

## Systematic review of the knowledge and attitude about HIV and AIDS among Iranian population

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Received: 22 Nov 2015

Accepted: 12 Mar 2016

### Abstract

**Background:** Inadequate knowledge, negative attitudes are major the hindrances to prevent the spread of human immunodeficiency virus (HIV). The objective of this study was to understand the knowledge and attitude about HIV and AIDS in the Iranian population.

**Methods:** We conducted a systematic review, searching online databases through December 2015 focusing on knowledge and attitudes about HIV and AIDS in Iran. Inclusion criteria were the cases which aimed to determine the knowledge and attitudes of people, placed in Iran, and conducted in the last fifteen years. After extraction, documentation, specifications of articles and conference were classified in the Endnote software and duplicated cases were removed using this application and new review of the categories.

**Results:** Twenty four articles met criteria. The knowledge and attitude toward HIV and AIDS were generally found to be different and varied; these differences can be related to the inconsistency of research tools and applied questionnaires, the content of the questions, number of questions, the difference in the ratings and rankings, as well as sample size, methodology and study type.

**Conclusion:** We conclude that our results will guide the development of population-focused HIV/AIDS knowledge and attitude in Iran, which is to be lacking among both the general public and healthcare.

**Keywords:** AIDS, Attitude, HIV, Iranian, Knowledge, Systematic review

### Introduction

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) is not a disease, but a social, economic, political and cultural problem that the whole world is struggling with it. AIDS is a kind of disease that in terms of social involvement, its incidence and prevalence in active age, high rate of mortality and costs of intensive care

(1-4), is considered as the most important problem in our health care systems; and the most important activities for the health institutions of different countries of the world are to control, prevent and provide a good care for them (4-6). According to UNIDS report in 2015 by only 36.7 million [34.0 million–39.8 million] people were living with HIV infection worldwide. In 2015, 2.1 million [1.8 million–2.4 million] new HIV infections worldwide are added (7).

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For the new approaches for prevention, it is recommended to use antiretroviral drugs to help people at risk of HIV infection this practice, is called "pre-exposure prophylaxis," which can be an additional option to strengthen comprehensive approach to prevention. Other factors of this category include communication and behavior change, the continued use of female condoms, prevention programs for men and key populations, such as harm services reduction for people who use drugs. Anti-virus drugs are effective to prevent HIV transmission from pregnant women to their babies and reduced new infections among children by more than 50% as compared in 2009, all because of the knowledge and attitudes of people in the field of cultural transmission, treatment and prevention of AIDS (8-10). Annually, 1.6 (1.4 to 1.9) million people die due to AIDS compared in 2005, 2.3 (2.1 to 2.6) deaths from AIDS which had shown a decreasing trend (8).

The first cases of HIV in Iran were observed in 1976 in a 60-year-old child with hemophilia who had used the coagulation imported factor products infected with HIV (11). However, the prevalence of HIV infection and ADIS in Iran is less than the western countries and some countries in the region. But, according to estimates by UNAIDS in 2015, there are more than 73 000 [50 000 - 130 000] people infected with HIV in Iran as compared in 2007, where in more than 86,000 people infected with HIV, decreased (10, 12). According to different reports, most of the HIV people in Iran are drug users. Various studies reported to range from 50% to 80% (8, 13, 14). It seems that now 45 percent of people with HIV contracted the disease through injection and 36% are sexually affected; because of the young population of the country, sexual transmission method has been replaced. In the absence of appropriate programs for the prevention of sexual transmission of HIV, the prevalence of AIDS in Iran will be effective by changing the pattern (15, 16).

AIDS epidemic in Iran passed through three main phases: the first phase, transmission through blood and contaminated blood products that this epidemic phase of HIV and AIDS was passed via preventive measures. The most common way of transmission is the injection drug users. In connection with this phase, Iran tried to implement programs using disposable syringes. It is believed that Iran has the highest number of injection

drug users in Eastern Mediterranean region and North Africa, and the epidemic AIDS is concentrated among this group (14). The 45.1 percent AIDS prevalence due to transmission in drug users in Iran is the main way of transmission in our country (9, 17). Epidemic HIV in the country is going through its second phase to the third through sexual transmission (18).

Prevention is the most important way to deal with the HIV epidemic in the world. Taking a look at the infection trend and high-risk groups showed that the barriers to improving HIV prevention, lack of awareness about AIDS and its transmission ways are essential steps in prevention; however, appropriate knowledge about various aspects of the disease is not enough by itself and does not lead to the improved performance, it must improve attitude, along with knowledge (18-21).

In Iran, due to the young population of the country, the prevention of HIV epidemic requires interventions and programs based on age, sex, and so on to change the knowledge and attitudes over time. Thus, it is essential to perform regular review and assess the knowledge and attitudes of people in different age groups and those at high risk of HIV in the community.

Studies conducted in the country to assess the knowledge and attitudes towards AIDS in terms of methodology are numerous and varied. In these studies, knowledge and attitudes about prevention, transmission, treatment, etc. in different years were evaluated. The level of knowledge and attitudes over time can help policy makers and planners to clarify the current status of exploited population. The aim of this study was to understand the knowledge and attitude about HIV and AIDS in the Iranian population.

## Materials and Methods

We conducted a systematic review, searching online databases through December 2015 focusing on knowledge, and attitudes about HIV and AIDS in Iran. To collect the required data, the first phase was performed by searching the SID (Scientific Information Database), Iran-Doc, IranMedex, Magi ran abstracts, thesis, magazines (both internal and external journals), government agencies (Ministry of Health, the press, the Welfare Organization, the Ministry of Culture, the prison authorities, research centers), references and sources of the obtained papers, and the non-governmental organizations using the key words of

Table 1. Characteristics of published articles by Iranian researchers on online databases through December 2015.

| Authors                                | Year | Sample number | The most important findings  |
|--|------|---------------|--|
| Fadaei et al. (18)                     | 2007 | 500           | 47.6 % of students had good knowledge and 39.6% had moderate awareness, 48 % of students had a poor attitude and 19% with a good attitude.   |
| Etemat et al. (22)                     | 2010 | 134           | 36.6% had moderate knowledge and 49.3% had negative attitude towards AIDS  |
| Rohani rad & Kolahi (19)               | 2006 | 655           | Public awareness of 45.5% of students was good (more than 75% of questions answered correctly), 45.2 % moderate (50-74% correct answers to questions) and 9.3% poor (the correct answer in less than 25 items).  |
| Qorbani et al. (23)                    | 2010 | 115           | Total awareness of 46.5% and 49% poor or very poor attitudes of nurses.  |
| Azimian (24)                           | 2005 | 100           | The highest level of awareness among students working on PhD level and lowest level among laboratory sciences.   |
| Gashasbi et al. (25)                   | 2006 | 137           | Women's awareness about HIV transmission through shared syringe (90.9 %), mother to fetus (89.9 %), breastfeeding (57%) and the use of condom protection (63.9%) and about its treatment (51.8 %) were incorrect knowledge.  |
| Karimi et al. (26)                     | 2000 | 1850          | 23.2% of the students had very poor knowledge, 35 % poor knowledge, 34.4 % had moderate and 5.4% good knowledge and only 3% of students had perfect information.   |
| Ranjbar (27)                           | 2009 | 800           | 474 cases (59.2%) had good knowledge, 312 cases (39%) intermediate level, 14 cases (18 %) had poor knowledge, 371 cases (46.4 %) had favorable attitude and the rest had neutral and negative attitude ,respectively.  |
| Panahande & Taramian (28)              | 2004 | 850           | 11.7% of the students had good knowledge, 77.6 % moderate and 10.7 % had poor knowledge.   |
| Marashi et al. (29)                    | 2000 |               | The mean knowledge score was 20.28±0.68 and mean attitude score was 66.13±2.78 and the majority of students (88.5%) had high levels and (11.5%) moderate level. 88.75 % had a positive attitude, 11.2% had good awareness. 52.4% of subjects had a negative attitude towards HIV transmission. |
| Balali Meybodi & Mahmoudi Zarandi (30) | 2008 | 1020          | 40.1% of the couples had high level of awareness, 37.4% good, 20% moderate and 2.6% poor knowledge, and 58.4% had excellent attitude, 33.5% good, 7.1% moderate and 1.1% had poor attitude.  |
| Sanei Moqadam et al. (31)              | 2010 | 951           | 50.2% of students had good, 44% moderate and 5.8% poor knowledge. 17.1% with positive attitude, 56.9% neutral attitude and 25.9 % negative attitude.   |
| Simbar et al. (32)                     | 2007 | 58            | 96.6 %with good knowledge, 93.1 % had a positive attitude  |
| Ghorbani, et al. (23)                  | 2006 | 200           | 13.5% of nurses had high knowledge level, 34.5 % good, 43% average, 9% of poor level   |

Table 1. Continue from the previous page

| Authors                         | Year | Sample number | The most important findings  |
|---------------------------------|------|---------------|--|
| Taj Shrififar & Roshan Del (33) | 2005 | 441           | Mean score of knowledge was $99.42 \pm 33.10$ of 100 points, the highest score was 68 and the lowest score zero. 27.7% of soldiers had poor knowledge, 65.8 % moderate, 6.6 good knowledge. The mean attitude score of soldiers $78.49 \pm 72.10$ of 100. 26.1 % of soldiers gained scores higher than 80. |
| Ramazan Khani et al. (34)       | 2010 | 590           | 50.3% of the study population had low level and 36.9% of average level, and 12.7 % high knowledge level. Attitude ranking was low in 13.7%, 62.2 % moderate and 23.7 % were high.  |
| Lotfipour Rafsanjan et al. (35) | 2011 | 384           | Mean scores of knowledge was $50.4 \pm 4$ , Mean scores of attitude was $18.4 \pm 2.26$ . 89.6% of samples had good knowledge, 80.2 % had relatively positive attitude.  |
| Sadeghi & Hakimi (36)           | 2008 | 750           | 82.1% knowledge and 57.4 % had a negative attitude. (76.5 % high, 21.9% good, 1.6% moderate). The positive attitude 1%, 89% negative and 10% neutral attitude.   |
| Pakfetrat & Shahabi Nezhad (37) | 2004 | 300           | The mean knowledge level was $14.57 \pm 4.6$ , the lowest level of knowledge in the lowest attitude was in the inhabitants of rural areas  |
| Ashrafinia et al. (38)          | 2013 | 260           | Most women had moderate knowledge level (55.2%), the positive attitude of transmission and prevention ways of HIV (95.8%) and moderate level of fear of AIDS. (57.5%)  |

HIV, AIDS, knowledge, attitude for collecting published documentation.

In the next step, all the data were collected and extracted by searching databases of ISI web of knowledge, Scopus, PubMed and Science Direct and Iran papers and abstracts related to the research subject using the keywords of HIV or AIDS, as well as executing AND with knowledge and attitude keywords. In addition to the obtained documents, relevant documents from international organizations (AIDS UN and WHO) were obtained. Inclusion criteria were the cases which aimed to determine the knowledge and attitudes of people, placed in Iran, and conducted in the last fifteen years. After extraction, documentation, specifications of articles and conference were classified in the Endnote software and duplicated cases were removed using this application and new review of the categories.

## Results

The results of studies about awareness were analyzed by assessing the average score of knowledge,

level of awareness, percentage and rankings. The reported awareness level fluctuated and most studies have noted low levels of awareness (Table 1). The results of studies on women's attitudes toward AIDS in the reviewed literature showed that reported attitudes as an average point of attitude, and the attitude of the ranking were reported. In most studies, attitude was ranked by positive and negative points. The assessment tool to evaluate awareness was a researcher –made questionnaire with the different questions number.

## Discussion and Conclusion

In this study, 24 researches on the knowledge and attitude toward AIDS were evaluated. The studied articles, the different and diverse knowledge levels about AIDS have been reported. Sediqi examined the dental students' knowledge and attitudes which were about 1.82 % and 57.4 %, respectively (36). Ramezani Tehrani and Malek-Afzali in 2003 conducted a study on 754 cases 15-25 years old, which showed that the level of awareness about AIDS was lower than the average, especially in people with high-risk sexual behavior (39).

Also Ayranci (2005) in a epidemiology study in Turkey evaluated that the knowledge level of participants was relatively good which had a significant relationship with their education level, and they also found that studied people's attitudes toward AIDS patients and community support was fairly positive (40).

The results of these studies and other studies indicated the necessity to improve the knowledge and skills necessary to empower AIDS related matters. In these studies, the attitudes toward AIDS were varied. As in Kolahi's study in 2004, the students' attitude towards HIV was positive (35).

In the obtained articles, the knowledge and attitude toward AIDS were different and varied; these differences can be related to the inconsistency of research tools and applied questionnaires, the content of the questions, number of questions, the difference in the ratings and rankings, as well as sample size, methodology and study type. So, it is important to check the level of knowledge and attitude toward AIDS using a comprehensive questionnaire that has been developed according to the cultural and social conditions of the society. Today, awareness about AIDS has a good growth, but the prevalence of disease and its nature-dependent behavior suggests that only effective training can lead to a change in attitude and behavior. Besides, the training should provide skills to avoid risky behaviors. If the individual's knowledge fails to provide the preventive skills of risky behaviors, it cannot play any role in reducing the prevalence of this disease.

### Acknowledgements

The authors would like to thank the research deputy of Shahroud University of Medical Sciences.

### Conflict of interest

None declared.

### References

1. Adeoye-Agboola DI, Evans H, Hewson D, Pappas Y. Factors influencing HIV disclosure among people living with HIV/AIDS in Nigeria: a systematic review using narrative synthesis and meta-analysis. *Public health*. 2016 Jul; 136:13-28.
2. Farahani M, Mulinder H, Farahani A, Marlink R. Prevalence and distribution of non-AIDS causes of death among HIV-infected individuals receiving antiretroviral therapy: a systematic review and meta-analysis. *International journal of STD & AIDS*. 2016 Feb10 .
3. Goldberg RE, Short SE. What do we know about children living with HIV-infected or AIDS-ill adults in Sub-Saharan Africa? A systematic review of the literature. *AIDS care*. 2016 Mar;28 Suppl 2:130-141.
4. Rimaz S, Nikooseresht Z, Vesali S, Nedjat S, Asadi-Lari M. A study on factors that drive variation in the levels of social capital among people living with HIV/AIDS in Iran. *Global journal of health science*. 2015; 7(3):351-357.
5. Masoudnia E. Public perceptions about HIV/AIDS and discriminatory attitudes toward people living with acquired immunodeficiency syndrome in Iran. *SAHARA J : journal of Social Aspects of HIV/AIDS Research Alliance / SAHARA* , Human Sciences Research Council. 2015; 12:116-122.
6. Haghgoo SM, Joula H, Mohammadzadeh R, Sabour S, Yousefi R, Ghahramani G, et al. Epidemiology of HIV/AIDS in the East Azerbaijan Province, Northwest of Iran. *Jundishapur journal of microbiology*. 2015 Aug; 8(8):e19766.
7. WHO. Global AIDS Update UNAIDS report2016. Available from: [http://www.who.int/hiv/pub/arv/global-AIDS-update-2016\\_en.pdf?ua=1](http://www.who.int/hiv/pub/arv/global-AIDS-update-2016_en.pdf?ua=1).
8. Fallahzadeh H, Morowatisharifabad M , Ehrampoosh MH. HIV/AIDS epidemic features and trends in Iran, 1986–2006. *AIDS and behavior*. 2009;13(2):297-302.
9. Simon V, Ho DD, Abdool Karim Q. HIV/AIDS epidemiology, pathogenesis, prevention, and treatment. *Lancet*. 2006 (9534):489-504.
10. Doroudi F .Islamic Republic of Iran AIDS Progress Report, On monitoring of the United Nations general assembly special session on HIV and AIDS 2013. Available from: <http://www.unaids.org/en/regionscountries/countries/islamicrepublicofiran>.
11. Razani N, Mohraz M ,Kheirandish P, Malekinejad M, Malekafzali H, Mokri A, et al. HIV risk behavior among injection drug users in Tehran, Iran. *Addiction*. 2007; 102(9):1472-1482.

12. Montazeri A. AIDS knowledge and attitudes in Iran: results from a population-based survey in Tehran. *Patient Educ Couns*. 2005;57(2):199-203.
13. Unicef. Islamic Eepublic of Iran. HIV/AIDS in Iran2016. Available from: [http://www.unicef.org/iran/media\\_2016.html](http://www.unicef.org/iran/media_2016.html).
14. Zamani S, Kihara M, Gouya MM, Vazirian M, Nassirimanesh B, Ono-Kihara M, et al. High prevalence of HIV infection associated with incarceration among community-based injecting drug users in Tehran, Iran. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2006; 42(3):342-346.
15. Fallahi H, Tavafian SS, Yaghmaie F, Hajizadeh E. Living with HIV: a qualitative research. *Payesh Journal of the Iranian Institute for Health Sciences Research*. 2013; 12:243-253.
16. Samimi-Rad K, Toosi MN, Masoudi-nejad A, Najafi A, Rahimnia R, Asgari F, et al. Molecular epidemiology of hepatitis C virus among injection drug users in Iran: a slight change in prevalence of HCV genotypes over time. *Archives of virology*. 2012; 157(10):1959-1965.
17. Sharifi-Mood B, Keikha F. Seroprevalence of human immunodeficiency virus (HIV) in pregnant women in Zahedan, Southeastern Iran. *Journal of Research in Medical Sciences*. 2008;13:186-188.
18. Fadaei M, Saneimoghaddaam E, Khosravi E. Knowledge, attitude, and practice on HIV/AIDS among Chabahar high school students in 2007 *Scientific Journal of Iranian Blood Transfusion Organization* . 2010;7(3):170-177 (Farsi).
19. Rohani Rad S, Kolahi AA. Knowledge and attitudes towards HIV/AIDS *Research in Medicine*. 2006; 30 (2):137-143 (Farsi).
20. Nojoumi M, Shojaei H, Amerian M. Knowledge of high school students about AIDS; Tehran, 2002. *Hakim*. 2003;6(3):41-46 (Farsi).
21. Ghodsi Z, Goodarzi S, Mesgari N. The Rate of Awareness and Attitudes of IAU Student's of Toyserkan on AIDS and Influential Factors on It. *Research in Curriculum Planning*. 2008;1(16):139-150 (Farsi).
22. Etemat S, Heidari A ,honor Ardabil H, Kabir MJ, Honesty SM. Knowledge and attitudes towards AIDS in high-risk groups of injecting and sexual and relationship with socio-economic characteristics in Golestan province *Journal of Gorgan University of Medical Sciences*. 2010;12(2) 70-63:(Farsi).
23. Ghorbani GH, Mehrabi Tavana A, A. AR. Knowledge Assessment in Nurses of Baqiyatallah (a.s.) Hospital about AIDS. *J Mil Med*. 2006 8 (2):91-96 (Farsi).
24. Azimian J. Knowledge of students on AIDs in Qazvin University of Medical Sciences .*The Journal of Qazvin University of Medical Sciences*. 2005; 9 (3) :94-96;9(3):94-96 (Farsi).
25. Goshtasbi A, Vahdaninia M, Rezaee N. Knowledge of married women in Kohgilouyeh & Boyerahmad urban areas on AIDS and sexually transmitted infections. *Armaghane danesh*. 2006 11(3):100-107 (Farsi).
26. Karimi M, Shahbazi L, Samet M, Hadizadeh M. Attitude and knowledge of high school students in Yazd towards AIDS. *Journal of Shahid Sadoughi University of Medical Sciences and Health Services* 2001;8(4):5-10 (Farsi).
27. Ranjbar H. Knowledge and attitude of high school students in the city Torbat AIDS in 2008 *Journal of Infectious Diseases and Tropical Medicine*. 2009;14(45):51-56.
28. Panahandeh Z, Taramian S. Knowledge and attitude of non-medical students towards AIDS . *Journal of Guilan University of Medical Sciences*. 2004;13(40):20-26 (Farsi).
29. Marashi T, Foladvand O, Khedmati M, Shahri P. Knowledge and attitude of faculty of health students towards HIV/AIDS *Jundishapur Journal of Health Sciences - 1389,13(2):P1-14-1:(3)2;2010 . 14Farsi (Farsi)*.
30. Balali Meybodi F, Mahmoudi Zarandi M. Knowledge and Attitude of Couples, Referring to Kerman Pre-marriage Counseling Center, towards AIDS, 2008. *Strides in Development of Medical Education*. 2009;6(2):173-180 (Farsi).
31. Sanei Moghaddam E, Khosravi S, Abiz A, Marashi N, Nahr Karon M, Sarhadi I. Knowledge, attitude and practice toward HIV/AIDS among students of Zahedan Islamic Azad University. *The Scientific Journal of Iranian Blood Transfusion Organization (Khoon)*. 2011; 7(4):2) 13-06(Farsi).
32. Simbar M, Shayanmanesh M, Naheedi F, Akbarzadeh A. Knowledge, attitude and practice of midwives about HIV/AIDS prevention in selected

- hospital in Isfahan city. *Pajoohandeh Journal* ; 12 (6) :. 2008;12(6):535-540 (Farsi).
33. Taj Shrififar S, Roshan Del M. A survey on the knowledge and attitude of Iranian about HIV/AIDS during the training course of their military service conducted in Tehran. *Annals of Military and Health Sciences Research*. 2005;3(2):565-573 (Farsi).
  34. Ramazan Khani A, Rostami S, Shokrolah A. Evaluations of the rate of awareness and attitude of high school students in Tehran government schools towards AIDS. *Journal of Shahid Sadoughi University of Medical Sciences And Health Services*. 2010;11 (Suppl.1):42-47 (Farsi).
  35. Lotfipur Rafsanjan S, Ravari A, Akbarinasab J. Knowledge, attitude and practice of non-medical students to the ways of transmission and prevention of AIDS in Rafsanjan city *Iranian Journal of Nursing Research*. 2011;6(22):31-39 (Farsi).
  36. Sadeghi M, Hakimi H. Iranian dental students' knowledge of and attitudes towards HIV/AIDS patients. *Journal of dental education*. 2009 Jun;73(6):740-745.
  37. Pakfetrat A, Shahabi Nezhad H. A study on general knowledge of the patients referring to Mashhad dental school about AIDS. *Journal of Mashhad Dental School*. 2005;28(3-4):141-150 (Farsi).
  38. Ashrafinia F, Janani L, Khajeh Kazemi R, Dastoorpour M. The Relationship between fear of AIDS with childbearing age women knowledge and attitude toward AIDS. *Razi Journal of Medical Sciences*. 2014;20(117):76-84 (Farsi).
  39. Ramezani Tehrani F, Malek-Afzali H. Knowledge, attitudes and practices concerning HIV/AIDS among Iranian at-risk sub-populations. *Eastern Mediterranean health journal*. 2008;14(1):142-156.
  40. Ayranci U. AIDS knowledge and attitudes in a Turkish population: an epidemiological study. *BMC public health*. 2005;5:95.