

HIV/AIDS Knowledge and Sexual Behavior Among Junior Secondary School Students in South Africa

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Abstract: The aim of the study was to assess HIV/AIDS knowledge and sexual behaviour among junior Secondary School students in South Africa using a cross-sectional survey design. The sample consisted of 3150 students, with 44.1% were male and 55.9% female students. Their mean age was 15.75 yrs (SD=1.61) ranging from 13 to 24 years chosen from 150 schools in South Africa. Results indicate that 46% of the 16 year-old males and 20% of the 15.5 year-old females had already been sexually active. At first sex 63.8% of the male and 78.7% of the female students indicated that they had used a condom, but almost half (44%) of those who had had sex before had not used a condom at last sex. One quarter of the students (25.6%) indicated that they had had sex with someone much older than them (above 30 yrs), which was significantly higher among female (31.2%) than male students (22.9%) and significantly higher among non-urban (28.4%) than urban (17.2%) students. Twenty-seven percent of the students reported that they had sex for the exchange of gifts. At an average age of 15.75 years the number of self-reported lifetime sex partners was for more than half of respondents, more than one partner. Further, the study found that knowledge of HIV/AIDS was poor in some areas and more satisfactory in other areas, but generally was not satisfactory enough to sustain adequate HIV/AIDS response in a context of high and widespread HIV/AIDS prevalence. Gender, tendency to use condoms and being sexually active had no significant relationship to levels of knowledge. HIV/AIDS knowledge was significantly higher in urban than in non-urban schools.

Key words: HIV/AIDS Knowledge, Sexual Behaviour, Junior Secondary School Students, South Africa

INTRODUCTION

In 2002, according to a national household HIV seroprevalence survey conducted in South Africa, the estimated national South African HIV prevalence rates for young people, per age group were: 15 to 19 year-olds 6% (4% in males and 7% in females), 20 to 24 year-olds 13% (8% in males and 17% in females) and 25 to 29 year-olds 28% (22% in males and 32% in females) and among African/Black youth (15-24 years) 10.2%, Coloured youth 6.4%, Indian youth 0.3% and Whites (15-49 years) 6.2% [1]. Given these levels of HIV prevalence it is important that the population be adequately appraised of the risks of HIV infection and that they have correct and useful knowledge to assist them to prevent HIV infection. Clearly knowledge is only part of what is needed in developing adequate HIV/AIDS response but it is certainly a commodity that cannot be done without. It is therefore of interest to understand the status of HIV/AIDS knowledge amongst affected populations.

[2] reviewed studies conducted on HIV/AIDS knowledge among South African "youth" aged 14-35 years and found that young people are very aware that AIDS is a disease that is sexually transmitted and fatal. They were less knowledgeable about HIV and

how it is physically transmitted from one person to another, the asymptomatic carrier phase and methods for preventing HIV infection. The studies reviewed showed moderate to high levels of misconceptions about the risk of contracting HIV from casual contact with a person with HIV or AIDS, such as sharing clothes, toilet seats and eating utensils, coming into contact with saliva from coughing or spitting, dry kissing and from insect bites. They also illustrate that respondents show less knowledge when assessed with open-ended, rather than set-choice questions, suggesting low levels of spontaneous memory for AIDS information. Among mainly rural secondary school pupils in the Limpopo Province of South Africa in 1997, over 72% of the questions about AIDS were correctly answered, which at face value would suggest a fair degree of accurate information about AIDS; however, 18% were of the opinion that 'AIDS does not exist' and 19% believed that 'there is a cure for AIDS' [3]. Among junior rural secondary school pupils in the Limpopo Province 25.7% of the females responded to the question "Do condoms offer protection against HIV / AIDS ?" with "no" and 34.7% respondent to "Do condoms offer protection against sexually transmitted diseases?" with "no".

[4] reviewed studies of sexual behaviour of school students in sub-Saharan Africa. Findings indicated a relatively low number of articles when one considers the scope of the problems related to adolescent sexual behaviour in the region; high prevalence rates of sexual intercourse; infrequent use of condoms and other contraceptives; and significant proportions of adolescents who have two or more lifetime sexual partners. In a South African study it was found among rural senior secondary school pupils that about half of the sexually active (52.6% males and 40.5% females) reported never having used condoms [5]. [6] reported respondent complaints about intimidation, resistance and poor reception at the clinics when they requested condoms. [7] also did an explorative qualitative study to find out reasons for lack of condom use among high school students in Natal (South Africa). The subjects complained that condoms limited sexual pleasure indicated a lack of trust in the partner's faithfulness, challenged male ego and that condoms were perceived as associated with sexually transmitted diseases. They also complained that condom use was not sufficiently well understood and that condoms were not accessible or available when required.

We aimed to assess HIV/AIDS knowledge and sexual behaviour (including gender, age and rural/urban differences) among junior Secondary School students in South Africa.

MATERIALS AND METHODS

Design: The study is a cross-sectional survey as part of a post-intervention school survey on the distribution, use and impact of Soul City life skills materials in South Africa.

Sample and Procedure: In April 2002 6950 self-addressed letters were sent to all secondary school principals in South Africa. A deadline of two months was given for the return of the survey questionnaire, only 473 (6.8%) letters were returned. Thereafter a systematic random sample of 449 of 5977 secondary schools (excluding the 473 which had responded by letter and about 500 -mostly non-urban- schools, which did not have a telephone) were followed-up by telephonic interview. Therefore the total sample included 922 schools from which 522 indicated that they had received Soul City life skills materials and 490 had indicated that they actually covered some (50.4%), half (38.4%) and most parts (11.2%) of the students work book. From this sample of 490 schools 150 were selected considering the learner's population by province to ensure a representative sample of urban and non-urban schools (which included schools servicing informal settlements) and some over sampling of schools with higher as compared to lower exposure to the Soul

City life skills students work book [8]. Table 1 indicates the schools and students by province.

Within each participating school one class was selected that had been exposed to life skills education using Soul City materials, which were mainly students in Grade 9 (87.6%) and only a few in Grade 10 (7%), Grade 8 (4.7%) and 0.6% missing. In each class a range of 19 to 29 students (with a target of 20 for the administration of a questionnaire) were randomly selected.

The study was approved by the human ethics committee of the University of the North and all nine provincial education departments in South Africa. Consent was obtained from school principals, students in the selected classes as well as from their parents/guardians.

Questionnaires were administered in English in a classroom situation under the supervision of two trained postgraduate research assistants. All questions were read out to students in English and clarified during administration. Complete anonymity and confidentiality were assured.

The total sample consisted of 3150 students, 44.1% were male and 55.9% female students and their mean age was 15.75 yrs (SD=1.61) ranging from 13 to 24 years. This included 1730 (54.9%) from urban schools and 1420 (45.1%) from non-urban schools.

The racial distribution was African/Black (2775, 88.1%), Coloured (170, 5.4%), White (148, 4.7%) and Asian (57, 1.8%). The ethnic distribution among African/Black was Zulu (768, 24.7%), Northern Sotho (611, 19.4%), Xhosa (512, 16.3%), Tswana (331, 10.5%), Southern Sotho (318, 10.1%), Tsonga (160, 5.1%), Swazi (127, 4.0%), Ndebele (65, 2.1%), Venda (47, 1.5%), other (3, 0.1) and missing (103, 3.3%).

Measure: The questionnaire for the survey included:

- * Sociodemographic information (Grade, age, sex, race, ethnic group);
- * An 18-item Brief HIV Knowledge Questionnaire by [9] (Table 3, items 1-18). In addition, 7 locally relevant items were included after focus groups with youth and expert interviews (Table 3, items 19-25). Response options were true, false and do not know. Correct answers were coded as "1", "false" and "I do not know" as "0", which were summed up to give a composite knowledge score. Cronbach alpha for this scale in this sample was .76.
- * 8 items on sexual behaviour (items 1-3 and 6 were taken from [10] and items 4 and 5 from local cultural knowledge generated from focus groups with youth and expert interviews.

Experts included HIV educators, traditional healers and health professionals and focus group members included Junior Secondary School students. They were asked to comment on cultural beliefs on the nature and transmission of HIV.

RESULTS

Sexual Behavior: At a mean age of 15.75 yrs (SD=1.61) (boys: 16.0 yrs, SD=1.6; girls: 15.5 yrs, SD=1.5) almost one-third (31.5%) of the total sample indicated that they had had sexual intercourse. There were significantly more male (46.3%) than female (19.8%) students who had had sex before ($\chi^2=9.57$, $p<.001$) and significantly more non-urban (35.7%) than urban (27.7%) students ($\chi^2=22.14$, $p<.001$). One needs, however, to consider that non-urban students (15.93 yrs, SD=1.70) were significantly older than urban students (15.54 yrs, SD=1.47) ($t=6.57$, $p<.001$). Comparing urban and non-urban students below 17 years, 20.8% of the urban and 24.8% of the non-urban students had had sexual intercourse before ($\chi^2=4.82$, $p<.05$) and comparing below 16 year-old students, 17.1% of the urban and 18.7% of the non-urban students had sexual intercourse ($\chi^2=.69$, ns). Age was inversely related to having had sexual intercourse ($r= -.33$, $p<.001$). Table 2 indicates sexual behaviour by gender and location.

Among the sexually active group the mean age of first sexual intercourse was 14.6 years (SD=2.9). This was significantly lower among boys (14.0 yrs, SD=2.8) than among girls (15.4 yrs, SD=2.4) ($t=5.88$, $p<.001$) (median 14.5 and 15.5 years, respectively) and significantly lower among students from urban schools (M=14.1 yrs, SD=3.0) (median 14 and 15 years, respectively) than students from non-urban schools (M=14.8 yrs, SD=2.5) ($F=10.60$, $p<.001$). None of the students report having had sexual intercourse at the age of 13 years or below. Reported ages of sexual debut were 9.7% at the age of 14 years, 16.4% at 15 years, 23.6% at 16 years, 22.1% at 17 years and 26.7% at 18 years and above.

At first sex 63.8% of the male and 78.7% of the female students indicated that they had used a condom. Condom use at last sex was 56% and significantly higher among female than male students.

One quarter of the students (25.6%) indicated that they had had sex with someone much older than them (above 30 yrs), which was significantly higher among female (31.2%) than male students (22.9%) and significantly higher among non-urban (28.4%) than urban (17.2%) students. Twenty-seven percent of the students reported that they had had sex for the exchange of gifts. At an average age of 15.75 years the number of self-reported lifetime sex partners was for more than half of those who had had sex before more than one partner. Male students had significantly more sex partners during their lifetime than female students.

HIV/AIDS Knowledge: The overall mean HIV knowledge score was 12.31(SD=3.76), with a range of 0 to

25 scores. Age was inversely associated with HIV/AIDS knowledge ($r=-.07$, $p<.001$). There were no significant gender differences ($t=1.49$) and also no difference between those who had had sexual intercourse or not ($F=1.91$, ns). Students from urban schools (M=12.95, SD=3.9) had significantly better HIV/AIDS knowledge than students from non-urban schools (M=11.78, SD=3.5) ($F=78.06$, $p<.001$). White students had the highest HIV/AIDS knowledge (M=16.5, SD=4.4), followed by Asians (M=15.0, SD=3.6), Coloureds (M=13.3, SD=4.1) and African/Blacks (M=12.1, SD=3.6). Amongst the sexually active, there were no differences between HIV/AIDS knowledge and condom use at last sex ($F=.00$, ns), number of lifetime sexual partners ($F=.88$, ns) and history of having had sex in exchange for gifts ($F=2.72$). Having had sex with someone much older was inversely related with HIV/AIDS knowledge ($F=11.22$, $p<.001$). Life skills exposure was positively associated with the HIV/AIDS knowledge score ($r=.04$, $p<.05$). Table 3 indicates students' knowledge about HIV/AIDS.

Table 1: Sample of Students by Province

	No. of Schools <i>f</i>	No. of Students <i>f</i>	%
Eastern Cape	22	428	13.6
Free State	10	212	6.7
Gauteng	20	322	10.2
Limpopo	25	601	19.1
Kwa-Zulu Natal	34	731	23.2
Mpumalanga	12	265	8.4
Northern Cape	4	80	2.5
North West	11	259	8.2
Western Cape	12	242	7.7
Total	150	3150	100

Looking at particular HIV/AIDS knowledge 70% and more of the students had the correct knowledge about HIV transmission myths (sitting next to a person with HIV, sharing a glass of water with someone who has HIV or being in a swimming pool with a person with HIV) and curability (by having sex with a disabled or old woman or virgin). Twenty five percent or less knew about an HIV infection window period, that a natural skin condom does not work better against HIV than a latex condom and HIV transmission (that a person can get HIV from oral sex and that not all pregnant women infected with HIV will have babies born with AIDS). Table 4 indicates learner's knowledge about HIV by gender and location.

Table 2: Sexual Behavior by Gender and Location

Item	Male %	Female %	Total <i>f</i>	Total %	X ²	Urban <i>f</i>	Non-urban %	X ²
1. Have you ever had sexual intercourse?	46.3	19.8	914	31.5	220.66***	27.7	35.7	22.14***
2. Did you use a condom at the first sexual intercourse?	63.8	78.7	224	68.7	8.15*	58.3	63.4	2.77
3. The last time you had sexual intercourse, did you or your partner use a condom?	50.8	66.8	385	56.0	15.87***	55.2	55.7	.03
4. Did you ever have sex with someone much older than you (above 30 yrs)?	22.9	31.2	186	25.6	5.71*	17.2	28.4	20.26***
5. Have you ever had sex for the exchange of gifts?	26.4	28.3	195	27.0	.30	25.5	27.7	.71
6. During your life, with how many people have you had sex								
1 person	33.0	68.1	286	44.1	75.89***	47.5	49.9	1.18
2-3 people	33.3	20.6	190	29.3		28.6	26.9	
4-5 people	15.7	2.5	75	11.6		9.2	10.1	
6 or more people	18.0	8.8	98	15.1		14.7	13.0	

Responses to question 1 are based on all participants and responses to questions 2 to 6 are based only on those who had had sexual intercourse.

***p<.001, **p<.01, *p<.05

Male students believed more than female students that “People who have been infected with HIV quickly show serious signs of being infected” and female students believed more than male students that “Pulling out the penis before a man climaxes/cums (ejaculates) keeps a woman from getting HIV during sex”, “A person will NOT get HIV if she or he is taking antibiotics” and “One can HIV through witchcraft”.

On 18 of the 25 knowledge items non-urban students indicated significantly less correct knowledge than urban students and on one item “One can get HIV through witchcraft” surprisingly urban students had significantly less correct knowledge than non-urban students.

DISCUSSION

HIV/AIDS Knowledge: The study found that knowledge of HIV/AIDS was poor in some areas and more satisfactory in other areas, but generally was not satisfactory. Gender, tendency to use condoms and *being sexually* active had no significant relationship to levels of knowledge. HIV/AIDS knowledge was significantly higher in urban than in non-urban schools.

Younger and urban students as well as those who had not had sex with someone much older than them had significantly more HIV/AIDS knowledge than older and non-urban students and those who had sex with people 30 years older than them.

Comparing HIV knowledge with other studies is difficult since mostly other items have been used and most studies involved older age groups. In one study with a similar age group among Kenyan secondary school students (M=16.3 years) 21.9% had misconceptions of

transmission of HIV through mosquitoes as compared to 27.1% in this study (M=15.6 years) [11]. In a South African national youth survey (12-17 years) 7% agreed and 18% responded "Don't know" to the statement "Having sex with a virgin cures you of AIDS" [12]. In an older age group (15-24 years) of a national South African household sample slightly better knowledge was found than in this study, namely for "HIV can be transmitted by kissing" 75.9%, "AIDS can be caused by witchcraft" 85.3% and "AIDS can be cured by sex with a virgin" 89.2% correct knowledge as compared to 58.8, 53.9 and 69.6% , respectively, in this sample [1]. AIDS "myth" (beliefs that HIV can be spread through mosquito bites, kissing, sharing eating utensils and casual contact or cured by having sex with a virgin, disabled or old woman) were found to be held by a minority (10-25%) of students in this study, which seems conform to other studies in South Africa [2]. Although there was 50-60% understanding of the asymptomatic or healthy carrier state, some students seem to assume that there is some way to tell who has HIV/AIDS, 18% believed (21% did not know) that a healthy looking person can be infected with HIV and 25% agreed to (27% did not know) the statement that people who have been infected with HIV quickly show serious signs of being infected. Further research is needed to investigate factors that give rise to the myth of getting cured from HIV by having sex with a virgin, disabled or old women.

On eight HIV/AIDS knowledge items more than 35% of the students answered with “I don’t know”, ranging from “ a natural skin condom works better against HIV than does a latex condom” (59.7%) to “getting HIV

Table 3: Learner's Knowledge about HIV in Correct Answers in Percent and Descending Order of Frequency (bold Indicates Correct Answer)

Questions	True %	False %	Do not know %
24. One can get HIV by sitting next to a person with HIV.	6.3	87.5	6.2
2. A person can get HIV by sharing a glass of water with someone who has HIV.	13.1	77.2	9.7
16. A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.	9.8	76.3	13.9
23. Having sex with a disabled or old woman can cure HIV/AIDS.	9.1	72.7	18.2
22. Having sex with a virgin can cure HIV/AIDS.	13.1	69.6	17.3
14. Having sex with more than one partner can increase a person's chance of being infected with HIV.	64.6	17.4	18.0
11. There is a female condom that can help decrease a woman's chance of getting HIV.	63.1	13.4	23.6
19. A healthy looking person can be infected with HIV, the virus that causes AIDS.	61.0	17.9	21.0
5. Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV.	12.5	58.8	28.7
9. People are likely to get HIV by deep kissing, putting their Tongue in their partner's mouth, if their partner has HIV.	23.0	58.7	18.3
18. Using Vaseline or baby oil with condoms lowers the chance of getting HIV.	9.9	56.3	33.9
20. You can get HIV through an open cut or wound.	54.0	15.6	30.4
21. One can get HIV through witchcraft.	10.4	53.9	35.7
25. HIV can be spread by mosquitoes.	27.1	48.9	24.0
7. People who have been infected with HIV quickly show serious signs of being infected.	24.9	48.5	26.7
1. Coughing and sneezing DO NOT spread HIV.	46.4	27.0	26.6
8. There is a vaccine that can stop adults from getting HIV.	18.7	45.2	36.1
10. A woman cannot get HIV if she has sex during her period.	19.4	42.8	37.7
13. A person will NOT get HIV if she or he is taking antibiotics.	20.2	37.8	42.0
4. A woman can get HIV if she has anal sex with a man.	31.2	24.8	44.0
3. Pulling out the penis before a man climaxes/cums (ejaculates) keeps a woman from getting HIV during sex.	20.2	30.3	49.5
15. Taking a test for HIV one week after having sex will tell a person if she or he has HIV.	44.4	25.3	30.3
12. A natural skin condom works better against HIV than does a latex condom.	16.3	24.0	59.7
17. A person can get HIV from oral sex (mouth-to-penis or mouth-to-vagina).	24.0	38.3	37.7
6. All pregnant women infected with HIV will have babies born with AIDS.	63.7	22.0	14.4

Table 4: Learner's Knowledge about HIV in Correct Answers and in Percent by Gender and Location

Questions	Male	Female	X ²	Urban	Non-urban	X ²
1.Coughing and sneezing DO NOT spread HIV.	43.3	48.8	8.53**	55.5	38.9	83.85***
2.A person can get HIV by sharing a glass of water with someone who has HIV.	77.7	7.9	.07	82.7	72.7	43.71***
3.Pulling out the penis before a man climaxes/cums (ejaculates) keeps a woman from getting HIV during sex.	34.0	26.5	18.60***	33.0	28.0	8.85**
4.A woman can get HIV if she has anal sex with a man.	32.5	29.5	2.98	33.5	29.3	5.93*
5.Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV.	61.3	57.2	4.67*	61.2	56.8	6.20*
6.All pregnant women infected with HIV will have babies born with AIDS.	21.1	22.6	.98	24.4	20.0	8.47**
7.People who have been infected with HIV quickly show serious signs of being infected.	44.2	51.9	16.12***	53.1	44.6	21.41***
8.There is a vaccine that can stop adults from getting HIV.	60.8	61.4	.11	66.4	56.6	30.65***
9.People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV.	46.0	44.6	.59	43.4	46.7	3.39
10.A woman cannot get HIV if she has sex during her period.	59.3	58.8	.06	63.5	54.9	23.59***
11.There is a female condom that can help decrease a woman's chance of getting HIV.	43.5	43.9	.05	49.2	37.6	41.54***
12.A natural skin condom works better against HIV than does a latex condom.	66.1	62.3	4.35*	62.2	63.7	.73
13.A person will NOT get HIV if she or he is taking antibiotics.	29.1	20.1	30.65***	24.0	24.0	.00
14.Having sex with more than one partner can increase a person's chance of being infected with HIV.	38.0	37.9	.00	41.1	35.0	11.87***
15.Taking a test for HIV one week after having sex will tell a person if she or he has HIV.	66.2	63.1	2.81	68.8	61.1	19.84***
16.A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.	25.8	24.0	1.23	24.2	26.2	1.57
17.A person can get HIV from oral sex (mouth-to-penis or mouth-to- vagina).	75.2	78.2	3.66	80.2	73.1	21.36***
18.Using Vaseline or baby oil with condoms lowers the chance of getting HIV.	26.7	21.6	9.86**	23.6	24.3	.17
19.A healthy looking person can be infected with HIV, the virus that causes AIDS.	59.2	54.8	5.44*	56.3	56.2	.00
20.You can get HIV through an open cut or wound.	54.2	54.4	.01	56.7	51.7	7.48**
21.One can get HIV through witchcraft.	56.9	51.4	8.25**	49.0	57.8	23.64***
22.Having sex with a virgin can cure HIV/AIDS.	68.5	71.6	3.24	77.0	63.5	65.71***
23.Having sex with a disabled or old woman can cure HIV/AIDS.	70.7	73.8	3.35	76.4	69.6	17.85***
24.One can get HIV by sitting next to a person with HIV.	87.1	89.3	3.12	91.6	84.1	39.64***
25.HIV can be spread by mosquitoes.	47.4	51.4	4.39	52.1	46.2	10.27***

***p<.001, **p<.01, *p<.05

through witchcraft" (35.7%). Some of the "don't know" responses may be explained by lack of information about HIV/AIDS such as the "natural skin condom". Other "don't know" responses of the students may reflect ambivalent sources of information and attitudes such as "getting HIV through witchcraft" or "a person can get HIV from oral sex".

It is further interesting that –with some exceptions– as the frequency of correct answers are reducing on the different items of the HIV/AIDS knowledge scale they are not so much accompanied by an increase in incorrect answers but by an increase in "don't know" answers. Implications for HIV education could be that students with "don't know" items are potentially easier educable than students with incorrect answers such as "There is a vaccine that can stop adults from getting HIV".

Incorrect responses may be based on cultural and other beliefs that may need special educational efforts to change. Items with high incorrect answers included "All pregnant women infected with HIV will have babies born with AIDS"(63.7%), "Taking a test for HIV one week after having sex will tell a person if she or he has HIV"(44.4%) or "People are likely to get HIV by deep kissing if their partner has HIV" (23.0%). This lack of detailed knowledge or not knowing the exceptions of the rule may be attributed to not getting the whole information from the media or other sources of HIV information. The item on "People are likely to get HIV by deep kissing if their partner has HIV" is false because the statement emphasizes on the likelihood of transmission, while there are exceptions of transmission in case of a mouth ulcer. On various HIV knowledge items the study showed gender and rural-urban differences, which need to be considered in HIV prevention intervention programmes. For example, more male than female students believed that "People who have been infected with HIV quickly show serious signs of being infected". The quickly showing signs of HIV disease may be related to the understanding of males about other sexually transmitted disease that show more quickly signs in males than in females.

Further, more urban than non-urban students believed that "One can get HIV through witchcraft". This finding is contrary to what [13] noted that witchcraft is believed to be the causal agent in HIV transmission and AIDS in many African countries, especially among rural poor or least-educated people. However, adolescents undergoing socio-cultural change in urban contexts may increasingly recur to witchcraft beliefs [14]. AIDS education has to take into account these beliefs in personal and ultimate causes of HIV and has to stress the immediate cause of a "germ" which is sexually transmitted and discourage the belief that HIV is attributed to external or supernatural powers that go beyond the individual's responsibility or accountability of one's own behaviour.

This study found age inversely related with HIV/AIDS knowledge, which can be explained as a result of the sample selection within a single Grade. Those who are older in this Grade would be educationally disadvantaged (due to lower school performance) over the younger ones. Other studies such as in a random sample of secondary school students in the Limpopo Province (aged 17-24) found no significant effect for age [3].

Further, students from urban schools seemed to have more knowledge about HIV/AIDS than students from non-urban schools, which were also found in another South African study by Goliath in [2]. In this study White and Asian students seemed to have more knowledge about HIV/AIDS than Coloured and African/Black students. [2] reviewed that some studies in South Africa show that English speakers were better informed than other language groups.

Lower levels of HIV/AIDS knowledge among African/Black students from non-urban schools needs to be addressed. Further, this study found a relatively large incorrect and "do not know" answers on HIV/AIDS myth, which need to be addressed through clear education messaging and social-cultural influence change. Knowledge of HIV transmission was not clearly linked with sexual activities of respondents. For instance, among the sexually active there were no differences between HIV/AIDS knowledge and condom use at last sex and number of lifetime sexual partners.

Sexual Behaviour: The mean age at onset of sexual activity was in this sexually active sample among males 14.0 and among females 15.4 years (median 14.5 and 15.5, respectively); 31.5% were sexually active at the age of 15.75 years. [15] suggest that at least 50% of young people in South Africa are sexually active by age 16. In this study 46% of the 16 year-old males and 20% of the 15.5 year-old females had already been sexually active and in total 31.5%, which is almost the same (31% as found in the South African national youth survey (ages 12-17 years) [12]. In the Nelson Mandela/HSRC Study of HIV/AIDS [1] relatively low levels of sexual activity (25%) amongst 15 to 17 year-old youth were found.

According to [4] the age of 13 to 14 years is an important transition point for interventions that aim to delay the onset of sexual activity among adolescents. This study found that the onset of sexual activity was slightly lower among students from urban than from non-urban schools, while [16] found in a study among youth from different sites in South Africa that rural sites had earlier starting ages for sexual intercourse. A reason for this may be that in the latter study non-schooling youth was included who may account for the younger age of sexual debut.

This present study found that significantly more non-urban (35.7%) than urban (27.7%) students had had sexual intercourse, which is similar to the findings from the South African national youth survey, namely 34 and 26%, respectively [12].

At first sex one-third of the students in this study, especially males, indicated that they had not used a condom, almost half (44%) had not used a condom at last sex. Among older age groups in South Africa it was found that amongst 15 to 24 year-olds 57.1% of the males and 46.1% of the females indicated that they had used a condom during the last sexual intercourse [1] and among South African youth from different sites (Mean age 20.4 years) 52% indicated condom use at last sex [16].

About one quarter of the students in this study, especially among females and non-urban students indicated that they had had sex with someone much older than them (above 30 yrs) and/or had had sex for the exchange of gifts and the number of self-reported lifetime sex partners was for more than half more than one partner and for 33.7% of the boys and 11.3% of the girls 4 or more lifetime sexual partners. In the South African national youth survey (12-17 years) 20% of the boys had given and 16% of the girls had received money, drinks, food or other gifts for sex (9). [15] found in their review on South African youth that the majority of school students who had ever experienced sexual intercourse reported at the most one partner in the previous year, with a persistent minority of between 1% and 5% of females and 10-25% of males having more than four partners per year. However, in this study as well as in other African samples a large proportion of adolescents reported two or more sexual partners indicating the need for further studies addressing the sexual behaviors of adolescents still favoring on-going HIV transmission [4, 17].

Limitations: Due to the sampling bias towards exposure to life skills education and schools which had a telephone, the sample is not representative to the whole country and one should not generalize findings.

CONCLUSION

The study found that knowledge of HIV/AIDS was poor in some areas and more satisfactory in other areas, but generally was not satisfactory enough to sustain adequate HIV/AIDS response in a context of high and widespread HIV/AIDS prevalence. The lower levels of knowledge in younger youth, gender, racial and urban-non-urban differences as in this study should be addressed by AIDS education efforts. Younger samples of students or youth like the current one should be investigated in order to address their specific HIV prevention intervention needs. Further, more uniform HIV knowledge questionnaire items should be used and standardized so as to compare findings from different study populations.

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