

The Role of Education in Knowledge and Attitude of Individuals towards HIV Prevention and Transmission

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Abstract

Background: Acquired Immunodeficiency Syndrome (AIDS) or acquired immunodeficiency is a type of impaired deep immune system that is often fatal because the host is infected with opportunistic infections or malignant diseases. In this study, the awareness and attitudes of soldiers in Central Provost of Islamic Republic of Iran Army for HIV/AIDS prevention were investigated.

Methods: This is a descriptive-analytic study that a combination of library study (document) and field study was applied using a scrolling technique. Data were collected by a questionnaire including awareness and attitude questionnaire and statistical analysis was performed using SPSS-22. Awareness score of Wilcoxon test and attitude score of Chi square were also used.

Results: There is a significant difference between pre-test and post-test in the context of information about AIDS. In the awareness section, there was a significant difference in the identification of the main ways of AIDS transmission. The greatest impact was determined from maternal transmission, where awareness increased from 91% to 96%.

Conclusion: The effect of health education on soldiers' awareness and attitudes toward AIDS that was in consistent with the findings of previous studies, indicating the positive effect of education in controlling and preventing AIDS.

Keywords: AIDS; Awareness; Attitude; Education; Prevention

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Introduction

Acquired Immunodeficiency Syndrome (AIDS) is a spectrum of dependent disorders that occurs due to functional impairment of cellular and humoral immune response by the human immunodeficiency virus or HIV (1). This disease is one of the most important health, social and even political problems of many countries in the 21st century (2). Today, about 50.5 million people worldwide are infected with the virus, and about 2 million people die every year from the disease (3), due to the pandemic characteristics, the high incidence among human societies, Long incubation period, and the lack of complete treatment and recovery in the third decade of its genesis (2). In the Iranian Ministry of Health report 2010, a total of 20547, 92.7% of men and 7.3% of women, where diagnosed with AIDS, where 3.4% of diagnosed cases with AIDS was aged between 15-24 years and 38.1% were 25-34 years old and 72.3% of identified cases were between 25-45 years. The causes of the disease include sterile syringes as their common device for injection (69.8%), sex (8.7%), blood and blood products (1.2%), mother-to-child transmission (0.6%) and unknown cases (19.7%), (4). In this regard, this data cannot definitely provide the true number of people infected

with HIV due to the lack of a disease registration system, and the lack of referral to support services by suspicious persons or people with high-risk behaviors. Regarding epidemiological models for the distribution of AIDS in human populations, it can be concluded that the prevention of high-risk behaviors such as unhealthy sexual activity, especially among injecting drug users in target groups, is an effective factor in reducing the incidence and deaths (5-7). Prevention of high-risk behaviors in human populations is associated with increased awareness, improved attitudes and beliefs of people about AIDS (8-11). In this regard, the World Health Organization (WHO) strongly supports the role of education in raising the level of awareness of human societies on the subject of AIDS (12). Although various behavioral surveys have been performed by governmental or non-governmental organizations in the general population against AIDS, unfortunately, limited studies on this issue have been scientifically designed in Iran. It can be noted that, in addition to the problems with the payment of educational costs, new financial and human resources should be considered to provide counseling services, mental health and appropriate treatment (3). Many support officials in most of the developing countries, including Iran, cannot implement the Comprehensive AIDS Prevention



Program as a priority in their implementing policies due to budget constraints. Although, it has always been recommended by public health officials and researchers to implement such programs (13-15). According to similar reports in most countries, unfortunately in recent years, the prevalence of high-risk behaviors such as unhealthy and uncontrollable sexual activity, the use of narcotics such as Hashishan extract of the cannabis plant, ecstasy drugs and heroin among young people, especially in adolescence has grown substantially. Nowadays, it can be said with certainty that controlling the behaviors of the younger generation in most of the developing countries, including Iran, is one of the important problems of the relevant authorities (3). Accordingly, the purpose of this study was to investigate the role of education in awareness and attitudes of people towards ways of developing the disease and the prevention of AIDS. Therefore, it is hoped that the findings of this study will be useful for designing educational programs, health management in order to encourage people to be sensitive to their health, timely diagnosis and possible optimal control.

Materials and methods

In this study, an educational booklet on AIDS was first prepared and all of the essential AIDS-related issues for soldiers were presented. Then, a questionnaire was prepared containing three sections related to personal information or birth certificate, awareness and attitude of the participants. The pre-test questionnaire was first provided to them. After answering, posters and educational materials were given. Moreover, a post-test questionnaire was provided to them. After answering, the results of two questionnaires were statically analyzed to evaluate the effect of education. In this study, a combination of library study and field study was applied using a scrolling technique. In this model, various books and references in terms of AIDS, HIV transmission and prevention were used and for measuring the thoughts and awareness of the subjects, scrolling technique or the presence of the researcher in the field was also applied. Data gathering tools were used in a library study through note taking, and a questionnaire was used in the scrolling technique. Research variables were measured in nominal and sequential scale. Questionnaire was compiled and measured in Likert. Research is a kind of pre-event, event and explanatory study (causative and explanatory). In fact, a pre-test of the subjects was performed when they were not yet exposed to the curriculum, then they participated in the training program and the secondary or post-test tests were subsequently performed and the results were consecutively examined. Due to the ease and accuracy of the work, Morgan-sample-size-table was used to determine the sample size. Regarding the Morgan table and the study population of 2000 soldiers, our sample size was determined as 169 participants.

The sampling method was a combination of systematic sampling and quota sampling methods. All the soldiers working in the central provost were placed in three age groups and given the population density of each group and the proportion of sample size; the quotas were allocated for each group and then from within the group, the subjects were selected systematically in terms of quota. The subjects were systematically selected upon use of the number of quotas from within the group.

The method of training in this study is two form.

For the training of soldiers with bachelor's degree or higher, posters and brochures were prepared. Educational lectures were conducted by an infectious disease specialist and urologist to train the soldiers with associate degrees or lower.

Statistical analysis was performed using SPSS version 22. To assess the awareness score and attitude score, Wilcoxon test and Chi-square were used, respectively. The variables were considered significant at the level of $p < 0.05$. In the questions of awareness, those who gave the correct answer scored one, and the wrong answers scored zero and the score for each person was between zero and twenty.

In the questions of awareness, the responses to the positive side received a score of 5, and the negative one scored 1, with a maximum score of 65 and a minimum score of 13.

In this study, questions related to the measurement of variables were measured using Likert scale and as follow:

(a) fully agree, (b) agree, (c) unnoticed, (d) opposed, (e) totally opposed. A fully agreeable option expresses a positive attitude or awareness, and other options represent a negative awareness or negative attitude. The aim of the current study was explained to all units studied. Initial and secondary tests were carried out with the previous planning, which is not even possible to interfere with the study hours of the units under study. All obtained information was completely confidential and was avoided from mentioning the name and surname of the subjects on the questionnaires in both the primary and secondary tests.

Results

Part I: Description of frequency based on birth certificate questions.

In order to determine the level of awareness and attitude of soldiers in Central Provost of Islamic Republic of Iran army in terms of HIV and AIDS prevention, 169 out of 2000 soldiers were randomly selected from Tehran Army. 53.2% of the soldiers Participants in the test were between 18 and 20 years old, 23.6% of people between the ages of 21 and 23, and 23% of those aged over 24 years.

53.2% of the soldiers participated in the test were between 18 and 20 years, where 23.6% of the subjected were aged between the ages of 21 and 23 years old and 23% of the people were over 24 years old. Of the 169 people, 79.2% of the participants in the single test, 17.1% were married and 3.5% were divorced. Among these, 21.7% had elementary education, 12.4% had secondary education, 38.4% had a diploma, 20.7% had Bachelor degree, and 19.5% had higher education level.

Part II: Descriptive tables of frequency based upon awareness questions. The descriptive tables of the following frequency are based on the awareness level of the participants in the initial test and post-test on having the general information about the AIDS disease, which is extracted from the study of two questionnaires.

All items in Table 1 show a significant value of less than 0.05%. There is a significant difference between the two tests, indicating the effectiveness of education in awareness.

The second group of awareness questions:

Data from soldiers' information on the main ways of transmitting AIDS, the results of which are summarized in the Table 2.

As shown in Table 2, in most cases there is a significant difference between the two tests, indicating the effectiveness of education in awareness. However, the transmission of AIDS through sexual intercourse did not show significant differences between the two tests ($P = 0.07$). Third group of awareness questions: Data collected from information about ways that HIV is not transmitted, the results of which are summarized in Table 3.



Table 1. Frequency distribution of soldiers participating in pre-test and post-test in response to the first group of awareness questions.

Awareness status Question title	Pre-test				post-test				SIG
	Right		False		Right		False		
	Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative	
The cause of AIDS	160	6/94	9	3/5	165	6/97	4	3/2	21/0
The most important of body system involved with AIDS	151	3/89	18	6/10	160	6/94	9	3/5	20/0
What is HIV	145	7/85	24	2/14	159	94	10	9/5	31/0
Stages of AIDS	124	3/73	43	4/25	158	4/93	11	5/6	48/0
Does the symptom develop immediately after infection?	147	9/86	22	13	160	6/94	9	3/5	38/0
The interval between the occurrence of symptoms and contamination	121	5/71	48	4/28	157	8/92	12	1/7	43/0
Healthy looking person infected	153	5/90	16	4/9	162	8/95	7	1/4	49/0
Can be transported immediately after contamination	142	84	27	9/15	167	8/98	2	1/1	42/0
Detection of contamination by experiment	161	2/95	8	7/4	165	6/97	4	3/2	48/0
Having definitive of AIDS treatment	148	5/87	21	4/12	161	2/95	8	7/4	32/0
Having an effective vaccine against AIDS	142	84	27	9/15	152	9/89	17	10	27/0
The most strong way to avoid AIDS	145	7/85	24	2/14	158	4/93	11	5/6	45/0

Table 2. Frequency distribution of soldiers participating in pre-test and post-test in response to the second group of questions.

Awareness status Questions	Pre-test				Post-test				SIG
	Right		False		Right		False		
	Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative	
Transmission of AIDS from Sex	165	6/97	4	3/2	167	8/98	2	1/1	78/0
Transmission of blood products	161	2/95	8	7/4	165	6/97	4	3/2	38/0
Transfer from infected syringe and syringe	164	97	5	9/2	167	8/98	2	1/1	43/0
Transmission from an infected mother to the fetus	155	7/91	14	2/8	163	4/96	6	5/3	47/0
Transmission through a common toothbrush	150	7/88	19	2/11	159	94	10	9/5	42/0
Transmission through contaminated razor blade	161	2/95	8	7/94	165	6/97	4	3/2	44/0
Transmission of contaminated dental supplies	154	1/91	15	8/8	160	6/94	9	3/5	32/0
Transmission of tattoos with contaminated equipment	155	7/91	14	2/8	163	4/96	6	5/3	27/0

Table 3. Frequency of soldiers participating in pre-test and post-test in response to the third group of questions.

Awareness status Questions	Pre-test				Post-test				SIG
	Right		False		Right		False		
	Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative	
Insect bites	121	5/71	48	5/28	165	6/97	4	4/2	21/0
Swimming pool	134	2/79	35	8/20	166	2/98	3	8/1	20/0
Sneezing and coughing	131	5/77	58	5/22	163	4/96	6	6/3	31/0
Touch	122	1/72	47	9/27	159	94	10	6	48/0
Public transportation	154	1/91	15	9/8	158	4/93	11	6/6	38/0
Common dishes	135	8/79	34	2/20	167	8/98	2	2/1	43/0
Blankets and blankets	127	1/75	36	9/24	163	4/96	6	6/3	50/0
Public phone	154	1/91	15	9/8	164	97	5	3	42/0
Normal social relationships	165	6/97	4	4/2	162	8/95	7	2/4	34/0
Sick person's clothes	143	6/84	26	4/15	164	97	5	3	32/0
Handshake and hug	154	1/91	15	9/8	166	2/98	3	8/1	27/0

In all items related to the table, there was a significant difference between the two tests (All $P < 0.05$), where the effectiveness of the training was informative.

Part III: Data collected from attitudes

Finally, the effect of training on soldiers' attitude and awareness was examined, the data are reported as median and IQR and analyzed by Wilcoxon statistical analysis. The attitude score of the subjects was before training (9) 48 and after education (2) 58, which showed statistically a significant increase in attitude (Table 3). Furthermore,

the awareness score of the subjects was determined to be from (2) 17 to (2) 18, which was statistically significant ($p < 0.05$).

Discussion

AIDS is considered to be the most dangerous sexually transmitted disease in the world, whereas the fourth leading cause of death from infectious diseases worldwide. Moreover, it is known to be one of the major barriers to economic growth in poor countries. Prevention of HIV infection should always be considered as one of the important responsibilities of specialists in infectious diseases and public health.



Unfortunately, in most developing countries, due to the lack of reliable information, there have been always problem with identifying the factors that are effective in the dynamics of the disease and its changes over time, which is likely to be high in such societies (17). Regarding available data, HIV infection in Iran is mainly limited to injecting drug users. However, the important thing is that, unfortunately, the disease is spreading through sexual contact or unknown ways.

Therefore, the establishment of comprehensive and targeted approaches for preventing the disease is needed for high-risk groups in society. It is recommended that AIDS prevention program for high-risk groups should begin as soon as possible in Iran based upon proposed control programs in similar communities (18). Soldiers are an important target group for conducting an HIV education program. Given the changes that are being made in most countries, especially Iran, soldiers often have a history of high-risk behaviors in the past, so that they can put them at risk for AIDS. Therefore, it can be said with certainty that the incidence of AIDS in these individuals can be constantly rising. In the present study, the results of the 12 questions did not show a fairly clear difference in post-test and pre-test interventions, suggesting that soldiers have found good and widespread information on AIDS with the advancement and availability of the media and the Internet. Ayranci (2005) in an epidemiological study in Turkey assessed the participants' knowledge fairly well, and found that the attitudes of the subjects toward AIDS patients and their community support were relatively positive (19). In the second part, awareness questions about the main ways of AIDS transmission included eight questions. In this group, there were significant differences in questions after the training with pamphlets. Given the project's mission, which identifies the main ways of transmission of AIDS, the results indicate success of study. Most of the studies conducted in the world have also reported such results. In Saudi Arabia, it has been shown that the implementation of interventions based upon AIDS education for individuals can significantly improve risk behaviors (20). Another study in Japan showed that the training was generally effective in increasing awareness of AIDS (21). Among the questions, the greatest impact of education was related to the congenital transmission question "mother-to-fetus transmission of AIDS", which represented 91% of the correct answers before training, where it was increased to 96% of the correct post-training response. In Nepal, it has also been shown that there is a significant difference in the level of awareness of the participants in the study before and after a short-term training course on AIDS that is consistent with our current study (22). Recent studies have shown that safe environments are an integral part of prevention programs, and in addition to appropriate economic and cultural conditions, accessing to health services is also required (23). On the other hand, informing alone does not seem to be sufficient, but it has to create the power of struggle in critical situations in people by providing life skills training (24). In other developing countries such as Nepal, a study has been designed to examine the impact of education on the level of awareness, attitudes, beliefs and individual-level performance in Nepal's Katmandu City, which clearly shows a significant similarity between awareness and individual-level performance in the country. This is very different from what has been seen in developed countries (13). These findings suggest that, in addition to other factors, similarities or cultural differences can contribute to such differences, and more effort is needed to address the role of education in preventing AIDS in developing countries. In the third section, with regard to the ways of non-transferability, the impact of training clearly was seen in this set of questions. The importance of the issue is that identifying ways of non-transmissible AIDS can reduce the stress of soldiers. As a result,

the impact of education on changing the attitude of the investigated community about AIDS is clear, where there is a significant difference after the training.

Conclusion

In summary, the results of our study showed the effect of health education on soldiers' awareness and attitude toward AIDS, which was in line with the findings of previous studies. Regarding the cultural and social conditions of the community, plans should be performed at national level to increase awareness of individuals, in particular prevention programs.

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