HIV / AIDS health literacy and Its Related Factors: a cross-sectional study

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ABSTRACT

Background and Objective: Assessing the level of AIDS literacy and recognizing the predictors of health literacy in this field is essential for the prevention and control of this disease in society .The aim of this research was to mesure level of HIV/AIDS health literacy among young monitored who worked in health centers of Tehran University of Medical Sciences.

Materials and Methods: This is a cross-sectional descriptive research conducted on 424 young people in the south of Tehran in 2021. Stratified random sampling was used. Informed consent, voluntary participation, and 18-29 age ranges were the criteria to enter the study. A standard HIV/AIDS health literacy instrument, whose reliability and validity had been established, were used to assess health literacy. Data was descriptively and analytically analyzed through SPSS16 based on the independent t-test and one-way ANOVA.

Results: The average HIV/AIDS health literacy rate among the youth was 11.52. Almost 28% of participantes were adequately literate and 72% had inadequate literate. The relationship among gender (p=0.035), marital status (p=0.001), and health literacy was significant. These people with the following characteristics were more HIV/AIDS health literate than other groups: males, 20-25 age group, singles, and people with bachelor's degree. The relationship among ethnicity (p=0.445), socioeconomic status (p=0.202), and HIV/AIDS health literacy was not statistically significant.

Conclusion: A third of the sample was adequately HIV/AIDS literate. Educational intervention and information accessibility can be crucial steps in promoting people's health literacy regarding this degenerative disease.

Paper Type: Research Article
Keywords: Young Adults, Health Literacy, HIV/AIDS, Health education.

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Introduction

Today health literacy is discussed as a global issue and World Health Organization (WHO) recognizes that as a major determining factor in health. In all countires, WHO has recommended to establish a community comprised of affected members to organize strategic activities in relation to promoting health literacy (1). In fact, health literacy is regarded as an essential element of public health. Since it plays a significant role in health-related decision-making, promotion of public health, and raising healthcare services, health literacy has caught health policymakers, and planners' attention (2). Improving health literacy offers considerable health benefits such as empowering patients to make judicious decisions, reducing health-related risks, preventing diseases, improving safety, enhancing life quality, and raising the quality of healthcare (3). Therefore, health literacy can be a key factor in treating patients and maintaining health. In addition, the negative economic effects of low health literacy on patients and healthcare system cannot be underestimated. These points prove the importance of special attention to health literacy (4).

According to a nationwide study was conducted by Montazeri et al in Iran, half of the population has low health literacy and this inadequate knowledge severely afflicts vulnerable groups such as the elderly, homemakers, the unemployed, and people with rudimentary general knowledge (5)(6).

The pandemic nature of the disease, its rapid spread, long incubation period, and its incurability have made AIDS. In the recent decades, AIDS is one of the most critical health, social, and even political issues in many countries. According to WHO facts, health education is the only way to tackle HIV/AIDS and vulnerable groups must be high on the agenda. Drug addicts constitute the most susceptible group in danger of contracting HIV (7).

A global health risk to all human communities, HIV/AIDS has countless health, cultural, social, economic, and political repercussions (8). In Iran, the spread of the disease has shifted from limited to concentrated spread (9). Based on the latest records published in 2019 by AIDS and controlling sexually-transmitted diseases (STD) organization governed by the Ministry of Health 60.1% of patients with HIV/AIDS whom were drug addicts (i.e., through injection) and 22.2% of whom contracted AIDS due to unsafe sex. The vast majority of cases (82%) were males, and 18% were females. Most HIV positive sufferers blame infected syringes and unprotected sex as the chief causes of the disease (10). Non-existence of vaccine and ineffective treatment render prevention as the most viable alternative to control this pandemic. Most of the educational interventions and announcements publicized by healthcare system are beyond the target group population, making health literacy all the more relevant and essential to comprehend and use the information (11).

Several Studies show that determining HIV/AIDS related health literacy has been absent in most research projects and this was the first study of its kind focusing on the youth monitored by the Tehran University of Medical Sciences. The success of disease control and prevention programs calls for the assessment and evaluation of HIV/AIDS health literacy rate in the community and in particular the young population monitored by health centers. Therefore, the dominant issue in this study was to mesure HIV/AIDS health literacy level among young people (18-29 years). In addition, this study seeks to discover the contributing factors to health literacy level.

Materials & Methods

This was a descriptive cross-sectional study. It was conducted on 424 young people (male and female) between the ages of 18 and 29 who visit health centers (affiliated with Tehran University of Medical Sciences) in the south of Tehran as well as those in need of marriage counselling. Initially, a list of young people visiting the health centers regularly was provided. Stratified random sampling was employed to select the participants to fill in the questionnaire. Informed consent, voluntary participation, and 18-29 age range in 2021 were the criteria to enter the study. Filling in the questionnaire incompletely led to the participants' exclusion from the research. Cochran's formula was used to estimate the sample size and the sample size was 384 people. Due to the high statistical population (145608 people), the ratio (n / N) was less than 5% and there was no need to correct the formula and a one-step formula was used. To be more sure, the sample size was increased to 420 by considering a 10% drop.

$$p \& q = 0/5 \qquad t = 1/96 \qquad d = 0/05 \qquad n = \frac{t^2 pq}{d^2} = \frac{(1/96)^2 (0/5)(0.5)}{(0/05)^2} = 384$$

All ethical considerations were taken into account such as ethical code, confidentiality of information, and active voluntary participation. Ethical code was 1400-028. The following steps were taken to observe the ethical points:

1- Before completing the questionnaire, the person was informed about the objectives of the study.
2- Satisfaction of individuals to participate in the study was ensured.
3- The questionnaire did not have a name, surname, and home address.
4- Information related to the participants in the project was kept confidential by the researcher.
5- Private and confidential questions were avoided as much as possible.

To assess the HIV/AIDS health literacy of the participants, the Test of Functional Health Literacy in Adults (TOFHLA) standardized and localized by Shams et al in 2016 (12). The content validity ratio (CVR) and the content validity index (CVI) of the instrument were 0.8 and 0.77, respectively. Cronbach's alpha was 0.75 and the correlation coefficient of test-retest was 0.78.

In this study, the content validity index of the assessment tool was 0.82 and 0.80, Cronbach's alpha was 0.83 and the correlation coefficient of test and retest scores was 0.78, respectively. In reading comprehension section, the respondents' ability to read and understand authentic texts on the topic of HIV/AIDS was checked. The texts dealt with prevention, treatment, and promotion of health. The participants were asked to select the best option to fill in the blanks from the four possible choices. The individual's ability to comprehending and acting on the health educators' advice is then calculated. This section concerns explanations about the critical periods in the development of AIDS such as window period, incubation period, and the maximum period of medication for people with a suspected disease. These explanations are offered to the participants in the form of cards and then questions are asked with respect to each explanation. This section included three questions and the participants were interviewed in two minutes. The reading comprehension range fluctuated between 1 and 18 and the numeracy ranged from 1 to 3.

When the questionnaire was completed for each individual, the person's health literacy point was calculated. Each correct answer received 1 point, and incorrect answers or 'I don't know' received zero point. The sum of the points in each section was added; therefore, a raw point

reflecting each person's health literacy was calculated. The instrument employed to assess HIV/AIDS literacy rate divides the participants into two groups: those with limited knowledge (health literacy point lower than 14), and adequately literate (health literacy point above 14). To level and measure AIDS health literacy, the existing grading in the Health Literacy Survey, which was conducted in eight European countries in 2011, was used. In this study, two-thirds and five-sixths of the total possible scores were considered as separation points of different levels of health literacy. Accordingly, individuals were divided into three levels of adequate health literacy (0-33), adequate (34-42), and excellent (43-50) (12).

The data was analyzed through SPSS16 both descriptively and analytically. The descriptive statistics included frequency, nominal variables, and ordinal variables. In the analytical statistics, One-Sample Kolmogorov-Smirnov Test was used to check the equality of the distribution of the variables with normal distribution; t-test was used to compare the average health literacy rate of two groups; analysis of variance (ANOVA) was used to compare the differences of more than two groups; and Chi-Square and Pearson's Correlation Coefficient were consulted to investigate the relationships between the variables. The significance level was set to 0.05 and confidence level was 95%.

Results

The demographic characteristics of the participants in this study are shown in Table 1

Table 1: Demographic characteristics of the respondents

Variable		Frequency	Percentage	Variable		Frequency	Percentage
Gender	women	346	81.6	marital status	Single	232	54.7
	Men	78	18.4		married	192	45.3
Age	Under 20 years	106	25	Employment status	Employed	184	43.4
	20 to 25 years	156	36.8		housewife	128	30.2
	Over 25 years	156	36.8		University student	90	21.2
education	Illiterate and elementary	2	0.5		Unemployed	14	3.3
	intermediate	18	4.2		student	8	1.9
	High school and diploma	130	30.7	Type of housing	Personal	256	60.4
	Associate degree	32	7.5		Rent	134	31.6
	Masters	194	45.8		Dorm	20	4.7
	Masters	46	10.8		Relatives' house	8	1.9
Household expenses per month	Less than 2 million	100	23.6		Organizational	4	0.9
	Two to five million	138	32.5	Socio-economic status	Down	88	20.8
	Five to ten million	102	24.1		medium	326	76.9
	More than ten million	30	7.1		Top	10	2.4

The mean of HIV/AIDS health literacy in the participants was 11.53 and the standard deviation stood at 3.29. The minimum score was 1 and the maximum was 21. (table 2)

Table 2: The Mean and the Standard Deviation of the HIV/AIDS health literacy

variable	Number	minimum	maximum	Mean	Standard Deviation
reading comprehension	424	1	18	10.33	2.86
numeracy	424	1	3	1.19	1.09
health literacy	424	1	21	11.53	3.29

The results of HIV/AIDS health literacy rate reveal that only 28% of the respondents were adequately literate, and 72% had insufficient knowledge of HIV/AIDS. (fjgure 1)

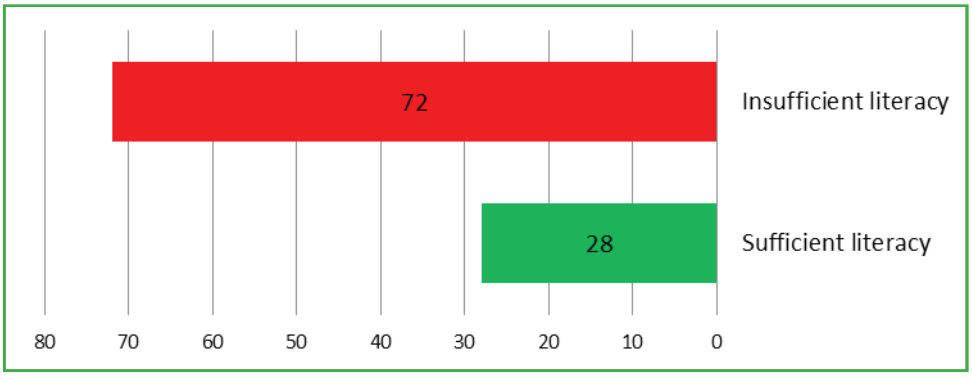

Figure 1: HIV/AIDS literacy status of young people

The results of the participants' health literacy rate show that young people are most literate and knowledgeable in these four areas:

1. How drug addicts do not contract AIDS, i.e. they use disposable syringes;
2. How somebody develops AIDS while living with HIV-positive people, e.g. by sharing bloodstained razors;
3. The most effective way to prevent AIDS while having sexual intercourse (i.e., using condoms); and
4. The only way to correctly diagnose AIDS (i.e., through blood test).

The participants were the least aware of group therapy sessions intended to improve the mental health of HIV/AIDS sufferers and their families (about 5%) and the fact that there was a phone number to get free counselling service about HIV/AIDS in most cities (nearly 6%).(table 3)

Table 3: The relative distribution of HIV / AIDS health literacy among young in the reading ability

Question	Percentage of Correct Answer
How drug addicts do not contract AIDS	94.3
How somebody develops AIDS while living with HIV-positive people	92
The most effective way to prevent AIDS while having sexual intercourse	92
The only way to correctly diagnose AIDS	91.5
The impact of the virus on the body	83
The effect of prescribed medicine on AIDS	82.5
The reliability of the sources used to get information about AIDS	81.6
Contracting AIDS without any symptoms	69.3
Ways to receive information about AIDS anonymously	64.2
The commonest cause of HIV transmission	59.4
A center to receive information about AIDS and possibly a free blood test	46.7
The necessity of AIDS test for those with a history of sexually transmitted disease (STD)	46.2

A website to receive valid information about AIDS in Persian	39.2
The possibility of contracting AIDS in an unsafe sexual intercourse (without condoms)	34
The (source of the) cost of AIDS diagnosis and treatment	26.4
The virus is transmitted; however, the blood test is negative.	19.8
A phone number to get free counselling service about AIDS in most cities	6.1
Group therapy sessions intended to improve the mental health of AIDS sufferers and their families	5.2

The first question was asked from the participants, "in October 2020, one person had an unsafe sexual intercourse with a drug addict (i.e., without a condom); therefore, he was worried about contracting AIDS. When should this person have blood test to be certain about its result?" The correct answer to this question was 'after three months', which was answered correctly by 28% of the participants. Around 45% of the participants correctly answered the second question regarding the age at which the symptoms of AIDS appear. The correct answer to this question was between 30 and 35. The third question in the research put forward this situation: while taking a blood sample from a drug addict, a nurse's hand was accidentally injured by the same syringe. Now the nurse is worried about contracting AIDS. How long should the nurse take preventive medicine? The correct response to this question was 'until 3 days', which was answered correctly by 45.5% of the participants.

The results of the independent t-test indicated that there was a significant difference between the male and female health literacy rate. Men's HIV/AIDS health literacy rate was higher than that of women (p=0.035). In fact, men's health literacy average was higher in reading comprehension section (p=0.037). There was no significant difference between men and women's numeracy (p=0.300).(table 4)

Table4: Comparison of mean and standard deviation of HIV / AIDS-related health literacy in the studied youth by gender

variable	Gender	Number	mean	Standard Deviation	t	p
health literacy	women	346	11.37	3.24	1.944	0.035
	Men	78	12.17	3.46		
reading comprehension	women	346	10.21	2.82	1.014	0.037
	Men	78	10.87	2.98		
numeracy*	women	346	1.16	1.07	1.837	0.300
	Men	38	1.30	1.10		

This section concerns explanations about the critical periods in the development of AIDS such as window period, incubation period, and the maximum period of medication for people with a suspected disease.

Single adults were more HIV/AIDS literate than their married counterparts (p=0.001). Single people also outperformed married ones in reading ability (p>0.001). However, the numeracy average was almost equal in both groups (p=0.275).(table5)

The results of analysis of variance (ANOVA) demonstrated that there was a positive and significant relationship between the participants' age and their HIV/AIDS literacy rate. In other words, those in 20-25 age group were more HIV/AIDS literate than other age groups. The results of LSD Post-hoc (least significant difference)

Table 5: Comparison of mean and standard deviation of HIV / AIDS-related health literacy in young people studied Depending on the marital status

variable	marital status	frequency	mean	Standard Deviation	t	p
health literacy	Single	232	12.01	2.83	3.415	0.001
	married	192	10.93	3.70		
reading comprehension	Single	232	10.87	2.37	13.898	0.001>
	married	192	9.67	3.25		
numeracy	Single	232	1.13	1.11	4.392	0.275
	married	192	1.25	1.07		

showed that there was a significant difference between 20-25 age group in HIV/AIDS literacy rate and other groups. This difference was not seen across other age groups.

With respect to education, young people with Bachelor's degree were more health literate than members of other groups (p>0.001). The results of LSD Post-hoc also revealed that there was a significant difference between people with Associate and Bachelor's Degree and other group members in terms of health literacy. In other words, the differences across Associate, Bachelor's, and Master's degrees were statistically significant. Respondents with Associate degree and Bachelor's degree were more health literate than those with Master's degree. Master's graduates in turn were more health literate than those with high school diploma and under. Participants from different socioeconomic backgrounds were equally HIV/AIDS literate and no significant difference was seen (p=0.202). In addition, young people from different ethnic backgrounds showed similar amounts of HIV/AIDS health literacy rate (p=0.442) (table 6).

Table 6: Comparison of mean and standard deviation of HIV / AIDS-related health literacy in the studied youth By age, education, socio-economic status, ethnicity

variable		frequency	mean	Standard deviation	F	P
Age	Under 20 years	106	10.99	3.83	4.526	0.011
	20 to 25 years	156	12.11	2.51		
	Over 25 years	156	11.24	3.51		
education	Diploma and sub-diploma	150	10.23	3.63	21.921	> 0.001
	Associate and Bachelor	226	12.42	2.46		
	Masters	46	11.30	4.27		
Socio-economic base	down	88	11.17	2.88	1.605	0.202
	medium	326	11.66	3.34		
	Top	10	10.20	4.73		
nationality	Fars	218	11.30	3.42	0.932	0.445
	Turk	125	11.77	3.25		
	kord	26	11.34	3.05		
	Lor	28	12.17	2.62		
	Other	17	12.23	2.27		

Based on the results of analysis of variance (ANOVA), the relationship between visiting health centers and HIV/AIDS health literacy rate was significant. It demonstrated that more visits meant higher rates of health literacy average (p=0.021). Accordingly, Scheffe's Post-hoc test revealed that although the participants' health literacy average with five visits and more was higher than that of others with fewer or no visits, this difference was not statistically significant (p≤0.05). In the reading comprehension section the health literacy rate with five visits was higher than that of other groups (p=0.035). However, Scheffe's Post-hoc test again showed that these differences were not statistically significant (p≤0.05). Finally, the relationship between the number of visits to health centers and numeracy-related health literacy was not significant (p=0.404). (table 7)

Table 7: Comparison of the mean and the standard deviation of the participants' HIV/AIDS health literacy on the basis of visiting health centers

Variable		frequency	mean	standard deviation	Analysis of variance test	The significance level
health literacy	I did not refer	78	11.14	3.55	1.526	0.021
	once	50	11.32	3.20		
	2 to 5 times	112	11.56	3.04		
	More than 5 times	52	12.26	3.03		
reading comprehension	I did not refer	78	10.16	3.19	2.419	0.035
	once	50	10.27	2.68		
	2 to 5 times	112	10.25	2.61		
	More than 5 times	52	10.69	2.93		
numeracy	I did not refer	78	1.17	1.09	2.977	0.404
	once	50	1.04	1.08		
	2 to 5 times	112	1.31	1.08		
	More than 5 times	52	1.57	1.01		

Discussion

The main purpose of this research was to investigate HIV/AIDS health literacy among young people monitored by health centers affiliated with Tehran University of Medical Sciences. The study was conducted on 424 young adults (18-29 years old) in 2021. The Test of Functional Health Literacy in Adults (TOFHLA), which was standardized and localized by Shams et al in 2016, was used to assess the HIV/AIDS health literacy (12). The results obtained from analyzing the questionnaire showed that only 28% of the respondents were adequately HIV/AIDS literate, and 72% lacked sufficient knowledge. Considering the non-existence of vaccine and the modes of disease transmission in Iran, if preventive plans and policies fail, this disease can turn into a critical health issue, as has happened globally. In the meantime, health educational programs designed based on health belief set can effectively prevent HIV/AIDS. According to the reports provided by the Social Studies Center affiliated with Islamic Parliament of Iran in 2020, the health literacy rate is not at an acceptable level in particular among the public society, vulnerable groups, and patients (21).

This finding is consistent with the results of other research projects such as khaleghi et al (13), Sa'atchi et al (14), Shariati Nia et al (15), Robat

Sarpooshi et al (2), Khosravi & Ahmadzadeh (6), Chehri Mohammad et al (16), Yari & Mahdi Pour (17), and Ramezan Khani et al (20). In the study of Khaleghi et al. (1398), 25.2% (70 people) had inadequate health literacy, 21.9% (61 people) had border health literacy, and 52.9% (147 people) had adequate health literacy (13). The results of the study of Davood Robat Sarposhi et al. (2015) entitled "evaluation of health literacy studies in Iran" showed that the situation of health literacy in different groups in our country is not favorable (2). According to the study of Saatchi et al. Kafi, 18.21% of their participantes had adequate health literacy, 12.29% had inadequate health literacy, and 7.14% had excellent health literacy, so the level of health literacy in Hormoz Island was low (14).

Shariatinia et al. (2014) assess HIV / AIDS literacy in the population aged 15 to 49 years living in Yasuj. They reported that most of the subjects did not have sufficient HIV / AIDS literacy (15).

Findings of Khosravi and Ahmadzadeh (2015) showed that the health literacy of patients referred to Bushehr hospitals with an average of 69.2 were borderline (6). In the study of Ismail Chehri Mohammad et al. (2015), the level of health literacy of selected families in Tehran was borderline (16). In the study of Yari and Mehdipour (2015), the largest number of librarians in public libraries in Kerman province had adequate health literacy (17).

Findings of the study of Ramezankhani et al. (2015) showed that 26.4% of medical students had insufficient health literacy and 31.2% had adequate health literacy. Also, 44.8% of non-medical students had insufficient health literacy (20).

The first hypothesis sought to investigate the relationship between gender and HIV/AIDS health literacy rate among young adults. Based on the results of Chi-Square, men (42.1%) were more HIV/AIDS health literacy than women (24.9%), and this difference was statistically significant. This finding is not compatible with that of Yari & Mahdi Pour (2015). They concluded that there was no significant difference between gender and health literacy among librarians in Kerman (17). However, one research study concerning people's awareness and attitude toward HIV/AIDS in Ilam in 2011 showed that on average girls were more literate than boys with respect to HIV/AIDS (22). Rastgar Moghaddam Kalmandi found a significant relationship between the respondents' demographic features such as gender and health literacy rate, which was conducted on library-goers in Mashhad (18). In hospitals in Bushehr, Khosravi & Ahmadzadeh (2015) similarly found the relationship between health literacy and patients' gender (6).

The results of Analysis of Variance (ANOVA) concerning age and HIV/AIDS health literacy among young adults demonstrated that the relationship between these two variables was positive and significant. In addition, adults between the ages of 20 and 25 had highest level of HIV/AIDS literacy. This result was consistent with that of Khosravi & Ahmadzadeh (2015) in which the relationship between the patients' health literacy and their age was significant (6). Shahivand (1998) had found similar results concerning age when he investigated the knowledge base of doctors and dentists regarding HIV/AIDS. Based on the results, the 25-34 age group were more knowledgeable (19). The knowledge base and awareness of people regarding HIV/AIDS in Ilam also confirmed the findings that people's attitude toward the disease undergoes positive changes with age. The 20-35 age group was the most aware of HIV/AIDS (22). Sa'atchi et al (2017) also regarded age as a crucial factor in health literacy rate. Their research indicated that older age groups lacked sufficient health literacy (14).

The third hypothesis investigated the

relationship between marital status and HIV/AIDS health literacy among young adults. Chi-square results showed that single people (31.3%) were more HIV/AIDS health literate than married ones (23.9%). Therefore, this hypothesis was confirmed. However, Yari & Mahdi Pour (2015) did not achieve similar results. They found no significant difference between the health literacy rate of librarians in Kerman and their marital status (17).

The fourth hypothesis, which was investigated to discover a significant relationship between HIV/AIDS health literacy and education, was also confirmed. In other words, the more educated participants had the more HIV/AIDS literate, except for the respondents with Bachelor's degree who were the most literate. This result was also corroborated by Yari & Mahdi Pour (2015) who found a significant difference between HIV/AIDS health literacy rate and the librarians' level of education in Kerman (17). Similarly, Chehri Mohammad et al (2015) found out that more educated parents of preschoolers were more health literate (16). Additionally, Sa'atchi et al (2017) realized that people with lower levels of education were less underst and health literacy skills in Hurmuz Island (14). Regarding the relationship among literacy, numeracy, awareness of HIV/AIDS and health-promoting behavior in Mozambique, Ciampa et al (2012) concluded that literacy rate is an important predictor of compliance with HIV/AIDS treatment (23).

The fifth hypothesis dealt with the relationship between ethnicity and HIV/AIDS health literacy among young people. The results showed no significant difference between HIV/AIDS health literacy rate and ethnicity. In fact, young adults from different ethnic backgrounds were equally HIV/AIDS literate. Therefore, the fifth hypothesis was rejected.

The results investigating the sixth hypothesis revealed that there was no significant difference between HIV/AIDS health literacy rate and socioeconomic background. In other words, young adults from different socioeconomic classes had equal HIV/AIDS health literacy rate. However, Sa'atchi et al (2017) found a close link between economic status and health literacy: poor economic conditions along with low level of education have made people on Hurmuz Island less inclined to learn about health education andhealth literacy skills (14).

The seventh hypothesis investigated the relationship between the number of visits to health centers and HIV/AIDS health literacy rate among young adults. The results of correlation coefficient proved there was a positive and significant relationship between these two variables. In other words, the number of visits positively influence and increase the rate of HIV/AIDS health literacy. Therefore, like most previous hypotheses this one was also confirmed.

This research study focused only on young adults monitored by health centers in the south of Tehran, and the results clearly indicated low HIV/AIDS health literacy. Thus, the first vital step to change and improve the health litracy status is assessing the current conditions in the whole country. Furthermore, all age groups should be studied closely. This can be accomplished through periodic national surveys to monitor HIV/AIDS health literacy.

1. In nature research, it is appropriate to use qualitative methods such as phenomenology, grounded theory, etc., along with quantitative methods to deepen the findings.
2. In this study, the focus was on AIDS literacy and social factors affecting it. It is suggested that other researchers study the consequences of low AIDS health from individual and social dimensions and study this dimension of youth health.

3. Due to the small sample size in this study, it is recommended to use more sample size and health centers for more detailed research in the future.
4. Informing research institutions to research in the field of youth AIDS health and the need to pay attention to conducting research focused on family health.
5. Due to the insufficiency of AIDS literacy in the statistical population under study, it is necessary to conduct extensive research at the national level to determine the level of AIDS literacy among young people.

The limitations of the research involved using self-reports and the population sample that only included young people monitored by health centers in the south of Tehran.

Conclusion

Since merely a third of the sample were adequately HIV/AIDS literate, it becomes extremely relevant to design educational interventions and provide the necessary conditions for the public to easily access information about HIV/AIDS. Empowering people to make wise decisions is one way to develop HIV/AIDS health literacy. The results shed light on the fact that the most vulnerable groups are less educated adults, women, and lower-income families. This points out the necessity of incorporating health literacy into mainstream educational plans and reforms to improve public health.

Considering the low HIV/AIDS health literacy among young adults, as the results prove, what is highly recommended is designing and implementing preventive measures against this disease as well as promoting health education. In light of the findings, three quarters of the research sample (almost 72%) lacked sufficient HIV/AIDS health literacy. Therefore, these measures can prove vital: awareness-raising campaigns through mass media such as TV, inclusion of sex and HIV/AIDS education as part of university and schools' curriculum, and developing awareness of the disease and its multiple modes of transmission.

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Consent for publication: Not applicable

Availability of data and materials: The datasets generated and/or analysed during the current study are not publicly available due to maintaining the privacy and confidentiality of participants, but are available from the corresponding author on reasonable request.

Conflict of interests: There was no conflict of interests among the researchers.

Ethical considerations: Informed consent was obtained from all participants. They had the right not to participate in the research and were assured that their names would not be used in any part of the research.

Financial resources: The researchers did not rely on financial assistance from any organization.

Authors' contribution: SR and FS contributed to project conception, MGh and HH did the data acquisition; FS and MGh did data analysis, literature review, and wrote the manuscript; SR and HH critically revised the successive drafts. All authors read and approved the final manuscript.

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