

# Knowledge and attitude among late adolescents (16-19 years old) toward human immunodeficiency virus/acquired immune deficiency syndrome in Al-Khobar, Saudi Arabia

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## ABSTRACT

**Background:** Inadequate knowledge, negative attitude, and risky practices are major hindrances to preventing the spread of human immunodeficiency virus (HIV). **Objective:** This study aimed to assess knowledge and attitude among late adolescents (boys and girls) 16-19 years old toward HIV/acquired immune deficiency syndrome (AIDS) in Al-Khobar, Saudi Arabia. **Materials and Methods:** A cross-sectional study on unmarried adolescents (boys and girls) 16-19 years old toward HIV/AIDS was conducted in 2014 to evaluate their knowledge and attitude. Data were collected by self-filled questionnaire. We selected 400 adolescents (divided into 200 boys and 200 girls) through random sampling from different shopping malls in one province of Al-Khobar Saudi Arabia. **Results:** The majority of adolescents (39.2%) have heard about HIV through the media, but 11% answered that they never heard about it. Constituting a small percentage of male and female participants did first heard about HIV in the school. The majority of respondents think that 1/100 of people in their area is infected with HIV. Most of the participants know that HIV is a virus but 13.0% do not know. Nearly half of the adolescents do not know that “the immune system is the main system that gets the infection by HIV.” More than 60% of the adolescents do not like to test themselves for HIV if they are at high risk, and would avoid any contact with an HIV infected patient. **Conclusions:** We found lack of knowledge regarding HIV/AIDS, its transmission and means of preventing it among adolescents. Negative attitudes to HIV/AIDS and risky practices were also present. Educational programs with specific interventions are recommended to increase knowledge and attitude practices and to prevent new HIV infections among adolescents in Al-Khobar, Saudi Arabia.


**KEY WORDS:** Knowledge; Attitude; Late Adolescents; Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome; Saudi Arabia

## INTRODUCTION

WHO identifies adolescence as the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to 19 years.<sup>[1]</sup>

Many adolescents face pressures to use alcohol, cigarettes, or other drugs and to initiate sexual relationships at earlier ages, putting themselves at high risk for intentional and unintentional injuries, unintended pregnancies, and infection from sexually transmitted infections, including the human immunodeficiency virus (HIV).<sup>[1]</sup>

HIV – the infamous immunodeficiency virus, the retrovirus causing acquired immune deficiency syndrome (AIDS). Defined by the WHO as a “global health emergency,” HIV continues to take the lives of many young adult, challenging medical professions worldwide to yet find a cure for the

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irredeemable condition. AIDS is a chronic disease of the immune system characterized by increased susceptibility to opportunistic infections, cancers, and neurological disorders.<sup>[1]</sup> HIV is transmitted by three main routes: Sexual contact, blood, and vertical transmission from mother to baby.<sup>[2]</sup> The clinical picture of HIV infection can be divided into three stages: (i) An early acute stage: Which is begun in 2-4 weeks after infection, it is an influenza such as illness picture of fever, lethargy, and sore throat. This acute stage resolves spontaneously in about 2 weeks. (ii) Clinical latency stage: Asymptomatic HIV, without treatment, can last from about 3 years to over 20 years. (iii) The last stage is the immunodeficiency stage: This stage devolves within 10 years.<sup>[2]</sup>

AIDS is a worldwide disease. In 2012, there were 35.3 million persons, with AIDS, the number of new infections being about 2.5 million, of those approximately 16.8 million were women and 3.4 million were <15 years old.<sup>[3]</sup> In 2010, there were about 1.8 million deaths in persons with AIDS. Since the disease become epidemic nearly 30 million people with AIDS have died.

A cross-sectional study was conducted in 2013 about determinants of sexual health knowledge in adolescent girls in schools of Riyadh-Saudi Arabia. 419 female students belonging to intermediate and secondary schools were randomly selected from four public and private girl schools. A self-administered structured questionnaire on sexual health was used. 54% of ≤15 years and 70.7% of >15 years had poor sexual health knowledge.<sup>[4]</sup>

In Yemen in 2010, the knowledge of 501 Yemeni university students were examined about HIV and their attitudes toward people with HIV/AIDS. The findings indicated that participants had several serious misunderstandings about HIV/AIDS and held negative attitudes toward people living with HIV/AIDS. Although female students were less knowledgeable about HIV/AIDS than were male students, they held more positive attitudes toward people with HIV/AIDS.<sup>[5]</sup>

In 2008 in Iran, another study was conducted among high school student, focusing primarily on what knowledge and attitude those students have toward HIV. Knowledge and attitude were scored. The total knowledge level of 60.2% of student were found to be good, 34.1% of them were moderate and 5.7% of subject had poor knowledge levels, and the total knowledge level was not significantly different among girls and boys. Journal and books were the main information sources in girl, in boys the main information source were TV. Most respondents knew the main mode of transmission of HIV infection.<sup>[6]</sup>

This study was planned with the aim to assess the knowledge and attitude among late adolescents (boys and girls)

16-19 years old toward HIV/AIDS in Al-Khobar Saudi Arabia 2014 and objectives (i) to identify the level of the knowledge and attitude among late adolescents (boys and girls) 16-19 years old toward HIV/AIDS in Al-Khobar Saudi Arabia 2014 and (ii) to determine the differences in the knowledge and attitude between adolescent boys and girls.

## MATERIALS AND METHODS

A cross-sectional study was conducted in 2014 targeting adolescent (boys and girls) 16-19 years old in the Eastern province of Saudi Arabia (Al-Khobar) who attend the shopping malls which are Al Rashid mall, Al Dhahran mall, Foad center and Qussaibi village. Sample size was calculated using the statistic equation with 95% confidence, estimated prevalence of 0.5 which come to the total sample size around 400 students (divided into 200 boys and 200 girls) and was distributed into 4 malls mentioned above, 50 boys and 50 girls for each. The data were collected by self-filled questionnaire which is divided into three parts as shown in the attach appendix. The questions cover socio-demographic data, knowledge, and attitude. The questions were pretested in May 2014, in which 20 questioners were distributed among adolescence in same age group in selected malls. Accordingly, some modification was made to the questionnaire, and the results were not added to the final results. After filling the questionnaire and entering the data to the computer, they have been checked manually and by SPSS 20. Any coding errors, invalid codes and improper data entry were checked and corrected. The data collected were analyzed using statistical Package for Social Science (SPSS 20). A  $P < 0.05$  was considered statistically significant. Ethical approval was obtained from research/ethical committee in Arabian Gulf University (AGU) and the malls administration. Participation was voluntary, verbal adolescent consent was taken. Anonymity, privacy, and confidentiality were assured.

## RESULTS

A sample of 400 adolescent (16-19 years old) was taken, 200 (50%) were boys and 200 (50%) were girls. They were equally distributed between four malls in Alkhobar (Al-Rashid mall, Al-Dhahran mall, Foad center and Al-Qussaibi village) 50 adolescents (25%) for each. The age group selected was 16-19 years old. The majority of them were 19 years old 154 (38.5%) participants, and around 166 (41.5%) participants were from good socioeconomic status, as shown in Table 1.

### Knowledge of HIV/AIDS among Adolescent

As illustrated in Table 2, the first time the majority of adolescents (83.4%) have heard about HIV males and females constituting 37.2% and 46.2%, respectively. Moreover, the period that they heard about it was between

15 and 18 years of age. However, 16.6% answered that they never heard about it. Out of all the respondents, 19.8% of males did first heard about HIV in the school compared to 22.5% of females. Constituting a small percentage, 12.2% of males did talk with their parents about HIV, compared to 21.5% in females. The majority of respondents think that they do not have enough information regarding HIV/

AIDS, with males and females constituting 28% and 36.2%, respectively. Out of all the respondents, 70.5% know that HIV risk increase with a person having multiple sexual partners, with males and females constituting 31.5% and 39%, respectively.

However, the questions about the mode of transmissions, as shown in Table 3, show that their knowledge about what ways do they think how HIV spreads from one person to another; the majority responded by kissing (66.6%), by sexual contact (84%), by sharing needles while injecting drugs (74%) between males and females, respectively.

**Table 1:** Demographic characteristics of study population

Variable	N (%)
Gender	
Boys	200 (50)
Girls	200 (50)
Age	
16	55 (13.8)
17	73 (18.3)
18	118 (29.5)
19	154 (38.5)
Location	
Al-Rashid mall	50 (12.5) boys and 50 (12.5) girls
Al-Dhahran mall	50 (12.5) boys and 50 (12.5) girls
Foad center	50 (12.5) boys and 50 (12.5) girls
Al-Qussaibi village	50 (12.5) boys and 50 (12.5) girls
Socio economic status	
Very poor	9 (2.3)
Poor	28 (7)
Average	130 (32.5)
Good	166 (41.5)
Very good	67 (16.8)

### Attitude toward HIV among Adolescent

According to Table 4, a great number of the adolescence from males and females 63.5% answered that they do not like to test themselves for HIV/AIDS. However, 63.2% responded that they would not like to have children if they knew that they were HIV infected. Furthermore, 68% of both males and females think that they should avoid to contact anyone that is infected with HIV.

### DISCUSSION

This is a study of HIV/AIDS related knowledge and attitude among late adolescents in Al-Khobar Saudi Arabia. This study reports an average level of knowledge and attitude related to HIV/AIDS. However, misconceptions about the routes of transmission of HIV/AIDS remain. In addition, less than half of the student showed positive attitude toward HIV/AIDS.

**Table 2:** Knowledge of HIV/AIDS among adolescent

Variable	Yes N (%)		No N (%)		Not know N (%)	
	Boys	Girls	Boys	Girls	Boys	Girls
Have you heard about the HIV/AIDS?	149 (37.2)	185 (46.2)	51 (12.8)	15 (3.8)	0 (0)	0 (0)
Are there any differences between HIV and AIDS?	43 (10.8)	60 (15.0)	59 (14.8)	52 (13.0)	98 (24.5)	88 (22.0)
Have you ever talk with your parents about HIV?	49 (12.2)	86 (21.5)	151 (37.8)	114 (28.5)	0 (0)	0 (0)
Do you think there is a vaccine for HIV?	50 (12.5)	5 (1.2)	78 (19.5)	126 (31.5)	72 (18.0)	69 (17.2)
Are there any ways to protect yourself against infection of HIV?	101 (25.2)	111 (27.8)	29 (7.2)	29 (7.2)	70 (17.5)	60 (15.0)
Can you by looking at a person see if he/she is infected with HIV?	27 (6.8)	15 (3.8)	97 (24.2)	107 (26.8)	76 (19.0)	78 (19.5)
Do you know any symptoms that can be caused by HIV/AIDS?	94 (23.5)	111 (27.8)	106 (26.5)	89 (22.2)	0 (0)	0 (0)
Does any of your relatives or friends have HIV or AIDS?	20 (5.0)	14 (3.5)	180 (45.0)	186 (46.5)	0 (0)	0 (0)
Is there a medicine that can cure HIV/AIDS?	39 (9.8)	13 (3.2)	91 (22.8)	94 (23.5)	70 (17.5)	93 (23.2)
Do you think HIV is a health issue in Saudi Arabia?	99 (24.8)	90 (22.5)	101 (25.2)	110 (27.5)	0 (0)	0 (0)
Do you think HIV can be transmitted with the air?	26 (6.5)	8 (2.0)	114 (28.5)	137 (34.2)	60 (15.0)	55 (13.8)
Do you think that HIV we got it from animals?	42 (10.5)	58 (14.5)	95 (23.8)	89 (22.2)	63 (15.8)	53 (13.2)
Have you got enough information regarding HIV/AIDS?	50 (12.5)	32 (8.0)	112 (28.0)	145 (36.2)	38 (9.5)	23 (5.8)
Did your school educate you about HIV/AIDS?	79 (19.8)	90 (22.5)	121 (30.2)	110 (27.5)	0 (0)	0 (0)
Do you think the use of a condom prevents HIV/AIDS?	83 (20.8)	97 (24.2)	65 (16.2)	41 (10.2)	52 (13.0)	62 (15.5)
Do you think that if you have more than one sexual partner the risk of getting HIV will increase?	126 (31.5)	156 (39.0)	23 (5.8)	11 (2.8)	51 (12.8)	33 (8.2)

HIV: Human immunodeficiency virus, AIDS: Acquired immune deficiency syndrome

**Table 3:** Knowledge of mode of transmissions

Variable	Yes N (%)		No N (%)		Not know N (%)	
	Boys	Girls	Boys	Girls	Boys	Girls
In what ways do you think HIV is spread from one person to another?						
Eating or drinking from the same plates and cups?	65 (32.5)	81 (40.5)	85 (42.5)	59 (29.5)	50 (25.0)	60 (30.0)
Shaking hands/hugging/living in the same house?	71 (35.5)	55 (27.5)	81 (40.5)	82 (41.0)	48 (24.0)	63 (31.5)
Washing, changing clothes for someone who has HIV/AIDS?	49 (24.5)	47 (23.5)	80 (40.0)	75 (37.5)	71 (35.5)	78 (39.0)
Kissing?	102 (51.0)	148 (74.0)	49 (24.5)	25 (12.5)	49 (24.5)	27 (13.5)
Having sexual contact?	154 (77.0)	182 (91.0)	15 (7.5)	1 (0.5)	31 (15.5)	17 (8.5)
Sharing needles while injecting drugs?	122 (61.0)	174 (87.0)	30 (15.0)	5 (2.5)	48 (24.0)	21 (10.5)
Breastfeeding?	76 (38.0)	129 (64.5)	49 (24.5)	15 (7.5)	75 (37.5)	56 (28.0)
From mother to child during pregnancy or delivery?	79 (39.5)	134 (67.0)	52 (26.0)	11 (5.5)	69 (34.5)	55 (27.5)
By mosquitos?	53 (26.5)	52 (26.0)	71 (35.5)	98 (49.0)	76 (38.0)	50 (25.0)

HIV: Human immunodeficiency virus, AIDS: Acquired immune deficiency syndrome

**Table 4:** Attitude toward HIV among adolescent

Variable	Yes (%)		No (%)		Not know (%)	
	Boys	Girls	Boys	Girls	Boys	Girls
Would you like to test yourself for HIV/AIDS?	67 (16.8)	27 (6.8)	120 (30.0)	134 (33.5)	13 (3.2)	39 (9.8)
Would you like to have children if you knew you were HIV infected?	30 (7.5)	8 (2.0)	141 (35.2)	112 (28.0)	29 (7.2)	80 (20.0)
Do you think that if you have known someone infected with HIV it's better to avoid contacts?	135 (33.8)	137 (34.2)	36 (9.0)	24 (6.0)	29 (7.2)	39 (9.8)
Should a student or a teacher who has HIV be allowed to attend a school?	31 (7.8)	18 (4.5)	82 (20.5)	104 (26.0)	87 (21.8)	78 (19.5)

HIV: Human immunodeficiency virus, AIDS: Acquired immune deficiency syndrome

A good quantity of students had an acceptable knowledge about HIV/AIDS and could correctly answer questions on HIV/AIDS transmission and prevention, which indicate that students had a good basic awareness of the issue. However, females demonstrated a slightly higher level of knowledge in comparison with males, but the difference was insignificant. Respondents also did moderately well in answering questions related to main routes of HIV transmission. There was a lack of understanding about some important point of transmission of HIV such as believes that HIV can be transmitted by mosquito bites, along with shaking hands and sharing clothes. This indicates that students need more information and education about some points of routes of transmission. The majority of students did not know that the use of condoms during sexual intercourse prevent HIV. Similar findings were reported by a study conducted in Riyadh-Saudi Arabia that the students had poor sexual health knowledge.

Student displaced a negative attitude on most of the issues. This finding is not unique for Al-Khobar adolescence. Similar results were reported in several studies conducted in Yemen and Iran. The Iranian study, which was conducted in 2008 among high school students, reported that more than half of the respondents had a negative attitude toward patient with HIV and refused to interact with any HIV/AIDS positive patient, and said that they would not want to sit near patient with HIV or to shake hands with them. However, nearly half the respondents also said they were eager to show compassion

toward patient with HIV. This may be because students are empathetic toward patient with HIV. However, they still fear that having close contact with them might put them at risk of contracting HIV. This is illustrated by a reported willingness to maintain a friendship or to be taught by patient with HIV but not wanting to sit with them in the classroom. They might also believe that HIV is transmissible through items bought from an HIV-positive shopkeeper. These attitudes are important to consider when developing strategies to respond to HIV.

Discriminating attitude to patient with HIV might be an obstacle for the efficient propagation of awareness programs, and voluntary counseling and testing for HIV. Patient with HIV should be equally respected and valued in the society. Adolescents need targeted counseling about safe practices by avoiding, for example, unprotected sexual relationships and exchange of syringes/needles. Risky sexual practices were also highlighted as another barrier for HIV prevention.

In our survey, the majority of students first heard about HIV/AIDS through media about 157 (39.2%). Even if media is an effective way of spreading information, we think it is important that teenagers have the possibility to discuss and ask questions about HIV, and in the aspect will inform the parents and information in school are important parts. 60% of the adolescence would not like to test themselves and only 23.6% would accept to do the test. We do not



know the reasons for wanting or refusing to take the test. The adolescents that would not like to test themselves, do they know that they are not infected or are they afraid of getting the result? To prevent the further spread of HIV it is important that everybody know where they can have the HIV test done.

About 63.2% of the adolescents would not prefer to have children if they got infected with HIV, while 9.5% of them would like to have kids even if they were found to have the infection. It is interesting that all of those who said they are ok to have kids even if they were infected, answered in the questionnaire that HIV can be transmitted from mother to child during pregnancy or delivery and through breast feeding. One can find it is hard to understand that they want to have children even when there is a risk that the child would be infected or be an orphan.

There were several limitations to the study. First, we restricted this study to only one province and only include adolescents who attended the shopping mall. This limits that generalizability of the study finding to other provinces and to all adolescents of similar age. Second, whilst HIV knowledge is important, it may not be the primary factor in explaining HIV transmission among young people. Many people have adequate knowledge about HIV but do not act on it due to a wide variety of social, cultural, and economic constraints. Future studies that investigate all of these possible constraints could help to improve our understanding of HIV transmission. Finally because of self-administered questionnaire, social desirability bias may have occurred. However, the anonymity of the questionnaire hopefully encouraged students to be honest in their responses. Despite all of these limitations, we believe this study might be a reasonable source of information for researcher and policymakers.

## CONCLUSIONS

The surveyed adolescents had moderate knowledge and attitude about HIV/AIDS. The study highlighted some misconceptions about HIV transmission, in tolerant attitude, stigma and discrimination toward HIV, which need to be addressed. HIV/AIDS related education programs should include specific interventions to change practices, along with knowledge and attitudes specially for school children. Future research involving nationally representative samples for both males and females, school attending and out of school adolescence could contribute substantially to HIV/AIDS prevention.

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