

Research Article

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# Awareness and Knowledge of Hepatitis B and HIV/AIDS, Among the University of Kassala Students, Sudan

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## Abstract

**Background:** Hepatitis B and AIDS are major health problems worldwide. The number of infected people is liable to increase. Both diseases run chronic courses causing a financial drain of family sources. Awareness towards prevention and control of these diseases is necessary among both educated and illiterate people. This study aimed to assess the University of Kassala students' knowledge and awareness of the infectious nature of the two diseases.

**Method:** A cross-sectional study was conducted among the students of the University of Kassala, Kassala State, Sudan. The study was held from April through July 2011. Data was collected through self administered questionnaire and analyzed by using SPSS version (16.0).

**Findings:** A total of 395 students has responded to the study, and completed a questionnaire on knowledge and awareness about hepatitis B and AIDS. Among these, 185 (46.8%) were males and 210 (53.2%) were females with ages ranging from 17 to 35 years (mean: 20.45 ± 2.89). The overall study revealed that, there was a weakness in general knowledge about viral diseases (AIDS and HBV) among students. Regarding AIDS, the students were knowledgeable about the communicability, infectious nature and transmission modes, but misconception was observed about symptoms and preventive measures. Concerning HBV viral infection, the students showed poor knowledge on causative agents, mode of transmission, symptoms and prevention. A significant difference was found between the students' knowledge of AIDS and HBV concerning the routes of transmission ( $P = 0.009$ ), symptoms ( $P = 0.000$ ) and prevention measures ( $P = 0.000$ ). These findings may be attributed to absence of formal school based health education in our country which may be the main reason for the poor knowledge of viral diseases including AIDS and hepatitis B.

**Conclusion:** This study showed that the students had poor knowledge and awareness, particularly about HBV compared to AIDS. As students play a pivotal role in dissemination of knowledge and raising awareness among their families and communities, more efforts should be exerted to develop the two parameters, particularly among the students of non- medical profession in order to limit the hazardous effects of such diseases.

**Keywords:** Infectious diseases; HIV; HBV; Knowledge; Students; Sudan

**Abbreviation:** HIV: Human Immunodeficiency Virus; AIDS: Acquired Immunodeficiency Syndrome; HBV: Hepatitis B Virus

## Introduction

Hepatitis B and human immunodeficiency virus (HIV) viral infections are serious global public health problems. Worldwide, two billion people are infected with HBV, and an estimated of 370 million chronic infections, affecting 5-7% of the world's population [1]. 600,000 persons die each year due to acute or chronic consequences of HBV [2]. Forty million people are living with HIV. About two million of these died of AIDS, and 2.7 million people were newly infected with the virus worldwide [3-5]. Among the HIV- infected persons, about 4 million have chronic HBV co-infection [1]. Both AIDS and HBV shared common routes of transmission including unsafe sexual practices, blood borne transmission and sharing of infected needles or syringes [6-9].

Sudan is one of the most severely affected countries with HBV and HIV. Estimated number of people living with HIV was 260,000, most of them above the age of 15 years. The death rate due to AIDS was estimated at 12,000 [3]. There are regional variations in the prevalence of HIV infection with higher prevalence in Eastern states, Khartoum state and White Nile state [10]. The prevalence of HIV among university students in Sudan was 1.1%.

Continual transmission of these diseases could be attributed to a

bundle of reasons including: missing of opportunities for prevention, lack of awareness about their prevalence and prevention (vaccination), misdiagnosis, absence of medical care and poor health outcomes in infected people. Knowledge and awareness about the mode of transmission is important for the planning and preventive health education program. Disease control by preventive strategy is more effective than a curative one.

This study was designed to target the non medical students of the University of Kassala by assessing their knowledge and awareness towards HIV and HBV diseases.

## Methods

Cross-sectional study was conducted at the University of Kassala

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Mode of transmission of HIV		
1. Usage of contaminated sharp equipments.	291	73.7
2. Sexual intercourse	349	88.4
3. Transfusion of contaminated blood	284	71.9
4. Vertically from mother to child	253	64.1
Signs & Symptoms of HIV/ AIDS		
1. Enlargement of lymph nodes	95	24.1c
2. Sweat	80	20.3
3. General weakness	245	62.0
4. Fever	111	28.1
5. Appeared when exposed to opportunistic microorganisms	99	25.1
Prevention Methods of HIV infection		
1. Not sharing sharp equipments (razor, needle.)	230	58.2
2. Health education	284	71.9
3. Investigation of transfused blood	180	45.6
Mode of transmission of HBV		
1. Usage of contaminated sharp instruments	51	12.9
2. Sexual intercourse	35	8.9
3. Transfusion of contaminated blood	83	21
4. Vertically from mother to child	36	9.1
Signs & symptoms HBV infection		
1. Fever	88	22.3
2. Loss of appetite	155	39.2
3. Nausia	96	24.3
4. Vomiting	79	20.0
5. Jaundice	112	28.4
Prevention methods of HBV infection		
1. Vaccination	167	42.3
2. Investigation of transfused blood	107	27.1
3. Vaccination of neonate	135	34.2

**Table 1:** Knowledge of Students about the Mode of Transmission, Signs, Symptoms and Prevention of Hepatitis B and AIDS.

from April to July 2011. The study targeted 4000 students who were involved in Bachelor programs at the time of the study. Those students of non medical profession, were from the Faculties of Economics and Administrative Sciences, Computer Sciences and Technology information, and Education which has multiple departments (Biology and Chemistry, Arabic and Islamic Studies , Geography and History). Based on the students' knowledge of 50%, bound error 05% and confidence interval 95%. The sample size was 384.

To assess the students' knowledge and awareness about hepatitis B and AIDS, self administered questionnaire was used. The questionnaire comprised the infective nature of these diseases, infectious agents, mode of transmission, signs and symptoms. The other questions asked were concerned with the availability of vaccine and curability of the diseases, in addition to the preventive methods. Before the distribution of the questionnaire among 455 students, the objective of the study was explained to participants and they were informed that their participation was voluntary. Only 395 questionnaires were fully answered, The correct answers were grouped as: mode of transmission; 0-2= poor, 3=moderate and 4=good, signs and symptom; 0-2=poor and 3-4=moderate and 5=good, prevention 0-1=poor, 2=moderate, 3=good. The data were entered and analyzed using statistical package for social sciences (SPSS) version 16.0 software. Frequencies of variables were calculated and chi square.

The ethical approval of this study was received from the Research Board Committee, Ministry of Health, Kassala, Sudan.

## Results

A total of 395 students responded to the questionnaire, 185 (46.8%) were males and 210 (53.2%) were females. Their age ranged from 17 to 35 years with a mean ( $20.45 \pm 2.89$ ). The students were from different Faculties of the University. 143 (36.2%) of the students were from the Faculty of Education, 157 (39.7%) were from the Faculty of Economics and Administrative Sciences and 95 (24.1%) were from the Faculty of Computer Sciences and Information Technology.

The study revealed the weakness of general knowledge about AIDS and hepatitis B among students. However, they were more knowledgeable about AIDS. Their knowledge about the infectious nature of AIDS was 311 (78.7%), the infective agent 362 (91.6%), and the mode of transmission 272 (68.9%), but they were unaware of the symptoms and preventive measures. The symptoms and the prevention measures were well understood by only 38 (09.7%) and 133 (33.7%) respectively. 79 (20%) of the students understood that HIV had no vaccine (Table 1).

Regarding HBV, poor knowledge was found among the students of the University of Kassala. Its communicability which is significantly associated with gender ( $P=0.02$ ), was found to be 223 (56.5%), most of them were females (130/ 223) (table 2). The causes of HBV, and its vaccination were known to 110 (27.8%) and 39 (09.9%) of the students respectively. Only 49 (12.4%) of the students were aware of the symptoms of the disease and 15 (3.8%) had good knowledge of the transmission route, while the prevention methods were known to be 50 (12.7%).

A significant difference was found between the students' knowledge on HIV and HBV concerning the transmission methods ( $P=0.009$ ), signs and symptoms ( $P=0.000$ ) and prevention methods ( $P=0.000$ ). As shown in table 2 the significant difference was found associated with gender in infectious nature of HBV ( $P=0.020$ ), and its signs and symptoms ( $P=0.022$ ) and also associated with the route of transmission of AIDS ( $P=0.033$ ).

Variables	Male (185)	Female (210)	P value
HIV/AIDS			
Infectious nature of AIDS	150 (81.1%)	161(76.7%)	0.172
Causes of AIDS	169(91.4%)	193 (91.9%)	0.942
Route of transmission: poor moderate good	63 (34.1%) 18 (9.7%) 104 (56.2%)	60(28.6%) 14(06.7%) 136 (64.8%)	0.195
Signs and symptoms: poor moderate good	151(81.6%) 17 (09.2%) 17 (09.2%)	169 (80.4%) 20 (09.5%) 21 (10.0%)	0.954
Preventive methods: poor moderate good	95 (51.4%) 31(16.8%) 59 (31.9%)	102(48.6%) 34 (16.2%) 74(35.2%)	0.779
Hepatitis B			
Infectious nature	93 (50.3%)	130 (61.9)	0.020
Causative agent	49(26.5%)	61 (29.1%)	0.765
Route of transmission: poor moderate good	176(95.1%) 02 (01.1%) 07 (03.8%)	199 (94.8%) 03(01.4%) 08(03.8%)	0.953
Signs and Symptoms: poor moderate good	148(80.0%) 18 (09.7%) 19 (10.3%)	172(81.9%) 07 (03.3%) 30 (14.3%)	0.022
Preventive methods: poor moderate good	133 (71.9%) 28 (15.1%) 24 (13.0%)	151 (71.9%) 33 (15.7%) 26 (12.4%)	0.976

**Table 2:** Knowledge and awareness AIDS and hepatitis B regarding the gender of students.

## Discussion

This study showed inadequate knowledge about AIDS and hepatitis B but the students were more knowledgeable about AIDS in contrast to HBV. The students understood the communicability of HIV especially in the area of causative agents and the mode of transmission. The same finding was reported in the study held in Pakistan by Khan [11] and in Turkey by Koksall [12]. Awareness regarding HIV/AIDS transmission methods was satisfactory among students, they were aware of transmission of disease through sexual intercourse, usage of unsterile sharp equipments, transfusion of contaminated blood and vertically from mother to child. A similar result was also reported in the study held in Pakistan [13], China [14], Karachi [15], Kazakhstan [16] and Nigeria [17]. These findings may be attributable to the efforts of HIV/AIDS control program through mass media, lectures and seminars in Sudan. Inadequate knowledge about mode of transmission was reported among black students in the University of Western Cape, South Africa [18].

Regarding HBV, the study revealed that the students had poor knowledge of the infectious nature of the disease, causative agents, mode of transmission, symptoms and preventive measures. The studies which were conducted in Iran [19] and Turkey [20] reported poor knowledge on HBV which are consistent with our results. Other studies in Pakistan [13,21], and Oman [22] reported good knowledge of the disease. The findings of our study may be attributed to the absence of formal school based health education in our country which may be the most important reason for lower knowledge of viral diseases regarding HIV and HBV.

## Conclusion

This study showed that the students had poor knowledge and awareness of viral diseases. As students act as a source of knowledge with their families, more efforts will be needed to develop knowledge and awareness among students, especially for non- biological sciences students to decrease the burden of these diseases.

## Authors' contributions

Fatima A. Khalid and Amna A. Eltayeb and Noureldaim E. Elbadawi designed and initiated the study. Fatima A. Khalid performed the statistical analyses. The authors helped gather and interpret data and write the article. All authors read and approved the final manuscript.

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