

Investigating the Awareness and Attitude of Pregnant Women Visiting Health Centers about AIDS in Salmas, Iran

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p>	<p>Background & aim: AIDS is an incurable, due to the presence of a latent viral reservoir, but preventable disease. Measuring awareness and attitudes towards AIDS in different populations in each region seems essential. Considering the vulnerability of pregnant women, this study aimed to investigate the awareness and attitude of pregnant women about AIDS.</p>
<p><i>Article History:</i> Received: 19-May-2020 Accepted: 18-Oct-2020</p>	<p>Methods: This cross-sectional study was conducted on 200 pregnant women referred to medical centers, clinics, and health centers of Salmas, West Azerbaijan, and Iran during eight months of random sampling. To collect data self-structured awareness and attitude questionnaires were used. The data was analyzed using chi-square test and Spearman and Pearson correlation coefficient using IBM SPSS [version 24.0].</p>
<p><i>Key words:</i> Pregnant Women Awareness Attitude AIDS</p>	<p>Results: The results of the study showed that most of the women surveyed were from the urban population (60%), with high school education (39.5%), with a housewife job (70.5%), and their sources of information, were radio and television (35%). The level of awareness of pregnant women (61.5%) was assessed at the intermediate level. The positive attitude was observed in 76% of respondents. The attitude score did not show a significant relationship with the level of education and job, but it showed a significant relationship with their age.</p> <p>Conclusion: The level of awareness and attitude of the pregnant women under study was moderate and so relatively adequate. It is expected that with the expansion of scientific knowledge about AIDS, the awareness of people in each society to be increased.</p>

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Introduction

Infectious diseases are among the diseases that cause the death of many people every year (1). In most parts of the world, sex is the most important cause of HIV transmission, and the biggest concern is for sexually active young people. Because women are more biologically susceptible than men, protecting women is very important (2). As the AIDS epidemic spreads, a wider range of people with different cultures and social backgrounds are affected. Patients with AIDS may be constantly anxious, losing

their jobs, or being rejected by family and community (3). It is estimated that in 2019, about 38 million people in the world are living with HIV, while around 690000 people have died from AIDS-related illnesses (4). Today, there are 1.5 million pregnant women and 3.2 million children with AIDS in the world. 240,000 children worldwide became infected with HIV in 2013: a new infection every two minutes. (5).

In Iran, by 2018, 61,000 people were infected with HIV, 15,000 (25%) were women. HIV

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treatment was higher in women than men, while 27% of adult women were treated for HIV, compared with 17% of adult men. 81% of pregnant women with HIV had access to antiretroviral drugs to prevent the transmission of the virus to their children. Early diagnosis shows that the percentage of infants who were exposed to HIV and tested before eight weeks was 40% (6).

With the use of antiretroviral drugs in pregnant women, the risk of transmitting AIDS from mother to baby is significantly reduced (7). With the progression of HIV in a pregnant woman, the risk of miscarriage and preterm delivery is high (8). In recent years, the World Health Organization (WHO) has adopted a program to ensure that all pregnant women, mothers, and children receive the necessary training and coverage to prevent AIDS (9). On the other hand, Pregnancy Challenges Increasing stress on women while living with AIDS. Finding psychological solutions to help them can be effective in the health of mothers and children (10).

Mother-to-child transmission is an important concept, including the transmission of HIV to a mother who is known to have HIV to her child during pregnancy, delivery, labor, or breastfeeding (10).

Nyarko et al in 2019 studied a descriptive cross-sectional design about Knowledge, attitudes, and practices regarding the prevention of mother-to-child transmission of HIV among pregnant women in Ghana. Conclusions show that the level of knowledge about PMTCT in this area is high and the participants' attitude towards PMTCT is positive (11).

In Iran, women play a key role in the social and economic development of the family, as well as welfare and public health. Hence, women's knowledge and attitudes about preventing or combating HIV / AIDS are essential. In 2018, Zarei and colleagues' study showed those Iranian women's knowledge and attitudes toward people living with HIV are unacceptable, which should be considered as a major concern (12).

Most studies in Iran have been conducted in academic settings or major cities of our country, or have not been based on the response to a survey on AIDS or pregnant women. Therefore,

given the gap in this area, the article tries to examine the knowledge and attitudes of pregnant women about AIDS in Salmas.

Materials and Methods

This cross-sectional study was performed on 200 women of childbearing age in the age range of 18-35 years visiting medical centers, clinics, and doctors' offices in Salmas (West Azerbaijan). The statistical population of pregnant women was about 425 people, which according to the Morgan table; the statistical sample size is 200 people. Inclusion criteria in this study were only pregnant women with the approval of a doctor or midwife and having a test sheet or ultrasound who had been referred to the office for care. Exclusion criteria in this study are non-pregnant women referring to the doctor's office or midwife as well as pregnancy control centers of health departments. A simple random sampling method was done for 8 months from the second half of April to the end of December 2019 without alternatives and through interviews by trained people.

Data collection tools include demographic checklist: age, level of education (high school, diploma, bachelor's and above), employment status (employee, self-employment and housewife), place of residence (urban and rural) and source of information about AIDS (radio and television, schools and universities, health centers and virtual networks) and two questionnaires included questions related to measuring the level of awareness and attitude, as described below:

Ten questions related to the awareness of pregnant women: (1) Is AIDS a virus; (2) can AIDS be a contagious infectious disease ; (3) Is AIDS contagious ;(4) Is the disease contagious during the latent period (not detectable);(5) Can AIDS be asymptomatic for a long time;(6) Is blood testing the only definitive way to diagnose AIDS;(7) Can AIDS be transmitted from an infected mother to her child, blood and its products, and sex;(8) Is AIDS transmitted through insect bites, swimming pools, toilets, and baths, shared food containers and kiss;(9) Is educating people the most important and best way to prevent it;(10) Can AIDS be cured.

Ten questions related to the attitudes of pregnant women:

(1) Our society is at risk of AIDS; (2) The fight against AIDS in Iran is essential; (3) Only sinners get AIDS; (4) A person with AIDS is not allowed in the community; (5) People with AIDS are worthless creatures; (6) The government and specialists are responsible for fighting AIDS; (7) People will be protected from AIDS by doing the right thing; (8) I want to participate in the AIDS prevention program; (9) A person with AIDS is only responsible for his or her illness; (10) Following moral standards in an Islamic society can be a factor in preventing and not transmitting AIDS.

In the section on questions related to awareness assessment, score 2 was assigned to the answer yes, score 1 was assigned to the answer no, and score 0 to I have no answer. The total score of the questionnaire was set between 0 and 20, which the criterion for measuring the level of awareness was the number of yes answers and the total score obtained was conventionally divided into three groups: weak (0-10), medium (10-15) and desirable (15-20). In the questionnaire Positive and negative were considered, which were classified based on a scale of 3 points of the answer in favor (score two), opposite (score one) and no answer (score zero); obtaining a score of 50% and above is a positive attitude and less than that was considered a negative attitude (2). The questionnaire was presented to 5 expert professors to express their opinions on the questions in the questionnaires using the options "necessary", "useful but unnecessary" and "unnecessary" for each question. Thus, by calculating the relative content validity ratio (CVR) and content validity index (CVI), the content validity of all items in the questionnaires was checked and confirmed based on the CVR decision table and the minimum value for CVI was acknowledged. Its validity was set at 0.99%. Likewise, after statistical analysis, Cronbach's alpha of 0.71 and 0.83 for the Awareness and Attitude Assessment Questionnaire was calculated, respectively. Looking at records, in the Rohit Kumar Verma study in Malaysia as well as in the study of Etemad et al. In Golestan, Cronbach's alpha was considered as 0.75 & 0.72 respectively (13, 3).

The approximate time for filling the questionnaire for each person was about 15-25 minutes as a self-report, which was completed by the trained questioner for 8 months in a suitable place of the research environment as an interview, without any interference. It should be noted that before completing the questionnaire, the objectives of the plan were explained in detail to each individual of the target population, and after obtaining the informed oral and written consent of the candidates, the questionnaires were completed. It should be noted that the present questionnaire is taken from the study of Mosalanejad et al. (Ethics code number: 38/96) (14).

Data were analyzed using IBM SPSS (version 24.0) and descriptive statistical indicators such as frequency, mean, standard deviation and, chi-square test and Spearman and Pearson correlation coefficient. The significance level in this study was 0.05%.

Results

In this study (n=200) pregnant women referred to health centers participated. The age of entry was 18-35, with a mean age of 28.13 ± 5.272 , with a maximum age of 40 years and a minimum of 17 years. The highest frequency in this study is from 60% of the urban population (n = 120), who have 39.5% (n = 79) high school education, 70.5% (n = 141) housewives and their source of information about AIDS 35% (n = 70) was radio and television (Table 1).

Most of the women in the study with a frequency of 91% (n=200) knew about AIDS (they were above average in the classification of the awareness score) and 55% (n=110) considered the cause of the disease to be a virus. 75% (n=150) of pregnant women considered AIDS to be contagious and 85% (n=170) considered the disease to be transmitted through sexual intercourse and blood (Table 2).

Most women had a positive attitude towards AIDS prevention with a frequency of 76% (n=200); 68% (n=136) of the women in the study in response to attitudinal questions agreed with the beliefs and family standards and 80% (n=160) agreed with the fight against this disease in the country (Table 3).

Table 1. Frequency Distribution of education level, job and source of information in pregnant women

Variable	Frequency (%)
age categories	
Under 20 years	19 (9.5)
21-25	50 (25)
26-30	62 (31)
31-35	50 (25)
Over 35 years old	19 (9.5)
Level of education	
High school	79 (39.5)
Diploma	70 (35)
University	51 (25.5)
job	
Housewife	141 (70.5)
Self-employment	30 (15)
Employee	29 (14.5)
Source of information	
radio and TV	70 (35)
Schools and universities	31 (15.5)
Health centers	66 (33)
social networks	33 (16.5)
the place of residence	
Urban	120 (60)
Rural	80 (40)

Table 2. Frequency distribution of answers to questions related to the awareness of pregnant women

No	Yes (%)	No (%)	No Answer (%)
1	55	22.5	22.5
2	59.5	21	19.5
3	75	17.5	7.5
4	52	12.5	35.5
5	67.5	10	22.5
6	74	9	17
7	85	6	9
8	33	52	15
9	77.5	12.5	10
10	40	35	25

Table 2a. Frequency table (virus; disease agent)

		Frequency (%)
Valid	I have no answer	45 (22.5)
	no	45 (22.5)
	yes	110 (55.0)
	Total	200 (100)

Table 2b. Frequency table (awareness score)

		Frequency (%)
Valid	Weak	18 (9.0)
	medium	59 (29.5)
	Optimal	123 (61.5)
	Total	200 (100)

Table 3. Frequency distribution of answers to questions related to the attitudes of pregnant women

No	Agree	Disagree	No comment
1	70	7.5	22.5
2	80	5	15
3	15.5	66	18.5
4	17.5	65	17.5
5	17	65	18
6	56	16.5	27.5
7	65	5	30
8	62.5	7.5	30
9	40	36	24
10	68	5	27

The highest level of awareness was related to 36.6% (n=45) of the desired level of the awareness belonging to women with the level of diploma education and the lowest level of awareness was related to 83.3% (n=15) of the poor level of the awareness belonging to women with the level of high school education. The highest level of awareness, with 69.9% (n=86) of the desired awareness class belonging to housewives, and the lowest level of awareness, with 77.8% (n=14) of the poor awareness class belonging to housewives. The highest percentage of positive attitude, related to 39.5% (n=60) of the positive attitude class belonging to women with the level of high school education and the highest percentage of negative attitude, related to 39.6% (n=19) of the negative attitude class belonging to

women with the level of Diploma, the highest percentage of positive attitude, related to 71.7% (n=109) of the positive attitude class belonging to housewives and the highest percentage of negative attitudes was related to 66.7% (n=32) of the negative attitude class belonging to housewives.

Awareness showed a significant statistical relationship with the level of education ($p < 0.001$), but no significant statistical relationship was observed between the awareness score with a job ($p = 0.58$) and age ($p = 0.382$). There was no significant statistical relationship between the attitude score with the level of education ($P = 0.566$) and the job ($P = 0.257$); the attitude score had a weak correlation with women's age ($r = 0.167$ and $P = 0.018$); (Table 4).

Table 4. Relationship between awareness and attitude with the women's level of education and job

Variable	Awareness	Weak	Medium	Optimal	P-value	Positive attitude	Negative attitude	P-value
Level of education	High school	15 (83.3%)*	27 (45.8%)	37 (30.1%)	0.0000	60 (39.5%)	19 (39.6%)	0.566
	diploma	2 (11.1%)	23 (39.0%)	45 (36.6%)		51 (33.6%)	19 (39.6%)	
	university	1 (5.6%)	9 (15.3%)	41 (33.3%)		41 (27.0%)	10 (20.8%)	
	housewife	14 (77.8%)	41 (69.5%)	86 (69.9%)		109 (71.7%)	32 (66.7%)	
job	Self-employment	3 (16.7%)	11 (18.6%)	16 (13.0%)	0.580	20 (13.2%)	10 (20.8%)	0.257
	employee	1 (5.6%)	7 (11.9%)	21 (17.1%)		23 (15.1%)	6 (12.5%)	

Discussion

The risk of transmitting AIDS due to safety measures depends on the knowledge and awareness of people in the community

about the disease. Research shows that South Africa has a high prevalence of HIV/AIDS in the world (15). Anal and anal-oral sex plays a very important role in the transmission of HIV in sexual intercourse (16).

In the present study, the purpose of this project was to investigate the level of knowledge and attitudes of pregnant women about AIDS and how much they are aware of the disease.

Most women in the study knew about AIDS, and on average they considered AIDS to be a contagious and viral disease. The highest percentage of awareness about AIDS was observed in people with diplomas and housewives.

In Ashrafinia et al.'s study, conducted in 2012, the study included 260 pregnant women. In this study, 96.2% of women knew about AIDS and 90.8% of the cause of the disease was a virus. The highest level of awareness about AIDS was observed in people with a university education level of 45.7%. In this study, the age of the subjects in the age range was 19-37 years, which did not correspond much according to the present study (2).

A 2008 study by Andersson et al. in China examined 291 pregnant women. The age range of the subjects was between 20-36 years. The study was conducted in two groups of women (Uighur and Chinese Han). Thirteen percent of Uighur and 79 percent of Chinese lived in urban areas. Eighty-seven percent of Uighur and 74 percent of Chinese Han knew AIDS. 77% of Uighur and 65% of Chinese Han heard about HIV for the first time, which was not consistent with the present study (17).

Scientific sources see health education as the only effective way to fight AIDS, stressing those high-risk and vulnerable groups should be a top priority in educational programs (18). AIDS threatens every country and every society. Therefore, measures should be taken by the government and voluntary organizations to prevent the spread of the disease. What is clear about AIDS is that if the necessary training for prevention is not provided to the community in time, it will see an increase in disease and long-term treatment conflicts (19).

In Ashrafinia et al.'s study, no significant relationship was observed between people's awareness and age, and no significant relationship was observed with the level of education of those studied, which is consistent with the present study (2). In the study of Mosallanejad et al., A significant relationship between age and level of awareness of

individuals was observed and the attitude score with the level of education was shown to be considerable, which was not seen in the present study (14). In Lamina et al.'s study, 58.8% of pregnant women knew about AIDS. In this study, there was no significant relationship between education and awareness (20).

In this study, 91% of pregnant women knew about AIDS and 55% of them considered the virus to be the cause of the disease. According to Ashrafinia, Anderson, and Lamina, there is a close relationship between these three studies and the present study.

In the present study, awareness showed a significant relationship with the level of education. But there was no significant relationship between the level of awareness of employment and people's age. There was no significant relationship between the attitude score with the level of education and job. The attitude score showed a weak correlation with women's age.

The limitations of the forthcoming study include social and cultural backgrounds as well as the statistical population and its research sample includes pregnant women in Salmas and the results cannot be generalized to other parts of the province. On the other hand, so far, the studies conducted are not specific to pregnant women or have not included the issue of AIDS awareness and attitudes, so we are facing a study gap in this area.

Given the risk of the spread of AIDS and the limitations of education and the ways of transmission and prevention of AIDS, which is one of the cultural obstacles and problems related to the disease, to be safe from this disease, extensive and comprehensive intra-sectorial cooperation is necessary. It is also necessary to determine the current level of attitude and awareness of the people to improve the health of the society based on the correct public knowledge of the disease and ways to deal with and prevent it (21). Also, the authors suggest that to find better results and solve problems in this field, sampling should be done on a larger scale, such as in medical centers in other cities of Iran.

Conclusion

The purpose of researching in this field was to help better understand AIDS in the level of

awareness and attitude of individuals to be able to implement other factors in future studies. According to the obtained results and unsatisfactory level of awareness of pregnant women and insignificance of statistical indicators, it can be concluded that this issue shows the lack of attention and proper training of health officials in urban and rural areas and the need for more care training Pregnancy by doctors and midwives. Because the prevention of diseases and the lack of attention of some groups to health issues has led to low awareness of AIDS.

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Conflicts of interest

Authors declared no conflicts of interest.

References

1. Workie Tigabu, Gizew Dessie. Knowledge, Attitude and Practice towards Prevention of Mother to Child Transmission (PMTCT) of HIV/AIDS among Pregnant Mothers at Nigist Eleni Mohammed Memorial General Hospital (NEMMGH), Hosanna, Southern Ethiopia. *Journal of HIV/AIDS & Infectious Diseases*. 2018; 4(101): 1-11.
2. 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.
3. Etemad K, Eftekhari Ardabili H, Rahimi A, Gouya M, Heidari A, Kabir M. Attitudes and Knowledge of HIV Positive Persons and High Risk Behaviors Groups in Golestan, Iran. *Iranian Journal of Epidemiology*. 2011; 7(1): 23-31.
4. Case KK, Johnson LF, Mahy M, Marsh K, Supervie V, Eaton JW. Summarizing the results and methods of the 2019 Joint United Nations Programme on HIV/AIDS HIV estimates. *AIDS (London, England)*. 2019; 15; 33(Suppl 3): S197.
5. Richter L, Rotheram-Borus MJ, Van Heerden A, Stein A, Tomlinson M, Harwood JM, Roachat T, Van Rooyen H, Comulada WS, Tang Z. Pregnant women living with HIV (WLH) supported at clinics by peer WLH: a cluster randomized controlled trial. *AIDS and Behavior*. 2014; 1;18(4): 706-15.
6. Hocke C, Morlat P, Chene G, Dequael L, Dabis F. The Group d"Epidemiologie Clinique de SIDA an Aquitaine: Prospective cohort study of the effect of pregnancy on the progression of human immunodeficiency virus infection. *Obstetrics & Gynecology*. 1995, 86:886-891.
7. De Cock K, Fowler M, Mercier E, de Vincenzi I, Saba J, Hoff E, et al. Prevention of Mother-to-Child HIV Transmission in Resource-Poor Countries. *Translating Research into Policy and Practice*. *Journal of the American Medical Association*. 2000, 283:1175-82.
8. Hansson M, Stockfelt L, Urazalin M, Ahlm C, Andersson R. HIV/AIDS awareness and risk behavior among students in Semey, Kazakhstan: a cross-sectional survey. *BMC International Health and Human Rights*. 2008; 1; 8 (1):14.
9. Ashaba S, Kaida A, Coleman JN, Burns BF, Dunkley E, O'Neil K, Kastner J, Sanyu N, Akatukwasa C, Bangsberg DR, Matthews LT. Psychosocial challenges facing women living with HIV during the perinatal period in rural Uganda. *PLoS One*. 2017; 12(5): e0176256.
10. Vrazo AC, Sullivan D, Phelps BR. Eliminating mother-to-child transmission of HIV by 2030: 5 strategies to ensure continued progress. *Global Health: Science and Practice*. 2018; 6(2) :249-56.
11. Nyarko V, Pencille L, Akoku DA, Tarkang EE. Knowledge, attitudes and practices regarding the prevention of mother-to-child transmission of HIV among pregnant women in the Bosome Freho District in the Ashanti region of Ghana: a descriptive cross-sectional design. *PAMJ-Clinical Medicine*. 2019; 26; 1(69): 1-13.
12. Zarei E, Khabiri R, Tajvar M, Nosratnejad S. Knowledge of and attitudes toward HIV/AIDS among Iranian women. *Epidemiology and health*. 2018; 40: e2018037.
13. Verma RK, Wong S, Chakravarthi S, Barua A. An assessment of the level of awareness, attitudes, and opinions of the medical students concerning HIV and AIDS in Malaysia. *Journal of Clinical and Diagnostic Research*. 2014; 8(4): HC10.
14. Mosalanejad H, farahmandfard M A, noroozi M, torabi S, alipanah M. Knowledge and attitude of marriage candidates attending in pre-marriage counseling classes about AIDS in Jahrom. *Journal of Jahrom University of Medical Sciences*. 2017; 15 (4): 9-15.
15. Punde PA, Punde S. Comprehensive Survey to Study Awareness, Knowledge and Attitude towards HIV/AIDS and Hepatitis B amongst Dental Professionals Working in Rural India. *Journal of maxillofacial and oral surgery*. 2014; 13(4): 483-7.
16. Colmenero C, Gamallo C, Pintado V, Patron M, Sierra I, Valencia E. AIDS-related lymphoma of the

- oral cavity. *International journal of oral and maxillofacial surgery*. 1991;20(1):2-6.
17. Rena Maimaiti, Rune Andersson. Awareness and Attitudes about HIV among Pregnant Women in Aksu, Northwest China. *The Open AIDS Journal*. 2008; 2: 72-77.
 18. Molla M, Astrøm AN, Berhane Y. Applicability of the theory of planned behavior to intended and self-reported condom use in a rural Ethiopian population. *AIDS Care*. 2007; 19(3): 425- 31.
 19. Okonkwo KC, Reich K, Alabi AI, Umeike N, Nachman SA. An evaluation of awareness: attitudes and beliefs of pregnant Nigerian women toward voluntary counselling and testing for HIV. *AIDS Patient Care and STDs*. 2007; 21(4): 252-60.
 20. M. A. Lamina. A survey of awareness and knowledge of mother-to-child transmission of HIV in pregnant women attending Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria. *Open Journal of Obstetrics and Gynecology*. 2012; 2(2): 98-105.
 21. Oni AA. Education: An antidote for the spread of HIV/AIDS. *Journal of the Association of Nurses in AIDS Care*. 2005; 16(2): 40-8.