



Original Article

Evaluation of the knowledge and stigmatization level of HIV/AIDS and related factors

✉ Oya Bozkurt,¹ ✉ Derya Bayırlı Turan²

¹Department of Mental and Neurological Diseases, Yeniüzyıl University Gaziosmanpaşa Hospital, İstanbul, Turkey

²Department of Clinical Microbiology Infectious Diseases, Yeniüzyıl University Gaziosmanpaşa Hospital, İstanbul, Turkey

Abstract

Objectives: This study aims to determine the level of knowledge and stigma about HIV/AIDS in adults without a history of HIV/AIDS. Additionally, it aims to evaluate the related factors and to examine the relationship between the level of knowledge and stigma.

Methods: This study was conducted with 185 people between the ages of 18–70 who were present in a university hospital for reasons other than health problems. The sociodemographic characteristics of the individuals were recorded and the level of knowledge and stigma related to HIV/AIDS was evaluated using a literature questionnaire consisting of 34 items prepared using expert opinions.

Results: The median knowledge score (min-max) of the participants regarding HIV/AIDS was 9 (0–15) and the median score (min-max) regarding HIV/AIDS stigma was 5 (0–15). The three most frequently preferred sources of information about HIV/AIDS were media, school, family and friends. It was determined that the knowledge of university graduates about HIV/AIDS was higher than that of high school graduates. HIV/AIDS related stigmatization level was found to be higher in males than in females, and in those with lower levels of education. It was determined that the increase in the level of knowledge about HIV/AIDS was associated with a decrease in stigmatization level.

Conclusion: The most striking result of the research is that the stigmatization level related to HIV/AIDS is affected by both the level of knowledge of the participants and the level of education. Based on these results, interventions directed toward education will reduce stigma related to HIV/AIDS and that men especially, and people with lower education levels need to be selected as the target group for information.

Keywords: Acquired immunodeficiency syndrome; HIV; knowledge level; social stigma.

The human immunodeficiency virus (HIV) is a virus targeting the immune system and weakening people's defense systems against infections and some types of cancer. The latest stage of HIV infection, if not treated, is the immune deficiency syndrome (AIDS), which can last 2–15 years, depending on the individual.^[1] The HIV/AIDS epidemic is one of the most significant global health problems in history.^[2] According to the United Nations Program on HIV/AIDS (UNAIDS) data, 1.7 million people were infected with HIV in 2018 for the first time and 37.9 million people are continuing to live with HIV. According to this data, 770 thousand people died because of HIV/AIDS related diseases.^[3]

The level of knowledge about HIV/AIDS is an important factor for effective prevention of the spread of HIV/AIDS and interventional research.^[4] Lack of accurate information about HIV/AIDS is generally associated with high-risk behavior. Young people often develop stigmatization, which can create a serious barrier to protecting themselves from HIV/AIDS.^[4]

Stigmatization regarding HIV/AIDS is defined as discrimination and discrediting of people perceived to have HIV/AIDS.^[5] People with HIV/AIDS and the social groups to which they belong, are not really known by society, thus they have been stigmatized worldwide since the outbreak began.^[6] Stigmatization and discrimination against HIV/AIDS have been ac-

Address for correspondence: Oya Bozkurt, Yeniüzyıl Üniv. Gaziosmanpaşa Hast., Ruh ve Sinir Hastalıkları Anabilim Dalı, İstanbul, Turkey

Phone: +90 212 615 38 38 **E-mail:** oyabozkurt2000@yahoo.com **ORCID:** 0000-0002-1084-8414

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What is known on this subject?

- Stigmatization related to HIV/AIDS has been recognized worldwide as a major obstacle in the fight against HIV/AIDS. Stigmatization and discrimination create many negative effects in the social, political and economic life of people living with HIV/AIDS.

What is the contribution of this paper?

- It was observed that when the knowledge level increased about HIV/AIDS, the stigmatization level decreased. People with lower educational levels have little information about the issue. While there was no difference in the knowledge level according to gender, it was shown that stigmatization is higher in men.

What is its contribution to the practice?

- Educational interventions related to HIV/AIDS would reduce stigmatization. Men particularly, as well as people with lower education levels should be targeted for information.

cepted as key factors in the spread of HIV/AIDS.^[7] In the early years of the HIV/AIDS epidemic, the social consequences of stigma and discrimination against people with HIV/AIDS have been identified as part of the "third stage of the outbreak" and addressing these results has been described as "the center of the global HIV/AIDS fight, just like the disease itself"^[8]

Stigmatization related to HIV/AIDS has been accepted worldwide as a major obstacle in the fight against HIV/AIDS.^[9] Stigmatization and discrimination brings forth many negative effects in the social, political and economic life of people living with HIV/AIDS.^[8,10] The fear of stigmatization can prevent people with high-risk behavior involving HIV/AIDS exposure to undergo an HIV test or explain their seropositive status to sexual partners, family and friends.^[6,11,12] Stigmatization of people diagnosed with HIV/AIDS prevents or delays infected individuals from seeking medical intervention, preventing them from receiving adequate medical care. Stigmatization can also lead to patient compliance with drug regimens and treatments. The noncompliance of patients leads to treatment failure and the risk of the development of drug resistant strains of HIV.^[9] Because of this, measures that can reduce the outbreak or its effects are often inaccessible to those afraid of stigmatization and the fight against HIV/AIDS is prolonged.^[10] It is difficult to measure the stigmatization level in society. However, stigmatization and the outcomes play an important role in the HIV/AIDS epidemic. Identifying these problems is the first critical step in identifying various types of intervention and prevention.

This study was carried out to determine the knowledge and stigmatization levels and related factors regarding HIV/AIDS and whether there is a relationship between the level of knowledge and stigmatization.

Materials and Method**Type of Study**

The study was conducted in a cross-sectional descriptive manner.

Location and Time of the Study

The study was carried out between June 2017 and April 2018

in a university hospital located in the Gaziosmanpaşa district of Istanbul.

Sample

The data was collected from individuals in the hospital, who were there for reasons other than health problems (patient relatives or companions, relatives of the medical faculty and nursing students studying in the hospital) (n=185). Study inclusion criteria were as follows: being aged 18–70 years, being literate, not being a healthcare professional, not being infected with HIV/AIDS, not having a relative that is HIV/AIDS positive and not being in the hospital for any health problems.

Data Collection Tools and Research Duration

The data was collected with a questionnaire and the "HIV/AIDS Related Knowledge and Stigmatization Level Evaluation Form", prepared based on the literature. The questionnaire form was administered by the observation response technique.

Questionnaire: The form consisted of questions including sociodemographic characteristics of individuals. The level of piety of the participants was evaluated according to the answer to the question "According to you, how religious are you?" The answers to the question were slightly, moderately, highly and not religious.

HIV/AIDS Related Knowledge and Stigmatization Level Evaluation Form:

The HIV/AIDS related knowledge level was evaluated using 17 statements (Table 2) and the stigmatization level with 17 other statements (Table 2). The response choices were "I agree", "I do not agree" and "I do not know". In the knowledge statements, a correct answer was scored as "1 point" and an incorrect answer or the answer "I do not know" as "0 points". The scoring for the stigmatization statements was the exact opposite. The knowledge level statements numbered 3, 4, 5, 7, 8, 9, 10, 14 and 17 and the stigmatization statements numbered 16 and 17 were reverse scored. The scores from each item were obtained and the level of knowledge and stigmatization scores were calculated. The lowest possible score for each section; knowledge and stigmatization, was "0 points" and the highest possible score was "17". As the obtained score increased, the knowledge and stigmatization level also increased.

The knowledge and stigmatization statements were created following a comprehensive literature review^[13–17] and a pool of 45 statements was created. To evaluate the content validity of the statements, a total of 10 experts, four psychiatrists, four infectious diseases specialists and two nurses, were consulted for suggestions and opinions on the general survey. Then, 34 suggestions were chosen in line with expert opinions (those accepted by 80% or more of the experts) and the final knowledge and stigmatization statements were finalized. The Cronbach's alpha value within the group was 0.720 for knowledge

level statements and 0.828 for stigmatization statements. The values found were in the acceptable range.^[18]

Ethical Considerations

Necessary permissions and ethics committee approval (number: 07-06-2017/031) were obtained to conduct the study. The individuals who met the inclusion criteria gave verbal consent after receiving detailed information about the purpose and subject of the study. The people who agreed to participate in the study were asked to complete in the questionnaire.

Data Analysis

Data were evaluated using the IBM SPSS (Version 15.0) statistical software package. Data were evaluated for normal distribution and these assumptions were not met in any analysis. Cronbach's alpha value was calculated to evaluate the reliability of the statements. Number, percentage, average, standard deviation, median, minimum and maximum values were used in the evaluation of descriptive data. Mann-Whitney U and Kruskal-Wallis tests were used to compare the groups. Spearman correlation analysis was used to evaluate the relationship between scores. Statistical significance was determined as $p \leq 0.05$.

Results

Of the 185 participants 102 were men and 83 were women. The mean age was 33.4 ± 11.3 and the median age (min-max) was 32 (18–69). Of the participants 58.4% were married, 54.1% were university graduates, 82.7% were employed, 84.9% had middle class income and 74.6% had a perceived piety level of moderate. Table 1 gives the descriptive characteristics of the participants.

The median (min-max) HIV/AIDS knowledge score of the participants was determined as 9 (0–15). The three statements regarding HIV/AIDS knowledge that were least responded to correctly were determined as "AIDS is an infectious disease", "The person has AIDS disease if the ELISA test is positive" and "AIDS is a disease caused by a microorganism (virus)" (Table 2).

The most common sources used by participants to obtain knowledge about AIDS were the media 65.4%, school 18.9%, family and friends 5.9%, health personnel 5.4%, workplace 3.2% and religious officials 1.1%, respectively.

It was determined that the HIV/AIDS related knowledge level did not differ according to gender, age, marital status, working status, income level or piety. It was determined that university graduates had a significantly higher HIV/AIDS related knowledge level in comparison to high school graduates. Table 3 shows the comparison of HIV/AIDS knowledge level according to variables.

The median (min-max) HIV/AIDS related stigmatization score of the participants was 5 (0–15). The statements regarding HIV/AIDS knowledge that were least responded to correctly

Table 1. Descriptive characteristics of the study group (n=185)

Demographic characteristic	n	%
Sex		
Male	102	55.1
Female	83	44.9
Age group		
Aged <30	78	42.2
30 years and older	107	57.8
Marital status		
Married	108	58.4
Single	77	41.6
Educational status		
Primary school and below	34	18.4
High school	51	27.6
University	100	54.1
Working status		
Employed	153	82.7
Unemployed	32	17.3
Income status		
Low	19	10.3
Middle	157	84.9
High	9	4.9

were "AIDS should be part of the premarital tests", "People with AIDS should not have children" and "People with AIDS should not get married" (Table 2). It was found that the score obtained from stigmatization statements about HIV/AIDS was significantly higher in men than in women. It was determined that the HIV/AIDS stigmatization was significantly lower in university graduates compared to high school graduates. Table 4 shows the comparison of HIV/AIDS stigmatization level according to variables.

The current study found a very weak negative correlation between the HIV/AIDS knowledge and stigmatization levels ($r = -0.156$, $p = 0.034$) (Fig. 1).

Discussion

This study evaluated the HIV/AIDS knowledge and stigmatization level of adults with no history of HIV/AIDS. It was found that people with a higher knowledge level about the issue had lower stigmatization levels. It was determined that the educational status of the participants determined both the knowledge and stigmatization level regarding HIV/AIDS. While there was no difference in information level according to the gender of the participants, it was revealed that the stigmatization was higher in men.

The median (min-max) HIV/AIDS knowledge score of the participants in the current study was determined as 9 (0–15). In two previous studies, the mean score of participants from another HIV/AIDS information scale was determined as 5.90.^[19,20] In another study the mean HIV/AIDS knowledge score

Table 2. Distribution of participants' responses to HIV/AIDS knowledge and stigmatization statements (n=185)

Knowledge statements regarding HIV/AIDS	Correct response rate, n (%)*
1. AIDS is a disease caused by a microorganism (virus).	29 (15.7)
2. AIDS is a disease treated with medication.	129 (69.7)
3. AIDS is a disease that results in death in a short time.	76 (41.1)
4. One can be protected from AIDS by getting vaccinated.	81 (43.8)
5. A person has AIDS if the ELISA test is positive.	23 (12.4)
6. AIDS is an infectious disease.	18 (9.7)
7. AIDS can be transmitted by food.	133 (71.9)
8. AIDS can be transmitted by a toilet.	108 (58.4)
9. AIDS can be transmitted by kisses on the cheek, shaking hands or hugging.	125 (67.6)
10. AIDS can be transmitted by shared items such as towels, cutlery and clothes.	111 (60.0)
11. AIDS can be transmitted by blood transfusion.	37 (20.0)
12. AIDS can be transmitted by dental treatments.	78 (42.2)
13. AIDS is transmitted from the mother to the baby.	49 (26.5)
14. AIDS can only be transmitted through sexual intercourse.	67 (36.2)
15. The use of a condom can prevent AIDS infection.	84 (45.4)
16. People with AIDS are most likely to be gay or homosexual.	144 (77.8)
17. AIDS is not seen in monogamous people.	71 (38.4)
Stigmatization statements regarding HIV/AIDS	
1. I do not like people with AIDS.	122 (65.9)
2. I would not want the community to know if I had a relative with AIDS.	112 (60.5)
3. I would not like to work in the same place as a person with AIDS.	124 (67.0)
4. A person with AIDS should be fired if it were to come out.	146 (78.9)
5. I would not want to stay in the same room as a person with AIDS.	107 (57.8)
6. People with AIDS should not get married.	78 (42.2)
7. People with AIDS should not have children.	72 (38.9)
8. AIDS should be part of the premarital tests.	23 (12.4)
9. The state should isolate AIDS patients.	137 (74.1)
10. The state should not pay for the treatment of AIDS patients.	165 (89.2)
11. There should be a legal regulation saying that people with AIDS should not be able to work anywhere.	162 (87.6)
12. Aid should not be given to support people with AIDS.	166 (89.7)
13. People with AIDS most likely have done something to deserve this situation.	160 (86.5)
14. AIDS is a punishment given by Allah.	168 (90.8)
15. People with AIDS have immoral behavior.	153 (82.7)
16. I would like to undergo an AIDS test.	114 (61.6)
17. I would like to be informed about AIDS.	122 (65.9)

was reported as 3.55.^[21] The score difference is attributable to different measurement tools.

In the current study, the three statements regarding HIV/AIDS knowledge that were least responded to correctly were determined as "AIDS is an infectious disease" (9.7%), "The person has AIDS disease if the ELISA test is positive" (12.4%) and "AIDS is a disease caused by a microorganism (virus)" (15.7%). The least correct response in another study was reported as "Do you think a person can be infected with HIV by a mosquito bite?" (correct response frequency 63.3%).^[19] Zhao et al.^[4] have reported the item "Everybody can be infected with HIV." as the least correct response (33.9%). The statements and questions asked in other studies are not the same and the frequency of correct responses found in the current study are lower when

compared to other studies.

The median (min-max) HIV/AIDS related stigmatization score of the participants was 5 (0–15). In two previous studies, it was reported that the stigmatization score was 0.99 as a result of evaluation with a different scale.^[19,20] Muturi and An have reported a mean score of 1.54 obtained from their stigmatization index.^[21] The score difference is attributable to different measurement tools.

The questions regarding HIV/AIDS knowledge that were least responded to correctly were "AIDS should be part of the premarital tests", "People with AIDS should not have children" and "People with AIDS should not get married" (Table 2). Another previous study reported that the least known response to

Table 3. Comparison of HIV/AIDS knowledge level with sociodemographic data (n=185)

	Knowledge level score Median (Min-Max)	z/p
Sex		
Male	9 (1–15)	4226.5/0.986
Female	9 (0–14)	
Age group		
Aged <30	9 (0–14)	4617.5/0.214
30 years and older	9 (1–15)	
Marital status		
Married	9.0 (1.0–15.0)	3682.5/0.183
Not married	9.0 (0.0–14.0)	
Educational status		
Primary school and below	7.0 (1.0–12.0)	20.1/<0.0001
Middle School ^a	9.0 (0.0–13.0)	
University ^a	9.5 (1.0–15.0)	
Working status		
Employed	9 (1–15)	2052.0/0.148
Unemployed	8 (0–14)	
Perceived income status		
Low	8.0 (3.0–13.0)	0.2/0.883
Middle	9.0 (0.0–15.0)	
High	10.0 (6.0–13.0)	
Perceived piousness		
Slightly	10.0 (5.0–14.0)	1.7/0.628
Moderately	9.0 (0.0–15.0)	
Highly	10.0 (2.0–13.0)	
Not pious	8.5 (2.0–13.0)	

the question about stigmatization regarding HIV/AIDS was “Would you share your meal with someone who you know or suspect has HIV/AIDS?”.^[19]

One of the countless factors associated with stigmatization associated with HIV/AIDS is the lack of information about the issue. It is expected that people with a lower knowledge level about HIV/AIDS have a higher stigmatization level in this regard.^[12,20,21] The current study found that the stigmatization level decreased as the knowledge level about HIV/AIDS increased. Previous studies also showed that an increase in knowledge level decreased the stigmatization level.^[4,10,20–23]

Young people globally are at the center of the HIV/AIDS epidemic. Almost half of the HIV/AIDS infected people are between the ages of 15 and 24 years old. Many factors increase the vulnerability of young people to HIV/AIDS, but lack of knowledge is defined as one of the leading causes.^[24] Although young people are especially sensitive to HIV/AIDS infection, their access to sufficient healthcare knowledge and services are limited. As a result of complex sexual taboos, censorship of sexual education for young people is among these limita-

Table 4. Comparison of HIV/AIDS stigmatization level with sociodemographic data (n=185)

	HIV/AIDS stigmatization score Median (Min-Max)	z/p
Sex		
Male	6 (0–15)	5476.0/0.001
Female	4 (0–12)	
Marital status		
Married	5 (0–12)	3797.0/0.312
Not married	4 (0–15)	
Educational status		
Primary school or lower ^{**}	6 (0–15)	13.4/0.001
High school ^{**}	6 (1–12)	
University [*]	4 (0–12)	
Working status		
Employed	5 (0–15)	2337.0/0.685
Unemployed	4.5 (1–11)	
Perceived income status		
Low	6.0 (1.0–11.0)	5.0/0.081
Middle	4.0 (0.0–15.0)	
High	6.0 (2.0–11.0)	
Perceived piousness		
Slightly	3.0 (1.0–11.0)	0.8/0.848
Moderately	5.0 (0.0–15.0)	
Highly	4.5 (1.0–11.0)	
Not pious	5.0 (1.0–12.0)	
Age group		
Aged <30	4.0 (0.0–15.0)	4707.0/0.135
30 years and older	5.0 (0.0–15.0)	

tions, as adults fear this can encourage children to experience sex. Because of this, it is expected that the knowledge level regarding HIV/AIDS increases with age.^[25] The current study did not determine a significant relationship between age and HIV/AIDS related knowledge. Similar to the current study, Okeke et al.^[26] have also reported that there was no significant relationship between HIV/AIDS knowledge level and age. However, unlike the findings in the current study, there are studies reporting that HIV/AIDS knowledge level is lower in young people than in older people.^[20,27] A study carried out with children determined that the knowledge level was lower in children under 14 years of age in comparison to older children.^[4]

The current study did not find any difference regarding HIV/AIDS related knowledge level between men and women. Studies that have similar results with the current study are noteworthy.^[4,19] However, some studies reported that the HIV/AIDS related knowledge level was higher in women compared to men,^[20,28] whereas other studies reported the exact opposite.^[11,25,29]

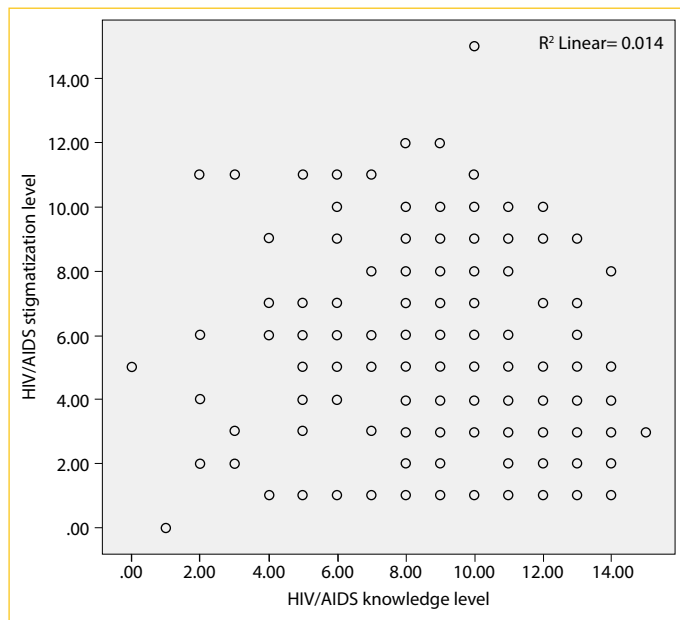


Figure 1. Spreading diagram of HIV/AIDS knowledge and stigmatization scores.

The current study found that there was no significant difference in HIV/AIDS related knowledge level according to marital status. Two previous studies reported similar results.^[11,20] Asante has reported, in contrary to the current study, that the HIV/AIDS related knowledge level is higher in married people or people in a relationship when compared to single people.^[28] Literacy and education are important facilitators for the ability to obtain information on HIV/AIDS.^[20] The current study found that the HIV/AIDS related knowledge level was significantly higher in university graduates when compared to high school graduates. Other studies reported that as the educational level increased, the knowledge level also increased.^[19,20]

The current study did not determine any difference in HIV/AIDS related knowledge level according to being employed or unemployed or according to income level. Other studies also reported similar results.^[19,20] In contrary to the results of the current study, Oljira et al.^[29] have reported that people with middle or higher income levels had a higher HIV/AIDS related knowledge level in comparison to people with lower incomes. Othman et al.^[11] have also determined a significant positive relationship between income levels and HIV/AIDS related knowledge level.

The role of religion and spirituality in the lives of people suffering from serious illnesses has had an increasing scientific focus over the past decade. The relationship between religion and health has been extensively studied. Religion may have an effect on interpreting health-related issues and providing positive behavior change regarding moral values. However, this effect can also lead into a negative direction.^[30] The current study found that there was no significant difference in HIV/AIDS related knowledge level according to piety levels.

Among the participants of the current study, three of the most

frequently used sources of information about HIV/AIDS were found as media, school, and family and friends, respectively. Similarly another study also reported the most frequently used sources of information as media, school and friends, respectively.^[19] Oljira et al.^[29] have reported in their study that school is in first place as the most frequently used source of information, media in second place, family in third place and health professionals as the least used source. According to the study of Othman et al.,^[11] the most frequently used sources of information for HIV/AIDS were television/radio, newspapers and school teachers. Similar to the other studies, the current study also determined that health institutions were the least preferred as information source for HIV/AIDS.

HIV/AIDS-related stigmatization has existed since the outbreak began and is linked to misinformation and fear.^[31] Stigmatization related to HIV/AIDS shows itself in forms of social exclusion, avoidance, prejudice and discrimination. Negative attitudes and discrimination against people living with HIV still continues across societies. People living with HIV that experience stigmatization related to AIDS experience poor mental health and adverse medical consequences.^[23] Therefore, both in terms of the comfort of patients with AIDS and in maintaining the AIDS struggle in the society more effectively, it is important to determine the stigmatization level of society and the related factors.^[21] It is noteworthy that many previous studies have reported higher levels of stigmatization among young people, and therefore increased efforts should be aimed at educating the younger generation with a higher risk of HIV infection.^[4,20,22,23,27]

The study determined that HIV/AIDS stigmatization was higher in men than in women. A similar study also reported that the HIV/AIDS related stigmatization level was higher in men than in women.^[4,20,22] The study of Hamra et al.^[10] however, has reported that there was no difference between men and women in terms of HIV/AIDS stigmatization.

Married people were reported to have a higher incidence of HIV/AIDS stigmatization and were more likely to blame people with HIV/AIDS for bringing the disease to the community.^[22] The current study did not determine a significant difference in terms of HIV/AIDS stigmatization according to marital status. Another study also did not find a relationship between stigmatization level and marital status.^[20]

The current study determined that the HIV/AIDS stigmatization level was lower in high school and university graduates in comparison to primary school graduates (or lower). Another study reported that the stigmatization level was higher in primary school graduates in comparison to people that did not receive any education at all and that the stigmatization level was lower in high school graduates or higher in comparison to primary school graduates.^[20] Hamra et al.^[10] did not find any relationship between educational status and stigmatization level. The results of the current study support the information in the literature and shows that the educational level of individuals is important in the fight against HIV/AIDS.

Even though there was a significant relationship between knowledge level and socioeconomic status, no relationship between income status and stigmatization was found in the current study. Similarly, some studies have also reported that there was no correlation between income status and stigmatization.^[10,21,22]

Religious and moral values may lead some people to conclude that having HIV/AIDS is due to a moral issue and is a reason worthy of punishment.^[21] However, the current study did not find any significant relationship between piety and HIV/AIDS stigmatization. A study carried out in America reported that piousness is an important factor in predicting stigmatization.^[21]

Limitations of the Study

The current study was conducted with a sample group selected from a region with a moderate socioeconomic level and therefore does not include samples from lower and upper socioeconomic levels. The study group was chosen from a hospital environment and it is not community based. Therefore, it does not have the power to fully represent society, which is another important limitation.

Conclusions and Recommendations

In the study group, the three most frequently preferred sources of information about HIV/AIDS were media, school and family and friends. It was determined that university graduates had a higher knowledge level regarding HIV/AIDS in comparison to high school graduates. It was found that the stigmatization level regarding HIV/AIDS was significantly higher in men than in women. Again, lower educational status was related to higher stigmatization levels.

Based on these results, educational interventions could reduce stigmatization and increase the quality of life of people living with HIV/AIDS. These educational interventions should be prepared within an infrastructure including people living with HIV/AIDS, their families and friends, religious groups, educational institutions, health institutions and all relevant units of the state. Individuals looking to media and school for information on HIV/AIDS is noteworthy. Preparing public service advertisements for media and educational programs for schools would be beneficial as a source of information.

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