



Assessing AIDS Knowledge among Health Volunteers and Women by 44-item AIDS Awareness Assessment Tool in Zanjan

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ABSTRACT

Background: Considering the accelerating rate of HIV / AIDS during recent years in Iran, it is extremely important to assess the AIDS awareness among people to design appropriate health education programs. This study aimed to evaluate AIDS awareness of health volunteers and the women covered by Zanjan health centers.

Methods: This was descriptive cross-sectional study that carried out in 2019. The population consisted of all married health volunteers (205) and the women (198) covered by Zanjan health centers. The target population was selected by purposive sampling method. A valid and native researcher-made questionnaire was used to collect the required data. The data was analyzed by SPSS (version 16) software.

Results: Both studied groups were homogenous in terms of age, education, and marital status. The findings showed that the health volunteers' AIDS awareness was higher (70%) than that of the women. The difference was statistically significant.

Conclusion: Although the health volunteers' awareness of AIDS was higher than that of the women, considering their role and participation in the education of people, this level of awareness is not acceptable.

1. Introduction

Since the outbreak of AIDS, millions of people have died as a result of this diseases around the world, regardless of their age, gender, race, culture, and socioeconomic status [1]. AIDS has been associated with complex and controversial socio-economic consequences [2]. According to UNAIDS reports, 5,000 new infections are detected daily in the world; 43% occurs in women and 37% in young people aged 15-24 years [3].

United Nations Programme on HIV/AIDS (UNAIDS) report (2017) acknowledges that the detection rate of new infections is increasingly more in Iran than Middle East countries [3, 4]. During 1986- 2018, 38474 people with HIV / AIDS have been detected; 84% male, 16% female, and 53% in age group of 21-35 years. More than 13,614 individuals have died and more than 60% are unaware of their disease [5]. During the first six months of 2018, unfortunately, the proportion of female patients has increased to 31% and the



proportion of sexually transmitted infections has increased to 40% [5].

The fact is that AIDS is not an illness or a medical problem; it is a complex biological, behavioral, and social phenomenon. Therefore, a complex strategy besides a comprehensive and effective approach with a focus on primary prevention and health education is required to tackle it [2, 6]. In addition, designing health education programs to raise the public awareness is an important step in eradicating AIDS [6].

Research suggests that it is important to be well-informed about the infection transmission and prevention ways of HIV. Furthermore, it is of high importance to reform AIDS-related health beliefs, and encourage young people to have healthy behaviors [2, 6-9]. In many countries, however, the young people and adolescents have low awareness; in developing countries, less than one-third of men and less than one-fifth of young women have such knowledge [9]. According to UN report, about 18.3% of Iranian people aged 15-24 years old have sufficient knowledge about AIDS [3]; this is well below the level (95%) determined by UN General Assembly in 2001 to reach by 2010 [9].

Despite many studies conducted in Iran to assess educational needs and to determine the level of knowledge and health beliefs of people about AIDS [13-22], lack of an indigenous tool tailored to Iranian people characteristics and social values is criticized as a significant issue [10, 11]. Moreover, using different tools challenges the capability to compare and interpret the results of studies on diverse or homogeneous populations.

In Iranian health care system, a group of women work as health volunteers to provide health information and health education to people. Obviously, this mission requires adequate knowledge and skills in health matters and essential skills and confidence in transferring such knowledge to people. Furthermore, people should accept such role from health volunteers. Considering the lack of such studies in Iran, the current study uses a valid tool based on Iranian social-cultural values to assess and compare the awareness of the health volunteers and a sample of people covered by Zanjan health centers. Moreover, it aims to determine the acceptance of their educational role by people. The tool is designed and psychoanalyzed by Vakili *et al.* (2018) [12].

2. Materials and Methods

This was descriptive-comparative and cross-sectional study. The population consisted of the health volunteers and women covered by Zanjan health centers. Purposive sampling method was used to select samples among women; each participant was asked to choose another woman according to her age and education. Overall, 205 health volunteers and 198 women were selected. The inclusion

criteria included marital status, possessing at least third-grade middle school education level, good physical and mental health, and willingness to participate in the study. The total sampling method was used for selecting the sample from among health volunteers; all eligible health volunteers were included in study.

In this study a researcher-made questionnaire was used to collect the required data. It consisted of three parts: the first part demographic information, the second part information resources, and the third part was a 44-item AIDS Awareness Questionnaire validated and developed by Vakili *et al.* (2018) [12]. In addition, its reliability and validity was confirmed. The questionnaire consisted of three components. AIDS awareness included 9 items, transmission ways comprised of 25 items, and prevention ways consisted of 10 items; each item was rated on a three-point Likert scale ranging from 1 (correct), 2 (incorrect), and 3 (not sure). For items 1-3 (AIDS awareness), the answers were set to five options. The minimum and maximum total scores varied from 0 to 44. The HIV/AIDS awareness was qualitatively categorized into three groups: weak (14 items and less), average (15-30 items), and good (31 items and more, at least 70% correct answers). The questionnaires were distributed among participants and the data was analyzed. The descriptive statistics (mean and standard deviation) and inferential statistics (chi-square, independent t-test, and Pearson correlation coefficient) were used for data analysis by SPSS v.16 software. Moreover, Kolmogorov-Smirnov test was used to confirm the normality of data distribution. This study was approved by Research Council at Zanjan University of Medical Sciences; the ethics code is ZUMS.REC.1396.269.

3. Results and Discussion

In this cross-sectional study, 403 participants including 205 health volunteers and 198 women covered by Zanjan health centers completed the questionnaire. The findings indicated that both groups were mostly 25-34 years old age group (43%); mean \pm SD age of the health volunteers and the women was between 37.08 ± 9.45 years and 33.00 ± 8.79 years old, respectively. Moreover, the minimum and maximum age was 15 and 54 years old. In terms of education, the highest proportion in both groups had diploma degree (40%) and the lowest proportion had university education (19%). In addition, 80% of them were housewives. The results of chi-square test showed that there was no significant difference between two groups in terms of age, education, and occupation. The question "Have you ever been trained on AIDS before?" was answered "yes" mostly by the health volunteers than the women. Both groups cited TV as the first and the family members as the latest source of information. However, about 90% of health volunteers and more than 80% of the women were strongly agreed to obtain more information about AIDS; more than 60% of participants in both groups preferred a physician as a trainer (Table 1).

Table 1: Frequency distribution of AIDS awareness resources among health volunteers and the women in Zanjan health centers (Zanjan-2019)

Education status	Health volunteer (N=205)		Covered women (N=198)	
	absolute frequency	Relative frequency	absolute frequency	Relative frequency
Get trained on AIDS	151	73.7	101	51.0
Most used information sources TV	129	62.9	120	60.6
least used information sources Family members	9	4.4	15	7.3
Desire to get complete information about AIDS "Totally agree and agree"	181	88.2	161	81.3
Primary suggested approach to Obtain AIDS awareness: group discussion	105	51.2	64	32.3
First Suggested trainers on AIDS Doctor	124	60.5	121	61.1
Last Suggested trainers on AIDS Health volunteer	3	1.5	3	1.5

Table 2 shows the general AIDS awareness of the health volunteers and the women. As indicated in the Table, the awareness of health volunteers is significantly higher than that of the women; however, this difference was only significant in diseases cause (0.019), concept of AIDS (0.007), and possibility of diagnosing through testing (0.005). Furthermore, the table illustrates that in both groups, the highest level of awareness was about disease detection through testing and the lowest level of awareness was about length of illness incubation, lack of definitive cure, and concept of AIDS.

The findings about awareness of infection transmission are presented in Table 3. As presented in Table 3, the women were not as much aware of all the questions as the health volunteers were. This difference was significant in four cases: social relationships (0.029), sneezing and coughing (0.004), sharp devices (0.002), surgery and dentistry instruments (0.039). Furthermore, the findings indicated that the highest level of awareness in both groups was about infection transmission through sexual relationships, blood, blood products, and sharp devices. In addition, the lowest awareness was about transmission through mosquito bites, breast milk, and saliva.

Table 4 illustrates AIDS prevention awareness of the health volunteers and the women. In almost all the questions, the health volunteers' AIDS awareness was higher than that of the women. The difference was significant at personal care equipment, public pool, mosquito net, and kissing. The

awareness about using mosquito net was lower than the other questions.

Table 5 compares the qualitative AIDS awareness status among health the volunteers and the women at Zanjan health centers. As shown in Table 5, health volunteers' awareness regarding general transmission and prevention ways was two times more than the women. The difference was statistically significant ($P=0.001$).

In this study, 405 health volunteers and women participated. The data analysis of AIDS awareness showed that the health volunteers were more aware than the women. The awareness level of the health volunteers about most items was above 50% in both groups. However, their awareness about AIDS concept, length of incubation period, and lack of definitive cure was very low.

The findings on transmission ways awareness indicated that the health volunteers were more aware than the women in all cases, except transmission through food and drink. This difference was significant in transmission through sneezing, coughing, and sharp devices. At initial occurrence of AIDS epidemic in the world, it was described as a homosexual disease. In this study, however, both groups were aware of infection transmission through male-female sexual relationship more than male-male sexual relationship. Additionally, the findings about prevention ways awareness showed that the health volunteers were more aware than the women.

Table 2: Comparison of frequency of correct answer to HIV / AIDS awareness questions by the health volunteers and the women (Zanjan - 2019)

Public awareness about HIV / AIDS	Correct answers				Pvalue Chi-square
	Health volunteers		Covered women		
	Absolute frequency	Relative frequency	Absolute frequency	Relative frequency	
Disease cause (virus)	170	82.9	145	73.2	0.019
Concept of AIDS: damage to body system	74	36.1	47	23.7	0.007
Length of incubation period in adults	5	2.4	3	1.5	0.506
AIDS and HIV are synonym	106	51.7	88	45.1	0.188
Possibility of transmission from a seemingly healthy person	125	61.0	114	57.9	0.526
Ability to detect infection through testing	193	94.1	170	85.9	0.005
Possibility of prevention	173	84.4	155	78.7	0.140
Existence of definite cure	47	22.9	57	28.9	0.169
Possibility of prevention using vaccine	124	60.5	99	50.3	0.390

Table 3: Comparison of awareness about HIV transmission ways by the health volunteers and the women (Zanjan - 2019)

Awareness about HIV / AIDS transmission ways	Correct answers				Pvalue
	Health volunteers		Covered women		
	Absolute frequency	Relative frequency	Absolute frequency	Relative frequency	
Contact with body of HIV patient	145	70.7	130	66.00	0.307
Social relations	180	87.8	158	79.8	0.029
Public bath and pool	161	78.5	142	72.1	0.133
Sneeze and cough	167	81.5	136	69.00	0.004
Embrace and kiss	180	87.8	166	41.2	0.253
Sexual relationship (male-female)	187	91.2	171	86.4	0.122
Sexual relationship (male-male)	155	75.6	133	67.2	0.061
Transmission from mother to child (during pregnancy or childbirth)	163	79.5	149	75.3	0.307
Breast milk	115	56.1	105	53.00	0.536
saliva	112	54.6	91	46.00	0.082
Body sweat and tears	150	73.2	127	64.1	0.061
Sharp devices in beauty salons and barbershops	188	91.7	161	81.3	0.002
Infected ampule, needle and drugs	190	92.7	181	91.4	0.638
Blood and blood products	191	93.2	174	87.9	0.062
Surgical and dental supplies	180	87.8	159	80.3	0.039
Non-sanitary cupping	188	91.7	170	85.9	0.062
Tattoos	178	86.8	170	86.3	0.875
Insect bites	86	41.5	69	34.8	0.172
Food and Beverage	179	87.3	158	80.2	0.053
Sleeping supplies (blankets, pillows)	177	86.3	166	84.3	0.556
Vehicles (taxis and bus bars) and public telephone	185	90.2	177	89.8	0.894
Dining room utensils (glass, spoon and plate)	171	83.4	159	80.7	0.480
Shoes and clothing	184	89.8	170	86.3	0.285

The awareness of both groups was at the highest level about the impact of condom use on infection prevention; this indicates that in both groups, AIDS was recognized as a sexually transmitted infection.

Comparing the awareness of two groups, it was found that the health volunteers were significantly more aware than the

women. However, the AIDS awareness of a small proportion in both groups was weak. Considering that four decades have passed since the emergence of AIDS, this is not acceptable especially from the health volunteers. In fact, around 30-40 percent of the participants significantly had no sufficient knowledge about AIDS transmission and prevention ways.

Table 4: Comparison of awareness about HIV / AIDS prevention ways among the health volunteers and the women (Zanjan-2019)

Awareness about HIV / AIDS prevention ways	Correct answers				Pvalue
	Health volunteers		Covered women		
	Absolute frequency	Relative frequency	Absolute frequency	Relative frequency	
Using personal toothbrush	146	71.2	124	62.6	0.067
Using personal makeup instruments	175	85.4	153	77.3	0.037
Not using public swimming pool	155	75.6	129	65.2	0.021
Not using public bathroom and toilet	136	66.3	117	59.1	0.132
Using mosquito net	115	56.1	91	46	0.042
Using sterile and disposable ampule and needles	13	6.3	10	5.1	0.577
Avoiding embracing and kissing the patient	160	78.00	136	69.00	0.04
Adherence to family and ethical principles	170	82.9	155	77.8	0.279
Proper use of condoms	184	89.8	168	84.8	0.138

Table 5: Comparison Grouping Awareness among the Health Volunteers and the Women (Zanjan - 2019)

	Classification of awareness level	Health volunteers		Covered women		Pvalue
		Absolute frequency	Relative frequency	Absolute frequency	Relative frequency	
General Awareness about AIDS	Weak: 0-14	4	2.0	13	6.7	0.001
	Middle: 15-30	60	29.3	70	36.3	
	Good: 31-44	141	68.8	110	57.0	

The awareness of both groups was at the highest level about the impact of condom use on infection prevention; this indicates that in both groups, AIDS was recognized as a sexually transmitted infection.

Comparing the awareness of two groups, it was found that the health volunteers were significantly more aware than the women. However, the AIDS awareness of a small proportion in both groups was weak. Considering that four decades have passed since the emergence of AIDS, this is not acceptable especially from the health volunteers. In fact, around 30-40 percent of the participants significantly had no sufficient knowledge about AIDS transmission and prevention ways. The review of Iranian studies showed that there was no study on comparing health volunteers and covered women. However, there are plenty of studies on awareness of different age and gender groups in Iran and around the world. As noted earlier, most studies in Iran have been conducted using heterogeneous, and sometimes invalid research tools [12]. Although the reliability of these tools has been cited clearly by referring to Cronbach Alpha index, the lack of validity challenges their reliability. In a study by 22. Kermodé *et al.* (2005) it was found that 57% of population in Jeddah, Saudi Arabia had AIDS awareness [22]. Although AIDS awareness in their study was assessed using a 9-item tool that is not in line with the present study (44 items), it can be said that the level of knowledge is similar in both groups. In another study conducted by Afsar Kazerooni it was revealed that the nurses' knowledge about AIDS was moderate [17]. According to Eskandari *et al.* (2014) students' AIDS awareness was found to be insufficient and the need to provide extensive educational programs was emphasized [23]. Moreover, Ghahremani *et al.* and Khalajabadi Farahani *et al.* (2018) showed that the female students' AIDS awareness in Bonab and Tehran Azad universities is moderate [24, 25]. Further, Montazeri (2005) found the target population in his study had a relatively good knowledge; the highest level of knowledge was associated with infection transmission through infected ampoule and needle as well as sexual relationship. The transmission knowledge through insect bites was at the lowest level [26]. This is consistent with findings of the present study.

Half of the women and 30% of the health volunteers had not been educated about AIDS and cited the television as the first source of information. Although most participants in both groups were keen on getting information about AIDS, they were not willing to select health volunteers as their educators; this requires a closer look at the cause of such attitudes. Despite using various AIDS awareness tools, these studies showed that the level of community awareness is low

and health education programs are needed to be designed and conducted. Therefore, it was recommended that AIDS education interventions to be designed and evaluated using valid tools which are compatible with cultural values of Iran. This is an important and effective step in promoting AIDS transmission and prevention ways awareness. Although the geographical distribution of Health Centers in Zanjan and accessibility of women caused some difficulties, this study did not face major limitations. The cooperation of the health volunteers led to successful execution of this study.

Although the target population of the current study participated with full contest, given the method of sampling the women, it is not possible to generalize the results of this study to the population. In addition, using self-administered questionnaires could be one of the limitations of this study.

4. Conclusion

The findings showed that the health volunteers' awareness about AIDS was higher than that of the women; perhaps one of the reasons that the health volunteers are more aware about AIDS than the women is related to their cooperation with the health sectors. The cooperation of health volunteers with Health Centers led to their high awareness. This level of awareness does not seem to be acceptable, because they are responsible for important mission of health education at health service centers. However, the findings of this study indicated that in some important cases, the level of public awareness is still low and more attention should be paid to health education programs.

Authors' Contributions

M.M.V., Editor and Supervisor, Research Design and Writing; Sh.J., Student, Collaboration in Designing and Executing Research; K.K., Consulting and Collaboration in Statistical Analysis A.Sh., Consulting and Collaboration in Designing Study.

Conflicts of Interest

The authors report no actual or potential conflicts of interest.

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