

Knowledge about HIV/AIDS among Premedical Students in Misurata, Libya and the Effectiveness of a Health Education Intervention

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Abstract

Introduction: Even though anti-retroviral treatments for HIV/AIDS can slow down the course of the disease, there is no known cure or vaccine. Preventing the infection is the key aim in controlling the AIDS pandemic. A health education intervention was conducted among pre medical students in Misurata to improve their knowledge about HIV/AIDS and the effectiveness of the intervention was evaluated.

Objectives of study: To assess the knowledge of premedical students about HIV/AIDS and to evaluate the effectiveness of a health education intervention.

Method of study: An awareness study, followed by a health education intervention on HIV/AIDS was done among 160 premedical students of Misurata, Libya for a period of 4 months. Assessment of baseline knowledge was followed by a health education intervention. Effectiveness of intervention was evaluated and improvement in post test knowledge was analyzed using *t*-test.

Results: Knowledge about the cause of AIDS, incubation period, ability of disease to make its patient exposed to other infections, absence of complete cure and the presence of Preventive methods were excellent and knowledge about the ability to cause cancers, absence of an effective vaccine and 100% fatality were good on pretest evaluation. Knowledge about the modes of transmission of disease and the ways by which AIDS can not be transmitted were poor on pre-test evaluation. Knowledge about all aspects was excellent on post-test evaluation. Difference between pre and post test mean scores was found to be highly significant.

Conclusions: The health education intervention was effective.

Keywords: Knowledge about HIV/AIDS; Premedical students; Effectiveness; Health education intervention

Introduction

The human immunodeficiency virus (HIV) is a retrovirus that infects cells of the immune system, destroying or impairing their function. As the infection progresses, the immune system becomes weaker, and the person becomes more susceptible to infections. The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS) [1].

AIDS is now a pandemic [2]. An estimated 33.4 million (ranging from 31.1 to 35.8 million) people were living with HIV in 2008 globally, including 2.1 million children. An estimated 2.7 million (ranging from 2.4 to 3 million) people were newly infected in 2008, including 430,000 children less than 15 years of age [3]. As of 2009, AVERT estimated 1.8 million annual deaths due to AIDS [4].

Although treatments for AIDS and HIV can slow down the course of the disease, there is no known absolute cure or vaccine against this deadly disease. Antiretroviral treatment reduces both the mortality and the morbidity of HIV infection, but these drugs are expensive and routine access to antiretroviral medication is not available in all countries [5]. Preventing the infection is a key aim in controlling the AIDS pandemic.

Preventing the spread of human immunodeficiency virus (HIV) and sexually transmitted diseases (STD) requires a comprehensive strategy composed of high quality health care delivery systems coupled with effective, sustained and committed health education and health promotion interventions. These individual components of a prevention program must not operate in isolation, but must work together toward the well-being of the person at risk and the community as a whole [6].

An estimated 460,000 (ranging from 400,000 to 530,000) people

were living with HIV in the Middle East and North Africa at the end of 2009. The number of people newly infected has also increased over the last decade. There were 75,000 (ranging from 61,000 to 92,000) newly infected cases in 2009, more than twice the number of 36,000 (ranging from 32,000 to 42,000) in 2001. AIDS-related deaths have nearly tripled: from 8,300 in 2001 to 23,000 at the end of 2009 [7].

Exposure to contaminated drug-injecting equipments featured in the epidemics in Algeria, Egypt, Lebanon, the Libyan Arab Jamahiriya, Morocco, Oman, the Syrian Arab Republic, and Tunisia [8].

According to a national sero-prevalence study in 2004-2005 conducted by the National Center for Infectious Diseases Prevention and Control, Libya conducted among 65,000 persons, using random cluster sampling, HIV prevalence in Libya was 0.13% overall (90 cases). In 2008, the National Infectious Diseases Control Center reported that the cumulative number of HIV cases in the Libyan Arab Jamahiriya was 11,152, out of which 8,654 were Libyan nationals [9].

Information on knowledge about HIV is important in identifying and better understanding of populations most at risk for HIV. Many

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prevention programs focus on increasing people’s knowledge about sexual transmission, hoping to overcome the misconceptions that may be acting as a disincentive to behavior change toward safer behaviors [10].

University students can benefit from specific education programs that disseminate important information necessary to avoid risky behavior, and which can improve the knowledge and attitudes on preventing HIV/AIDS. So it was decided to assess the knowledge of premedical students regarding HIV/AIDS and to conduct a health education intervention program among pre medical students in Misurata aiming to improve their knowledge about HIV/AIDS.

The Objectives of Study

1. To assess the knowledge of premedical students about HIV/AIDS.
2. To evaluate the effectiveness of a health education intervention on HIV/AIDS in improving the knowledge of premedical students.

Materials and Methods

Study design

An awareness study, followed by a health education intervention on HIV/AIDS.

Study period

From 1st of April, up to 31st of July 2010.

Study population and Study setting

A total of 160 premedical students of Misurata University, Misurata, of 17 to 20 years of age were included in the study. All of the participants were undergoing one year Pre medical course before entry into the medical college. During pre medical course, they are being trained in basic subjects such as chemistry, physics, biology, mathematics, and English language.

Method of study

A questionnaire to assess awareness was prepared by the academic faculty of the department of Family and Community Medicine, Misurata University, after consulting with teaching faculty in Microbiology and Internal Medicine. Questions regarding awareness on various key areas were included in the questionnaire. Questionnaire was translated into Arabic.

Pre test

Questionnaire was distributed to students for assessing their baseline knowledge and collected back.

Health education intervention

Students were divided into 5 batches of 32 students each (160 in total), and the health education program was carried out, which consisted of 3 sessions for each batch, each of 45 minutes duration, conducted on 3 successive days. The lecture was of interactive type with specific time allotted for question and answer session. Medium of instruction was Arabic and PowerPoint slides along with charts were used as teaching aids. The talks were delivered by two intern doctors.

Post test evaluation

After a period of 3 months, a **post test** assessment was done among the same students using the same questionnaire. A lag period of 3 months was given after the health education, to assess the long term memory of the participants. After collecting back the filled questionnaire, a doubt clearance session was arranged for reinforcing the knowledge.

Inclusion criteria

A sample of 160 premedical students from a total of 200 students, who participated in all the three sessions of health education and answered both the pre intervention and the post intervention questionnaires were included in the study.

The knowledge about	Number of students who gave correct answers (Pre test)	Number of students who gave correct answers (Post test)	Improvement in knowledge (%)	P - value
the cause for aids	282 (94%)	297 (99%)	5%	0.0039
the ways by which HIV cannot be transmitted *	138 (46%)	252 (84%)	38%	<0.0001
modes of transmission of HIV **	126 (42%)	264 (88%)	46%	<0.0001
the incubation period of HIV	249 (83%)	270 (90%)	7%	0.0165
the ability of disease to make its patients exposed to other infections	285 (95%)	300 (100%)	5%	<0.0001
The ability of HIV to cause cancer	228 (76%)	264 (88%)	12%	0.0002
The absence of complete cure	282 (94%)	300 (100%)	6%	<0.0001
The fact that AIDS can be prevented	276 (92%)	282 (94%)	2%	0.4240 (not significant)
The non - availability of an effective vaccine for AIDS	231 (77%)	276 (92%)	15%	<0.0001
The fact that AIDS is 100% fatal	234 (78%)	252 (84%)	6%	0.0766 (not significant)

Post intervention knowledge showed a statistically significant improvement for 8 out of 10 questions.

*Those who answered correctly for 3 or more sub questions out of a total of 5 sub-questions were considered as correct responders. Sub-questions were as follows "HIV can be transmitted through a. sharing same glass with an AIDS patient b. sharing same food from one plate with an AIDS patient c. mosquito bite d. sitting near to an AIDS patient e. sharing same closet with an AIDS patient. **Those who answered correctly for 3 or more sub questions out of a total of five sub-questions were considered as correct responders. Sub-questions were as follows "HIV can be transmitted a. through sexual contact with the patient b. from mother to child through breastfeeding c. from mother to child at the time of birth d. by sharing of syringes and needles e. through transfusion of infected blood.

Those questions for which correct answer were given by more than 80% of responders were classified as excellent response, those for which correct answers were given by 60 – 80% were classified as a good response and those for which correct answers were given by 60% were classified as poor response

Table 1: Knowledge of pre medical students about HIV/AIDS.

Exclusion criteria

Those students who were not able to participate in all the three sessions of health education, who were not able to answer both the pre intervention and the post intervention questionnaires and who were not willing to attend the health education sessions were excluded from the study.

Ethical considerations

The research steps were explained and the permission for conducting the research was obtained from the approving authority, Faculty of medicine, Misurata University, Libya.

Method of analysis of data

Pre intervention and post intervention knowledge scores of students were analyzed using paired *t*-test using SPSS and a *p*-value of less than 0.05 was considered as statistically significant.

Results

A total of 10 Questions regarding various aspects of HIV/AIDS were asked before and after the health education intervention. Two questions were having multiple responses. Total score was 18. The percentages of correct answers were tabulated and the improvement in knowledge level following the intervention was studied (Table 1).

Assessment of baseline knowledge

Knowledge about the cause of AIDS, incubation period, ability of disease to make its patient exposed to other infections, absence of complete cure and the presence of Preventive methods were excellent on pre test assessment of knowledge (Figure 1). Knowledge about the ability of HIV to cause cancers, absence of an effective vaccine and 100% fatality of HIV/AIDS all were good on pretest evaluation. Knowledge about the modes of transmission of disease and the ways by which AIDS can not be transmitted were poor on pre-test (Figure 2).

Results of post-intervention evaluation

Knowledge about all the ten aspects of HIV/AIDS, were excellent on post-test evaluation (Figure 3). A paired *t* test was applied to know if the difference in pretest and posttest mean scores was statistically significant, (pre test mean score=10.6 and SD 1.90; post test mean score=14.3 and SD 1.4; *t*=27.1541, *df*=598, *p*<0.0001) and the difference was found to be statistically significant. This shows that the health education intervention was effective.

Discussion

In the present study, 94.8% of students were having knowledge that AIDS is caused by a virus, before the health education intervention. In a study done by Farid and Choudhry in Pakistan to assess the knowledge about HIV among college students, 61.7% of students knew that HIV is caused by germs [11]. The increased baseline knowledge among students in our study may be due to the fact that well performing students are selected for the pre medical course. In our study, 99% of students were having the knowledge about the cause of HIV/AIDS in posttest evaluation.

In the current study, only 42% of students were having knowledge about the mode of transmission of AIDS/HIV before health education. In a study done by Odusanya in Nigeria among high school students of adolescent age group, 64% were having knowledge about mode of transmission of disease [12]. This marked difference in knowledge about mode of transmission may be due to cultural and religious

restrictions that are prevalent in Libya, on spreading messages about the modes of transmission of HIV. In the present study, during post intervention evaluation, 87.6% got the knowledge about the modes of transmission of HIV/AIDS.

In our study, only 46% of students were having knowledge about ways by which AIDS can not be transmitted. A similar study done by Chen et al. among university students in China showed that 27% of students were having misconception about the ways of transmission of AIDS [13]. Poor level of knowledge about the different ways in which AIDS can not be transmitted, might be due to various cultural and religious restrictions which are prevalent in Libya, on spreading messages about AIDS and Sexually Transmitted Diseases. More health education sessions are required to remove the misconception and stigma for discussing about the modes of transmission of AIDS among the public. In post intervention evaluation, 84% got the knowledge. This finding emphasizes the need for intense health education interventions to remove the misconception regarding the modes through which HIV/AIDS can be transmitted.

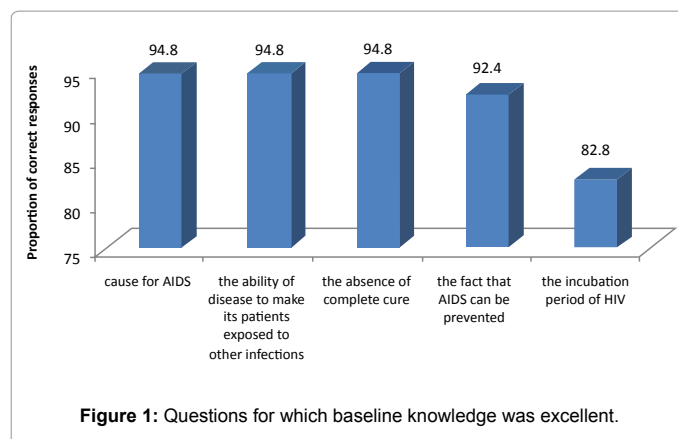


Figure 1: Questions for which baseline knowledge was excellent.

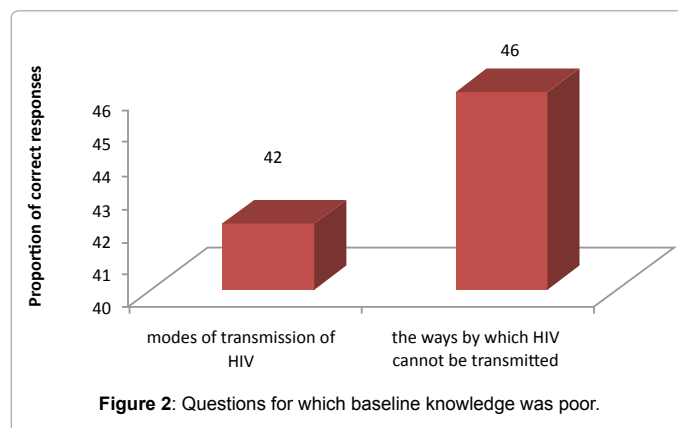


Figure 2: Questions for which baseline knowledge was poor.

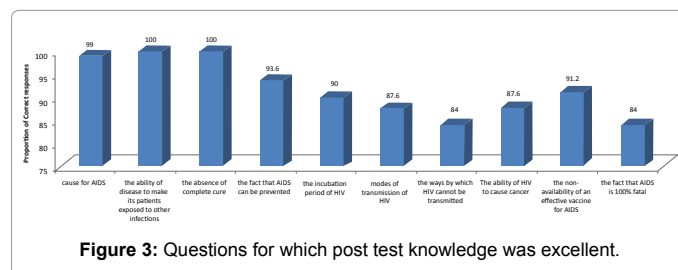


Figure 3: Questions for which post test knowledge was excellent.

In our study, 82.8% of students were having knowledge about incubation period of disease. In post intervention assessment, 90% gained the knowledge. In a study done by Al-jabri and Al-Abri in Oman 94% of medical and non medical students, who participated in the study, were aware of incubation period of HIV/AIDS [14].

In the present study, 94.8% of students were having knowledge about the ability of the disease to make its patients susceptible to other infections. All of the students (100%) got this knowledge after the health education. In a study done by Kubde et al. in Nagpur, India, 70% of nursing students knew that HIV causes loss of immunity and eventually leads to many opportunistic infections [15]. In our research, 76.8% were aware about the ability of HIV to cause cancers. A similar study done by Odusanya and Alakija in Nigeria found that 50% of secondary school students were having knowledge that there is relation between AIDS and cancer [12]. During post intervention evaluation, 87.6% of students gained this knowledge. In our study, basic education level of students was higher which might have resulted in better baseline knowledge.

This study revealed that 94.8% of students were having knowledge that there is no complete cure for AIDS before the intervention. In a study done by Ali et al. in Karachi, Pakistan among medical students in 1996, only 56% knew that there is no complete cure for AIDS [16]. After health education, all the students in our study gained the knowledge about this. This shows that knowledge level of premedical students in our study about the absence of complete cure was better.

In the current research, 92.4% of students knew that AIDS is preventable. In post-intervention assessment, 93.6% gained this knowledge. A similar study done by Al-jabri and Al-Abri in Oman, among medical and non medical students, 93% were aware that AIDS is preventable [14].

In our study, 76.8% were having knowledge about non-availability of effective vaccine for AIDS. After the health education session, 91.2% got the knowledge. In a study done by Onigbogi et al. in Kuopio, Finland the overall correct responses regarding vaccine availability for AIDS was 77% among 2nd year medical students and 70% among 5th year medical students [17]. This shows the better baseline knowledge among premedical students in Misurata, compared to Finnish medical students. In the present study, 78% of students were having knowledge that AIDS is always fatal. After health education, this knowledge was improved to 84%. In a study done by Kubde et al. [15] in India among nursing students, 31.9% thought that AIDS is not serious at all, and it's just like having a common cold [15]. Another research done in Oman, 94% of medical and non medical students who participated in the study, were aware that HIV is a life long infection and will result in

death [14]. This shows that there is a wide variation in the knowledge about the fatality of AIDS.

Conclusions

In the present study, the difference between mean knowledge scores before and after the health education intervention was found to be highly significant. This shows that the health education intervention was effective.

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