related to students and their friends’ attitude to sexuality. Sixth set dealt with students’ attitude to discuss with parents about sexuality. Seventh part was about their concern to get infected with AIDS, and finally eighth part concerned their personal opinions about wearing condoms.

This study was conducted with the permission of Bonaire Department of Health, and with clearance from the ethical and review committee of Saint James School of Medicine, Bonaire. Informed consent was obtained from each of the students.

Results

Responses to the questions about the general knowledge of the students before and after the workshop are given in Table 1, while responses to questions related to condoms before and after workshop are given in Table 2. The responses are also depicted in Figures 1-4. The results of the study are mentioned below under different subheads.

Demographic Data

The students were aged 13-18 yrs with mean age as 15.5 yrs, 55% were males and 45% females. 86% of the students were Bonairian, the rest from other nationalities. 71% had Papiamentu as their primary language, 29% had English, Spanish or Dutch as their primary language. 55% of the students lived with both parents, 32% lived with mother only, while 8% lived with father only, and 5% lived with another relative.

Behavioral Data on Sexuality

92% students had been out on dates. 78% had French kissed the dated partner; 40% have had sexual

intercourse with average age of 15 years at first intercourse, and 28% participated in sexual activity at least once a month. Only 21% used condoms during sexual act. 90% of the students have had alcohol at least once; average age of first drink being 14 yrs. 74% of the students had not yet had a conversation with their parents about sex and AIDS. 37% stated "other" as the source for knowledge of AIDS; however, they did not specify what other source was and 32% stated they heard about AIDS from siblings or teenage relatives. The data on the responses of the students on the questions 3a to 3k are depicted in Table 2.

Responses to the first set of questions on general statements about AIDS. (Students were asked to choose the option True, False, or Don't Know)

Before the workshop, on average 34% stated "Don't Know" as the answer to the first set of questions. On average 38% of the students answered at least one of the questions correctly. After the workshop, on average 8.7% stated the answer as "Don't Know". Further on average 66% of the students answered at least one question correctly. Thus there was a significant increase compared to the results prior to the workshop

In order to test if there was statistically significant difference before and after workshop, Nonparametric Wilcoxon Signed Ranks Test in statistical package SPSS was used. Statistically significant difference before and after workshops showing increase of knowledge about AIDS was found for following questions:

Question 3a: Only people who look sick can spread the AIDS virus. ($p = 0.018$; $p < 0.05$).

Question 3b: Condoms reduce the risk of getting the AIDS virus. (A condom is a piece of rubber that fits over the penis.). The higher rate of correct response after the workshop was almost statistically significant ($p = 0.054$). This means that even greater stress should be put on importance of prevention by using condoms.

Question 3e: Most people who have the AIDS virus show signs of being sick right away. ($p = 0.046$; $p < 0.05$).

Question 3f: You can get AIDS by having anal sex without a condom (By anal sex we mean putting a penis in another person's anus [butt]). ($p = 0.003$; $p < 0.01$).

Question 3g: You can get AIDS by being bitten by a mosquito that has bitten someone with AIDS. ($p = 0.007$; $p < 0.01$).

Question 3h: Only people who have sexual intercourse with gay (homosexual) people get AIDS. ($p = 0.001$; $p < 0.01$).

Question 3j: You can get AIDS by having sexual intercourse with someone who has shared drug needles. ($p = 0.000$; $p < 0.01$).

Question 3k: Birth control pills protect a woman from getting the AIDS virus. ($p = 0.000$; $p < 0.01$).

In the second set of questions students were asked to state if they can have a conversation about AIDS, protection, and sex with friends, other, and adults.

Before the workshop, 54% stated that they can have a conversation, 44% stated they could not discuss the above issue, 9% of the 44% stated they "definitely could not" have a conversation, and 32% stated they were uncomfortable discussing the issue with parents and other adults such as relatives. After the workshop greater number of students stated that they can have a conversation on the topics above i.e. 66% after workshop versus 54% before the workshop; 34% stated that they could not discuss. 7% as opposed to 9% before the workshop stated that they definitely could not talk, thus the decrease in the percent of student not being able to talk bring small. There was a decrease in the number of students stating they were uncomfortable having a conversation about the above topics with parents and adults from 32% before the workshop to 26% after the workshop.

Concern about Acquiring AIDS or Any Other Sexually Transmitted Disease

Before the workshop, 83% stated that there was no chance of them acquiring AIDS. 60% stated there was no chance of them acquiring another sexually transmitted disease, while 66% stated not being worried at all. After the workshop, 71% believed that there was no chance of acquiring AIDS as compared with 82% stating that before the workshop, this was not an expected result. 57% stated they were not worried. This shows a slight decrease in concern among teenagers compared to before the workshop.

Responses to the Basic Questions Pertaining to Condoms Such as How Protective and Efficient Condoms are were Posed to Determine Level of Understanding

Before the workshop, 32% of the students answered the questions correctly. Majority of the students answered "probably would/would not" as the answer signifying that they were not completely sure of the answers. After the workshop, 38% of the answers were answered correctly, though unexpectedly there was an increase compared to the

results before the workshop, it was, however, not statistically significant. Majority still put in “probably would/would not” as the answer. The

responses to the different questions pertaining to condoms are shown in Table 2.

Knowledge of Condoms, Average of Correct and Wrong

Table 1: Responses to questions 3a-3j about general knowledge of AIDS. Options were: True, False, Don't know

#3 (Q's on AIDS)	Before workshop		After workshop	
	Correct answer %	incorrect answer %	Correct answer %	incorrect answer %
3a. Only people who look sick can spread the AIDS virus.	31	18	51	78
3b. Condoms reduce the risk of getting the AIDS virus. (A condom is a piece of rubber that fits over the penis.	60	21	19	72
3c. A person can get the AIDS if he or she has sexual intercourse just one time without a condom.	50	34	16	61
3d. A person can get AIDS by touching or hugging someone with AIDS	56	29	15	86
3e. Most people who have the AIDS virus show signs of being sick right away.	14	82	4	30
3f. You can get AIDS by having anal sex without a condom (By anal sex we mean putting a penis in another person's anus [butt].)	54	32	14	68
3g. You can get AIDS by being bitten by a mosquito that has bitten someone with AIDS.	52	8	38	92
3h. Only people who have sexual intercourse with gay (homosexual) people get AIDS.	34	10	56	62
3i. You can get AIDS from kissing someone who has AIDS.	31	44	15	92
3j. You can get AIDS by having sexual intercourse with someone who has shared drug needles.	15	28	56	68
3k. Birth control pills protect a woman from getting the AIDS virus.	5	19	76	56

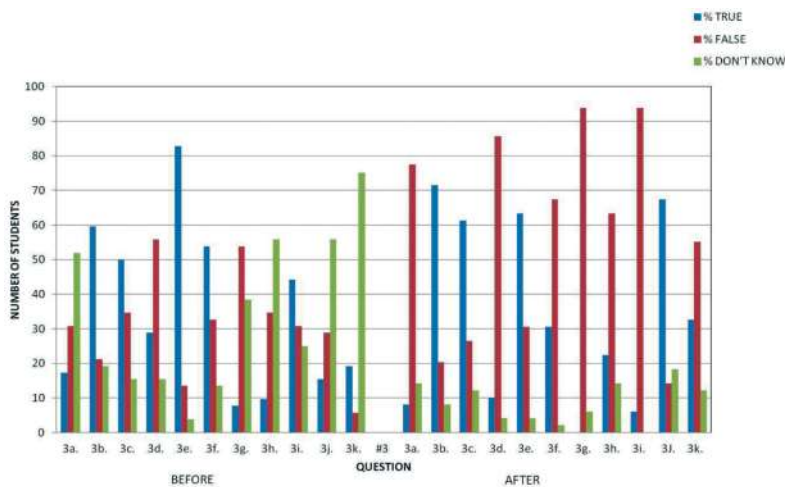


Fig. 1: Knowledge of AIDS among teens before workshop (Left side) and after workshop (right side)

Table 2: Responses to questions related to condoms before and after workshop

#12, 13, 14, 16 (Q's related to condoms)	Before: I definitely would refuse (%)	Before: I probably would refuse (%)	Before: I probably would not (%)	Before: I definitely would not (%)	After: I definitely would refuse (%)	After: I probably would refuse (%)	After: I probably would not (%)	After: I definitely would not (%)
12a. I would refuse to have sexual intercourse without c.	5.77	17.31	55.77	21.15	19.23	36.54	30.77	7.69
12b. would insist on using a condom even if my partner didn't want to.	1.92	13.46	63.46	21.15	1.92	32.69	48.08	11.54
13a. If the person I was about to have sex with suggested using condom I would feel that person cared for me	9.61	13.46	55.77	21.15	5.77	34.61	38.46	15.38
13b. If the person I was about to have sex with suggested using a condom, I would feel less worried.	17.31	23.08	32.69	26.92	28.85	32.69	23.08	9.61
13c. would respect my partner if he/she suggested condom.	5.77	36.54	32.69	25	13.46	38.46	19.23	23.08
14a. It would really bother me to stop having sexual intercourse to put on a condom.	5.77	9.61	28.85	55.77	3.85	13.46	44.23	32.69
14b. Condoms would be too much trouble to use.	7.69	13.46	21.15	59.61	7.69	17.31	28.85	40.38
14c. would not feel good to use it during sexual intercourse	0	28.85	48.08	5.77	0	28.85	48.08	5.77
14d. would is embarrassed to buy condoms.	0	17.31	25	57.69	0	13.46	28.85	51.92
16a. I'm worried about catching AIDS, so I would be sure to use a condom, even in the heat of the moment.	13.46	55.77	26.92	3.85	17.31	63.46	13.46	0
16b. If I didn't have a condom, I would have sexual intercourse anyway.	1.92	71.15	15.38	30.77	1.92	51.92	26.92	13.46
16c. I would use a condom even if I were drunk, high.	11.54	28.85	51.92	7.69	11.54	36.54	42.31	3.85

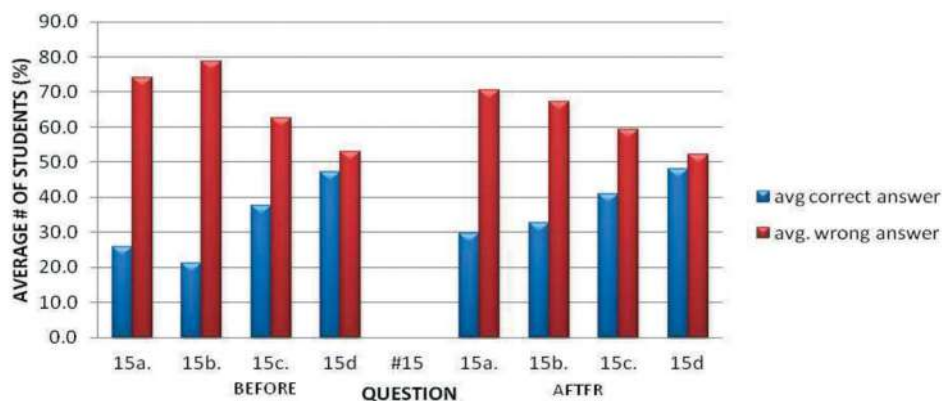


Fig. 2: Average of don't know, correct and wrong answers before and after workshop

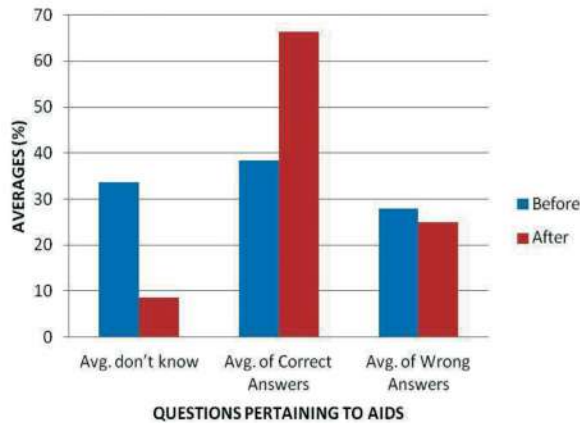


Fig. 3: Knowledge of condoms among teens before and after workshop

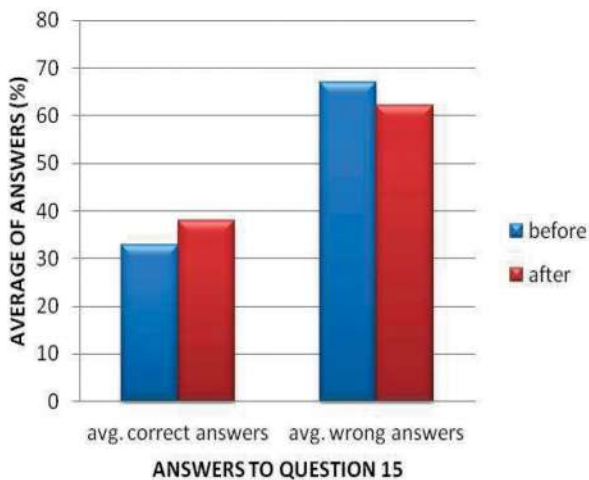


Fig. 4: Answers to Question 15 on knowledge of condoms

Answers before and after Workshop

Before the workshop, on average, 83% believed condoms would not cause trouble and that they would not be bothered by putting them on while having intercourse. 48% stated it might not “feel good” to wear a condom during sexual intercourse. After the workshop, there was a slight increase in the number of students that believed wearing condoms would cause trouble. Also there was slight increase in the number who believed it might not “feel good” to wear a condom.

Discussion

This is the first study of its kind in Bonaire and possibly also in the Dutch Caribbean. It is apparent from the results of the study that the knowledge of the school students about AIDS significantly increased after conduction of the workshop as compared to that before the workshop. Their

openness for conversation about AIDS, its protection, and sex with friends, adults, and others in the social community also significantly increased after workshop as compared to that before the workshop. It is also noteworthy that their concern about acquiring AIDS or any other sexually transmitted disease slightly decreased compared before and after workshop. A reason for vulnerability of adolescents to STDS including AIDS is the lack of sex education on HIV/AIDS [11]. Sex education in schools has been considered as a ‘social vaccine’ and it can serve as an important powerful tool for prevention of AIDS [12]. In India a wide gap was observed between the inputs on HIV/AIDS in the curriculum of sex education and its actual implementation. In a study from India [13] a significant proportion of secondary school students demonstrated adequate knowledge of modes of transmission of HIV/AIDS; 92.1% of them stated that it was transmitted through unprotected sex, and 75.8% answered from mother to child transmission. In another study from India [14], 90.7% of the students stated sexual route while 96.6% named sharing of syringes and needles as a mode of transmission. A study from Ghana [15] revealed that senior high school girl students were generally knowledgeable on the nature, modes of transmission, and prevention of among HIV/AIDS, This may be due to the educational initiative for awareness of AIDS launched by Ghana AIDS Commission and National AIDS/HIV control program over more than the past decade. It may also be mentioned that in a study from Namibia [16], 93% of university students and polytechnic students exhibited a good knowledge of HIV/AIDS, and 92% of all respondents knew the protective value of condoms against HIV infection.

In our study, knowledge of condoms as a means of protection did not increase appreciably after the educational effort. Analysis of results revealed that after the workshop, there was only a slight decrease in the number of students saying that they would “feel good” to wear a condom. The reluctance of senior high school girls to use condoms as a preventive measure has also been pointed in an earlier study of awareness of AIDS in senior high school students in Ghana [15]. An evidence-based study by Weller & Davis [17] has shown that using condoms consistently effectively reduces sexual transmission of HIV. Thus it is imperative to educate the youth in Bonaire and other islands in the Dutch Caribbean about the benefits of using condoms.

Conclusion

It is apparent from our study that creating knowledge and awareness on HIV/AIDS among adolescents in Bonaire is crucial not only in preventing the spread of HIV infection but also for addressing the threats posed by HIV/AIDS to the cause of education. In particular the wrong perception of the students regarding condoms needs to be corrected by educating them that condoms do not cause any trouble and there is nothing to feel embarrassed to wear them and they should feel comfortable.

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