Knowledge and attitude about HIV/AIDS of schoolteachers in Yazd, Islamic Republic of Iran

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معارف ومواقف معلمي المدارس في يَزْد بجمهورية إيران الإسلامية، حول فيروس العوز المناعي البشري ومرض الإيدز

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الخلاصة: أجريت دراسة مقطعية شملت 290 معلما في عشر مدارس مرتفعة المستوى في مدينة يَزْد في جمهورية إيران الإسلامية. وتبين أن أكثر من 90٪ منهم قد تلقوا بالفعل معلومات حول فيروس العوز المناعي البشري ومرض الإيدز، ولم تزد نسبة من هو على دراية بالطرق الصحيحة لانتقال الفيروس/الإيدز سوى 207 منهم (71.4٪). وكان لدى غالبيتهم معرفة بانتقال المرض عن طريق الاتصال الجنسي (93.1٪)، وعن طريق نقل الدم المصاب بالعدوى (92.1٪). في حين كان بعضهم (20.3٪) يعتقد بإمكانية انتقال المرض عن طريق البعوض. وتبين من الدراسة أن 55٪ من المعلمين يوافقون، أو يوافقون بشدة، على حجز المصابين بالإيدز في الحجر الصحي، في حين كان بعض هؤلاء المعلمين (17٪) يرون أن الإيدز مرض مرتبط بالسلوكيات الجنسية العالية الاختطار. وكان موقف المتزوجين من المعلمين أكثر إيجابية تجاه فيروس العوز المناعي البشري/الإيدز، من موقف غير المتزوجين.

ABSTRACT A cross-sectional interview study was made with 290 teachers in 10 high schools in Yazd city, Islamic Republic of Iran. More than 90% of the participants had previously received information about HIV and AIDS. Only 207 (71.4%) correctly answered all questions on methods of transmission of HIV/AIDS. Most knew about sexual contact (93.1%) and infected blood (92.1%) as methods of transmission. Some teachers (20.3%) thought that mosquitoes could transmit HIV/AIDS. Regarding attitudes toward HIV/AIDS, over 55% of the teachers agreed or strongly agreed that infected people should be quarantined, whereas 17% agreed or strongly agreed that AIDS is a specific disease of those with high-risk sexual behaviour. Married teachers held more positive attitudes toward HIV/AIDS than unmarried teachers.

Connaissances et attitudes vis-à-vis du VIH/sida chez des enseignants de Yazd (République islamique d'Iran)

RÉSUMÉ Une étude transversale par entretiens a été menée auprès de 290 enseignants de 10 établissements d'enseignement secondaire de Yazd (République islamique d'Iran). Plus de 90 % des participants avaient déjà reçu des informations sur le VIH et le sida. Seuls 207 (71,4 %) connaissaient les véritables modes de transmission du VIH/sida. La plupart d'entre eux savaient que les contacts sexuels (93,1 %) et le sang contaminé (92,1 %) en faisaient partie. Certains enseignants (20,3 %) pensaient que les moustiques pouvaient transmettre le virus. En ce qui concerne les attitudes vis-à-vis du VIH/sida, plus de 55 % des enseignants étaient favorables ou très favorables à la mise en quarantaine des personnes infectées, alors que 17 % pensaient ou étaient persuadés que le sida est une maladie qui touche surtout les personnes ayant un comportement sexuel à haut risque. Les enseignants mariés avaient des attitudes plus positives vis-à-vis du VIH/sida que les enseignants non mariés.

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Introduction

The number of people with HIV/AIDS is estimated to be 39.5 million and the number of newly infected cases of HIV in 2006 was 4.3 million [*1*], with over 90% of new cases occurring in less developed countries [*2*]. There continues to be a considerable amount of research on HIV in the areas of preventive vaccines, microbicides, sexually transmitted diseases (STD) control and antiretroviral therapy. As effective forms of these interventions are in many cases not yet available, there is a critical need to focus on initiating and maintaining behaviour change in the population [*3*]. Unfortunately there are few studies from developing countries that have been able to examine the key factors that determine how much people know about HIV/AIDS prevention [*4*].

The prevalence of HIV in the Islamic Republic of Iran, like other parts of the world, has been slowly rising in recent years. The prevalence of HIV in the country was 2 per 100 000 in 2004 [*5*]. This rate is low compared with the rates in many countries, including the United States (0.61%) and especially African countries such as Zimbabwe (21.7%–27.8%) [*6*]. Although HIV prevalence is low in the Islamic Republic of Iran, existing conditions could lead to the rapid spread of HIV/AIDS.

An important factor fuelling the spread of HIV/AIDS in developing countries is believed to be poor knowledge about how the disease is spread and how it can be prevented. The results of a survey in Madagascar showed that 68% of participants in the study did not know that vaginal sex with a properly used condom is low risk [*7*]. A study of students in the Islamic Republic of Iran demonstrated that the knowledge of students about HIV/AIDS was moderate [*8*] and a study of high-school teachers showed that only 63.3% had a good level of knowledge [*9*].

Because schoolteachers have an important role to play in national strategies towards HIV/AIDS prevention, the aim of this study was to assess the knowledge and attitude of teachers in Yazd city about HIV/AIDS.

Methods

In this cross-sectional study, a questionnaire was completed anonymously by 290 teachers from 10 high schools in Yazd city, Islamic Republic of Iran, in winter 2004. The teachers were selected by cluster sampling from the list of high schools at the Department of Education of Yazd Province.

The data were collected using a specially designed questionnaire consisting of 3 sections: demographic data and previous sources of knowledge about HIV and AIDS (6 questions), knowledge about HIV/AIDS, routes of transmission and methods of prevention and control (17 questions) and attitudes to HIV/AIDS (3 questions). The maximum score was 17 and a score > 14 was considered good, 10–14 moderate and < 10 poor. The 3 attitude questions asked if people infected with HIV/AIDS should be quarantined, if AIDS is a specific disease of those with high-risk sexual behaviours and if you can catch AIDS from speaking to people infected with HIV. Attitudes were score on a 5-point Likert scale (5 = strongly agree to 1 = strongly disagree).

Frequency calculations, Spearman rank correlation and chi-squared tests were performed using *SPSS*.

Results

Of the 290 participants, 131 (45.2%) were women and 159 (54.8%) men; 268 (92.4%) were married. Most of the participants (90%) had previously received information

about HIV and AIDS, most commonly from radio and television (243, 83.8%). Only 52 (11%) had received it from a formal class.

The knowledge mean score of the teachers was 11.5 out of 17 [standard deviation (SD) = 2.84]. Only 207 participants (71.4%) answered correctly all the questions about routes of transmission of HIV/AIDS: 270 (93.1%) knew that sexual contact is a route of transmission of HIV/AIDS, 92.1% knew about infected blood and 223 (76.9%) correctly knew that HIV/AIDS can transmit from pregnant mother to her fetus. Some teachers (59, 20.3%) thought that mosquitoes could transmit HIV/AIDS (Table 1). The data showed that 244 (84.1%) of teachers believed that the best method for preventing HIV/AIDS infection is education (Table 2).

There were significant differences in knowledge by the age of participants (Mann–Whitney test, $P < 0.0001$) and between the scores of men and women (Mann–Whitney test, $P < 0.001$) [mean knowledge score was 10.2 (SD 2.51) for men and 13.1 (SD 2.53) for women].

Married teachers had a higher attitude score than unmarried teachers although this was not significant (mean attitude score for married teachers was 7.3 (SD 2.4) versus 6.3 (SD 2.1) for unmarried teachers, Mann–Whitney test, $P = 0.069$). More than 55% of teachers agreed or strongly agreed that infected people should be quarantined. Only 17% of teachers agreed or strongly agreed that AIDS is a specific disease of those with high-risk sexual behaviour. Also 86.9% of teachers disagreed or strongly disagreed to that you can catch AIDS by speaking to infected people (Table 3).

The results revealed a relationship between the age of participants and their attitude ($P < 0.001$) with younger teachers having more positive attitudes (Table 4). There was also a significant difference between the sex of teachers and their attitude ($P < 0.005$) with a mean attitude score of 10.4 (SD 2.55) for male teachers versus 13.0 (SD 2.36) for female teachers (Table 4).

The results showed a direct correlation between teachers' knowledge scores of HIV/AIDS and scores for a positive attitude toward HIV/AIDS (Spearman's rho = 0.3, $P < 0.001$).

Table 1 **Knowledge about routes of HIV transmission among 290 teachers in Yazd city**

Route of transmission	Yes		No	
	No.	%	No.	%
Sexual contact	270	93.1	12	4.1
Blood	267	92.1	15	5.2
Occupation	245	84.5	37	12.8
Dentistry	235	81.0	27	16.2
Mother to fetus	223	76.9	59	20.3
Insect bite	59	20.3	223	76.9
Toilet, bath articles, etc.	27	9.3	254	87.6
Clothes	10	3.4	272	93.8

Table 2 **Views about best methods of prevention and control of HIV among 290 teachers in Yazd city**

Best method of prevention and control of HIV	No.	%
Education	244	84.1
Diagnosis by screening	9	3.1
Cure	2	0.7
Education and diagnosis, together	7	2.4
Don't know	28	9.7
Total	290	100.0

Table 3 **Attitudes to HIV/AIDS patients among 290 teachers in Yazd city**

Question	Strongly agree		Agree		No difference		Disagree		Strongly disagree		*P*-value
	No.	%	No.	%	No.	%	No.	%	No.	%	
Infected people should be quarantined	88	30.3	73	25.2	24	8.3	76.0	26.2	29	10.0	< 0.001
AIDS is a specific disease of those with high-risk sexual behaviour	20	6.9	32	11.0	13	4.5	12.7	43.8	98	33.8	< 0.001
You can catch AIDS from speaking with infected people	9	3.1	17	5.9	12	4.1	1.7	36.9	145	50.0	< 0.001

Table 4 **Mean scores for attitude to HIV/AIDS among 290 teachers in Yazd city by age and sex**

Variable	No.	Mean attitude score	SD
Age (years)			
25–34	75	14.5	1.2
35–44	95	12.6	1.2
45+	120	9.0	2.1
		P < 0.001[a]	
Sex			
Male	159	10.4	2.5
Female	131	13.0	2.5
		P < 0.005[a]	
Total	290	11.6	2.8

[a]***Mann–Whitney test.***
SD = standard deviation.

Discussion

The data suggest that HIV/AIDS awareness was moderate in teachers, but because of their central role in educating young people, teachers must be as well informed as possible. In a study in Malawi teachers believed that they had an important role to play in educating students as well as the community regarding AIDS and other STDs [*10*]. Our results are in agreement with a study of teachers by Jha et al. which showed that awareness about HIV/AIDS was fairly good [*11*]. Among teachers in Sudan the overall mean score for HIV transmission knowledge was 2.9 out of 3 [*12*], which is higher than our study where teachers had a mean score of only 11.5 out of 17.

Our results showed that 93.1% of teachers knew that sexual contact is a method of HIV transmission. This agrees with the results of other studies [*13–17*], for example the Tanzania DHS survey which showed that 80% of participants knew that the disease can be transmitted through sex-

ual contact [*13*]. Our results do not support Peltzer's study of teachers which indicated very poor general knowledge about transmission of HIV [*18*] and Chatterjee et al. who showed that only 16.2% of teachers had clear knowledge about HIV transmission and prevention [*19*].

In our study 76.9% of teachers knew that HIV can transmit from pregnant mother to her fetus which is lower than Walter's study reported in 2001 that 95% of women knew that one of the methods of transmission of HIV/AIDS is from mother to baby [*20*].

Some of our participants (20.3%) believed erroneously that mosquitoes could transmit HIV/AIDS. In a study in Madagascar, most participants thought that mosquitoes could transmit HIV/AIDS [*7*]. In another study of Iranian students, 33% believed that mosquito bites could transmit HIV/AIDS [*8*].

Our data show that 90% of participants had previously received HIV and AIDS information, 83.8% from radio and television. In Madagascar 88% of participants' information was from radio [*7*]. In another Iranian study, most information was from television [*8*]. In a study in Yemen, television was the most common source of information [*21*]. Agrawal et al. showed that the mass media are important for disseminating knowledge on HIV/AIDS in India [*22*].

The results of our study show that 30.3% of teachers believed that infected people should be quarantined and this agrees with the results of Brook who reported that 39% of teachers in Israel thought that a pupil infected with HIV should be kept away from school [*23*]; however, this was a study from 1994 when fewer people would be expected to know about AIDS. A study in Yemen [*21*] revealed an intolerant attitude toward AIDS- and HIV-positive patients that was the opposite of our study where, taking account of responses to all 3 attitude questions, attitudes towards HIV/AIDS were generally positive.

Boscarino and DiClemente argued that as new school-based HIV and AIDS policies and prevention programmes became formulated in the 1990s, teacher input would be critical to effective programme development and implementation [*24*]. Our data indicate a direct relationship between teachers' knowledge of HIV/AIDS and a positive or supportive attitude toward HIV/AIDS. To achieve success, it is important that teachers' knowledge, comfort, and support be taken into consideration during both the development and implementation phases of school-based programmes. Finally, we recommend that professional development for Iranian teachers include strategies for educating adolescents about HIV/AIDS.

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