

Reproductive health knowledge, attitudes and practices of Iranian college students

M. Simbar,¹ F.R. Tehrani² and Z. Hashemi³

المعارف والمواقف والممارسات المتعلقة بالصحة الإنجابية لدى الطلاب الجامعيين الإيرانيين

معصومة سيمبار، فهيمة رامزاني طهراني، زينب هاشمي

الخلاصة: لدراسة معارف ومواقف وممارسات الشباب في جمهورية إيران الإسلامية، حول الصحة الإنجابية، أكمل 1111 من طلاب جامعة قزوین استبياناً يضم 43 سؤالاً تتطلب إجابات مختصرة. وكان متوسط المعدل العام للمعرفة لدى هؤلاء الطلاب 54٪، كما كان مستوى المعرفة لدى الطلاب والطالبات والمتزوجين والعزّاب، متشابهاً. ومن بين 664 طالباً أجابوا على أسئلة حول سلوكيات الصحة الإنجابية، أفاد 54 منهم (8٪) أنهم قاموا بممارسة الجنس قبل الزواج (16٪ من الذكور و0.6٪ من الإناث)؛ وقد استعمل 48٪ من هؤلاء العازل الذكري. وقد كان رأي معظم الطلاب أن اختطار عدوى الإيدز وسائر الأمراض المنقولة جنسياً كان معتدلاً، ولو أن مقدرة الشباب على ممارسة السلوك الصحي كانت متدنية. وكان معظمهم مقتنعين بفوائد المعرفة بالصحة الإنجابية للشباب، لكنهم يعتقدون أن خدمات الصحة الإنجابية الحالية غير كافية.

ABSTRACT To study reproductive health knowledge, attitudes and practices of youth in the Islamic Republic of Iran, 1111 university students completed a questionnaire with 43 closed questions. The overall mean knowledge score was 54%. Knowledge of males and females, and of married and single students, was similar. Of 664 students answering questions about reproductive health behaviour, 54 (8%) reported having sexual intercourse before marriage; 16% of males and 0.6% of females; 48% of them had used condoms. The majority of students believed that the risk of AIDS and other sexually transmitted infections was moderate but that youth had a low ability to practise healthy behaviour. The majority believed in the benefits of reproductive health knowledge for youth but felt that services were inadequate.

Connaissances, attitudes et pratiques des étudiants iraniens concernant la santé génésique

RÉSUMÉ Afin d'étudier les connaissances, attitudes et pratiques des jeunes concernant la santé génésique en République islamique d'Iran, un questionnaire composé de 43 questions fermées a été rempli par 1111 étudiants universitaires. Le score général moyen pour les connaissances était de 54 %. Les connaissances des garçons et des filles, et celles des étudiants mariés et célibataires, étaient similaires. Sur les 664 étudiants ayant répondu aux questions sur les comportements liés à la santé génésique, 54 (8 %) déclaraient avoir eu des relations sexuelles avant le mariage : 16 % de garçons et 0,6 % de filles ; 48 % d'entre eux avaient utilisé des préservatifs. La majorité des étudiants pensaient que le risque de SIDA et d'autres infections sexuellement transmissibles était modéré mais que les jeunes avaient une faible capacité à adopter un comportement sain. La majorité des étudiants considéraient qu'il y avait des avantages pour les jeunes à avoir des connaissances en matière de santé génésique mais estimaient que les services étaient insuffisants.

¹Department of Midwifery, Shaheed Beheshti Medical University, Tehran, Islamic Republic of Iran (Correspondence to M. Simbar: msimbar@yahoo.com).

²National Research Centre for Reproductive Health, Tehran, Islamic Republic of Iran.

³Centre of Education and Research on Population and Family Planning, Medical University of Qazvin, Qazvin, Islamic Republic of Iran.

Received: 18/04/04; accepted: 14/06/04

Introduction

The sexual reproductive health needs of young people in the Islamic Republic of Iran are one of the most under-researched aspects of our population. This is concerning at a time when all communities in the world are threatened by morbidity and mortality due to the spread of the acquired immune deficiency syndrome (AIDS) [1]. The latest report of the Joint United Nations Programme on HIV/AIDS (UNAIDS) reveals that almost 60 million people are globally infected by human immunodeficiency virus (HIV), of whom 20 million are expected to die due to complications of the disease [1]. Currently there is no solution except prevention.

The Ministry of Health and Medical Education in Tehran recorded more than 14 000 HIV positive cases by 2003; 60% of these were infected from injecting drug use and 25% from sexual relations [1]. However, it is predicted that the figures could be much higher than reported and there is evidence that the rate of HIV is growing rapidly [2].

Youth are a particular concern for reproductive health. More than half the world's youth are initiating their sexual activity during their adolescence years [1]. Every year, half of new HIV infected cases and one-third of the 340 million new sexually transmitted infections (STIs) occur in people aged under 25 years. Each year, more than 1 in 20 adolescents contracts a curable STI [3]. Every minute, 10 female adolescents around the world undergo unsafe abortion [4].

While religious teaching and cultural norms in the Islamic Republic of Iran emphasize abstinence from sexual activity until permanent marriage [5], in reality sexual activity before, and outside, marriage occurs in Islamic societies as well as non-Islamic ones. Unfortunately, little is known about

this aspect of our community. The few studies of the knowledge, attitude, beliefs and behaviours about sexual reproductive health of Iranian youth have demonstrated poor knowledge about reproductive health [6-10]. It is the task of health researchers to identify the needs for reproductive health promotion and to plan and implement the necessary educational programmes that might include prevention of STIs/HIV/AIDS and unwanted pregnancies.

This descriptive study aimed to study the knowledge, attitudes and behaviour of a group of university students in relation to the health belief model, in order to identify the sexual reproductive health needs of students and to clarify the future vision of health promotion programmes in the Islamic Republic of Iran.

Methods

Quota sampling was used to recruit 1117 female and male students studying medical science, engineering, science or human sciences in Qazvin University of Medical Sciences and Imam Khomeini International University.

Questionnaires were distributed in the university classes and were filled by the students. The questionnaire included 43 closed questions covering demographic data and knowledge, behaviour and attitudes towards reproductive health.

In the knowledge section, students were given a list of contraceptive methods, type of STIs and ways of preventing HIV and asked to mark which they knew about. In the section on reproductive health behaviour, students were asked if they had had premarital intercourse, and if so, whether they had used contraceptives or condoms and if there were any occurrences of unwanted pregnancy, STIs/HIV/AIDS or unsafe abortion. The attitudes section

comprised 10 statements (5 supportive of good practice in reproductive health and 5 non-supportive), scored from 1 to 5 from completely disagree to completely agree.

The final part of the questionnaire assessed the health beliefs of the students according to the health belief model, using 6 questions. They were asked their opinion of how much youth are at risk of unwanted pregnancy, HIV/AIDS and STIs; how much unwanted pregnancy or HIV/AIDS/STIs affect the life, career and social life of single young people; how much knowledge about contraception and HIV/AIDS/STIs prevention methods are useful for single young people; and how much youth are able to use prevention methods when they are at risk of unwanted pregnancy or HIV/AIDS/STIs [4 questions, scored from 1 (not at all) to 4 (a lot)]. They were also asked if they believed that reproductive health services and education for youth were adequate (Yes/No) and if not, were the inadequacies related to: inaccessibility of contraceptives for single young people, low knowledge of youth about reproductive health or an inappropriate environment to access reproductive health services.

The questionnaire validity was confirmed by 10 reproductive health experts and its reliability was assessed by the split half method.

The data were processed using *SPSS* version 10 and analysed using chi-squared, Mann-Whitney, Spearman's correlation and Kruskal-Wallis tests.

The project was approved by the ethics committee of the Deputy of Research and Technology of the Ministry of Health and Medical Education of the Islamic Republic of Iran. Written consent was taken from the representatives of the heads of both universities. The study was explained to the students in their classes and questionnaires were completed anonymously.

Results

A total of 1117 students participated in the study, 654 females and 457 males (6 students did not record their sex), with a mean (standard deviation) age of 21.4 (SD 2.4) and 22.7 (SD 3.5) years respectively. Most of the students (924/1117) were single at the time of the study.

Table 1 shows the proportion of students who knew about each type of contraceptive, types of STIs and ways of preventing HIV, in relation to their field of study, sex and marital status.

In the section about knowledge of contraceptive methods, the most familiar method was oral contraceptives (82% of all students knew about this method) and the least known was emergency contraception (only 17% knew about it). The overall mean knowledge score was 55%. Medical students had a higher mean knowledge score (72%) than students studying human science (39%), science (47%) and engineering (55%). Mean scores on contraception knowledge were slightly higher for females compared with males (59% versus 53% respectively) but was identical for married and single students (55% for both).

For the section about knowledge of STIs, 87% of students knew about AIDS compared with only 40% for syphilis and 46% for gonorrhoea. In the section about knowledge of HIV prevention methods, 75% of the students believed that adhering to moral principles (ethics) was a method of prevention for HIV, 67% knew about not sharing needles and blades and 49% about condoms. Few students (17%) recognized abstinence from sex as a method of preventing HIV.

There was no significant difference between the knowledge of males and females or between single and married students about reproductive health. But knowledge

Table 1 Percentage of students who knew about each item and mean percentage knowledge in each category

Variable	Hum. Sci. (n = 359)		Sci. (n = 145)		Field of study Eng. (n = 223)		Med. Sci. (n = 390)		Sex Female (n = 654)		Male (n = 457)		Marital status Married (n = 193)		Single (n = 924)		Total (n = 1117)	
	%		%		%		%		%		%		%		%		%	
Contraceptives																		
Pills	71	76	86	92	85	80	84	81	82									
Condoms	62	65	79	80	68	78	76	71	72									
IUD	44	61	54	88	74	49	66	63	64									
Norplant	26	32	39	69	50	35	42	49	44									
Injectables	37	37	46	72	60	43	53	51	51									
Emergency contraception	7	8	13	31	18	15	18	17	17									
Menstrual diary	24	37	44	64	53	62	41	44	44									
Withdrawal	26	27	52	57	42	43	41	42	42									
Vasectomy	43	61	66	82	67	59	64	64	64									
Tubectomy	54	67	66	85	75	61	69	70	69									
Mean knowledge score	39	47	55	72	59	53	55	55	55									
Diseases																		
Gonorrhoea	27	30	35	75	39	55	49	45	46									
Syphilis	20	23	22	74	40	40	46	38	40									
AIDS	82	87	87	92	86	89	87	87	87									
Mean knowledge score	43	47	48	80	55	61	61	57	58									
HIV prevention methods																		
Applying moral principals	67	77	75	81	75	76	76	70	75									
Using condoms	31	35	59	64	39	62	47	49	49									
Avoiding used syringes and blades	51	67	64	68	60	63	56	67	61									
Abstaining from sex	8	11	18	26	23	22	14	17	17									
Mean knowledge score	39	48	54	60	49	56	48	51	51									
Overall mean knowledge score	40	47	53	71	56	55	55	54	54									

Hum. Sci. = Human Science; Sci = Science; Eng. = Engineering; Med. Sci. = Medical Science.

IUD = intrauterine device.

AIDS = acquired immune deficiency syndrome.

HIV = human immunodeficiency virus.

of female students about contraceptives was significantly higher than males (Mann–Whitney test, $P < 0.05$). Knowledge of male students was higher than females about STIs/HIV/AIDS (Mann–Whitney test, $P < 0.05$) as well as about methods of prevention against STIs (Mann–Whitney test, $P < 0.05$). There were no significant differences between single and married students in knowledge about contraceptives, STIs and HIV prevention methods. Using the Spearman rank correlation test, higher scores on knowledge and attitudes were significantly correlated with a higher level of education of mothers ($P < 0.05$) and fathers ($P < 0.01$), older age ($P < 0.01$), number of years at college ($P < 0.01$), and higher socioeconomic class ($P < 0.01$).

Permission was not given to ask medical science students about their reproductive health behaviour; thus a total of 664 non-medical students (320 male, 344 female) answered this part of the questionnaire. Of the students, 54 (8%) reported having sexual intercourse before marriage; 52 of them were male (16% of males) and 2 were female (0.6% of females). While 39 were still single, both of the females were now married. Out of the 54, 32 (59%) had used contraceptives and 26 (48%) had used condoms. Six (6) cases of STIs were reported by this group, and the men reported 4 cases of unwanted pregnancy and 3 cases of induced abortion occurring with their partner. The students who had not had premarital intercourse were more likely to believe that abstinence was a method of HIV prevention than did students who had had premarital intercourse (Mann–Whitney, $P < 0.05$).

Table 2 shows that the majority of students had positive views about the need for reproductive health education (statements 1, 2, 3, 8, 9 and 10). Over three-quarters disagreed with the statement that “Youth do not need reproductive health information be-

cause they have no premarital intercourse”. They also disagreed that “The best method for prevention of unwanted pregnancies and STDs/AIDS is to withhold information from youth”. Around one-third agreed that contraceptives, including condoms should be available easily to youth. Surprisingly, there were some unusual beliefs about contraceptive use: 47% believed that contraceptive use for a long period causes infertility and 34% that contraceptive use before marriage causes infertility.

Figure 1 shows the responses of students according to the 4 questions about their reproductive health beliefs. The students believed the risk of unwanted pregnancy or HIV/AIDS was only low to moderate, that the threat to young peoples’ lives, social lives and careers from unwanted pregnancy or HIV/AIDS was high and that knowledge about reproductive health was important. However, they also believed that young peoples’ ability to protect themselves was low to moderate. According to the students, the main reason for inadequacies in reproductive health services and education were inaccessibility of services (78%), low knowledge of youth about reproductive behaviour (45%) and barriers to accessing reproductive health services (46%).

Discussion

According to the declaration of the International Conference of Population and Development (ICPD) in 1994, reaffirmed in 1999, governments should provide reproductive health information and services as a right of human life [11] and a warranty for the future development and health of nations [12].

This study shows that, overall, university students in Qazvin had a moderate level of knowledge, with a mean knowledge score of 55% about methods of contraception,

Table 2 Attitudes of students towards reproductive health (n = 1111)

Statements	Agree %	Neutral %	Disagree %
1 Youth, single or married, should know how to use contraceptives	87	7	6
2 Educational booklets about pregnancy and STDs/AIDS prevention methods should be available in youth communities	76	13	11
3 Reproductive health services are necessary because temporary marriage is allowed in Shari'a	66	20	14
4 The best method for prevention of unwanted pregnancy and STDs/AIDS is abstinence until marriage	58	18	24
5 Contraceptive use for a long period causes infertility	47	30	34
6 Contraceptive use before marriage causes infertility	34	35	33
7 Contraceptives including condoms should be available easily to youth	34	34	42
8 Education about pregnancy and STDs/HIV/AIDS prevention methods leads to high-risk sexual behaviours	20	13	68
9 Youth do not need to reproductive health information because they have no premarital intercourse	14	8	78
10 The best method for prevention of unwanted pregnancies and STDs/AIDS is to withhold information from youth	10	7	84

57% about STIs and 54% about methods of HIV prevention. Knowledge of engineering, science and human science students was significantly poorer than medical students. The results confirm other smaller studies about reproductive health in the Islamic Republic of Iran [6–10]. The study also demonstrated a weak but significant positive correlation of parents' education and family socioeconomic class with knowledge of students about reproductive health, confirming the influence of social and economic conditions on the successful promotion of reproductive health [13–15]. Our study also showed some misconceptions about long-term contraceptive use

before marriage among these students and this needs to be corrected.

The results of this study could form the basis of further educational AIDS prevention programmes in the Islamic Republic of Iran. While all Iranian college students are educated about family planning at university, it seems that further efforts may be needed. As others have recommended [10,16], this should be adapted to their gender and their field of study, with improved education of non-medical students and added emphasis on family planning methods for males and on STIs/HIV/AIDS prevention.

Initiating sexual activity only after marriage is highly valued in the Islamic

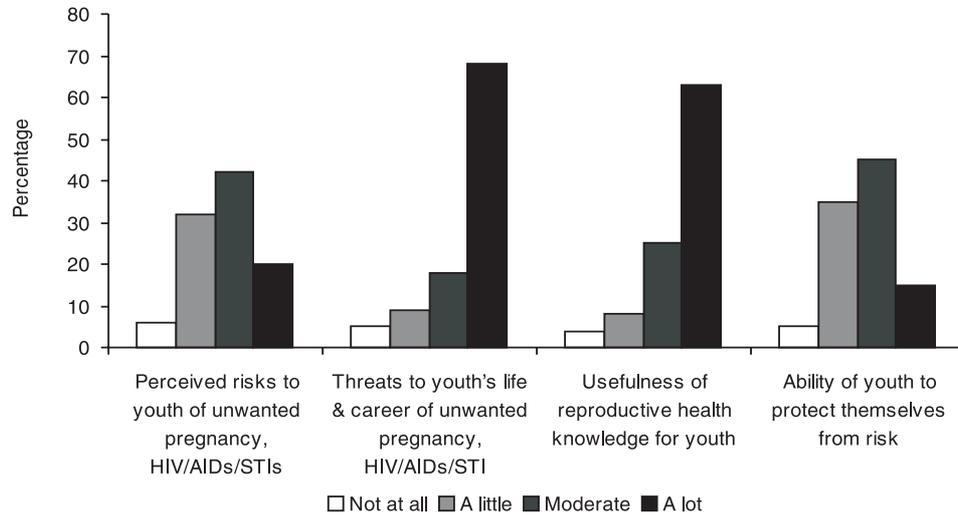


Figure 1 Beliefs of students about reproductive health classified using the health belief model ($n = 1111$)

culture of our country, whereas in many other parts of the world more than half of young people are starting sexual activities in adolescence [1]. The results of our study showed that the great majority of Iranian students in this sample are only initiating sexual activity after marriage. But there is a small minority who do not. Although the figures are much lower than world figures, we believe our study has demonstrated for the first time that premarital intercourse is occurring in our community (among 8.1% of this sample), even resulting in cases of unwanted pregnancies and unsafe abortions.

The educational needs of this minority of young people cannot be ignored. Research shows that reproductive health programmes promoting abstinence as the only strategy are not always effective, and for sexually active youth these programmes should have other health messages [13,17]. It is perhaps

encouraging that contraceptive use among this small group of sexually active youth was high, perhaps due to their higher level of education; world statistics show that only 17% of sexually active youth are using contraceptives [1] compared with 48% of our student sample.

It is difficult to know the accuracy of our data; the figures of this study might be underestimated because premarital sexual behaviour is such a sensitive topic in this community. In addition, the beliefs and practices of these university students cannot be extrapolated to all Iranian young people; the rate of sexual activity might be different in lower ages and in non-student youth communities. In other parts of the world, STIs/HIV/AIDS and unwanted pregnancies are more common among young people who are homeless, are alcohol or drug users or have multiple sexual partners, groups who usually initiate sexual activity at a

lower age [1]. It is a reality that more than 17 million young people worldwide under 18 years old are homeless and living and working on the street, often as sex workers [1]. We have no valid data about the extent of this problem in the Islamic Republic of Iran, nor any prevention programmes for these groups.

There is a belief among many parents and communities that giving information about reproductive health encourages young people into inappropriate sexual behaviours. In our survey of attitudes and beliefs, more than 80% of students did not agree with this. Furthermore, the low level of sexual activity before marriage, and high use of contraceptives among the few who were sexually active, suggests that these young people were practising healthy behaviours. A careful assessment of the issue by the UNAIDS showed no evidence that sexual reproductive health education encourages high-risk activities, in fact that it leads to safer sexual behaviour [18]. Reproductive health education is a right of young people so that they can make informed decisions about their reproductive lives [11] before the initiation of sexual activity [18].

The health belief model showed that the majority of these students believed that reproductive health knowledge among young people is low, that services are inadequate and there are barriers to accessing services. There is no doubt that a supportive environment is essential for improving reproductive health programmes. Appropriate social, political and cultural supports are necessary as well as the availability and accessibility of information and services. Education programmes should not only emphasize giving information but also should focus on providing youth with life skills and improving the ability of youth to manage their risk (self-efficacy) [19].

Psychosocial theories have been recommended for the planning of educational health promotion programmes including AIDS prevention programmes [20–24]. By applying the health belief model, we showed that the majority of Iranian students believed that unhealthy reproductive health behaviours among youth were a risk to life. However, they also believed that young people had a low capability to protect themselves. The HIV epidemic has up to now had a low impact in the Islamic Republic of Iran, presumably because most of the population follow the Islamic moral code which forbids premarital sex, adultery and homosexuality [25]. This has been demonstrated in other countries of the Eastern Mediterranean Region such as Egypt [26]. Our study confirmed that the majority of students believed that adhering to moral principals and abstinence were the best ways for prevention of STIs/AIDS. But in the present age of more open communication between cultures, patterns of behaviour are liable to change in the future. Policy-makers and health authorities need to pay more attention towards retaining and strengthening those aspects of our culture that keeps our youth safe. An appropriate strategy, which has been suggested by other predominantly Muslim countries such as Malaysia [27], Oman [28] and Egypt [26], is to integrate teaching of Islamic values into reproductive health education and promotion programmes.

Acknowledgements

The authors thank Dr Hosein Malek Afzali, the Deputy Minister of Research and Technology and the National Medical Sciences Research Centre, Mrs Hejazi and Mrs Rostami for their help in the study.

References

1. *2004 Report on the global AIDS epidemic: 4th global report*. Geneva, UNAIDS, 2004 (UNAIDS/04.16E).
2. *Report of the Department of Prevention of Diseases on HIV/AIDS*. Tehran, Ministry of Health and Medical Education, 2002.
3. Why are adolescents so vulnerable to sexually transmitted infections? *Progress in reproductive health research*, 2003, No. 64:5.
4. Greene ME et al. *In this generation: sexual and reproductive health policies for a youthful world*. Washington DC, Population Action International, 2002.
5. Bigomzadeh F. Children and adolescents sex educational problems. *Journal of education, Tarbiat*, 1991, No.5:7–12.
6. Mosleh-Uddin M et al. *Adolescents data on reproductive health issues in the I.R. of Iran. Paper presented at the IUSSP Seminar in Bangkok, Thailand, 10–13 June 2002*. Paris, International Union for the Scientific Study of Population, 2002. (<http://www.iussp.org/Bangkok2002/S26Mosleh.pdf>, accessed 26 June 2005).
7. Ramezani F. *Effects of two educational methods about health of puberty, on knowledge, attitude and practice of adolescents. Report of the project, 2000*. Tehran, Reproductive Health Research Centre, Ministry of Health and Medical Education, 2000.
8. Ramezani F. *Reproductive health promotion among youth in Islamshahr. Report of the project, 2001*. Tehran, Reproductive Health Research Centre, Ministry of Health and Medical Education, 2002.
9. *Knowledge, attitude and practice of female single and married youth about reproductive health. Report of the project, 2001*. Tehran, Ministry of Health and Medical Education, 2001.
10. Akbari E. *Knowledge attitude and practice of female and male (10-19 y/o) adolescents about health of puberty. Report of the project, 1997*. Tehran, Department of Family Health, 1997.
11. United Nations International Conference on Population and Development. Cairo, Egypt, 5–13 September 1994. *Earth negotiations bulletin*, 1994, 3 (<http://www.iisd.ca/vol03/0308000e.html>, accessed 26 June 2005).
12. Brundtland G. *Reproductive health: a health priority*. Speech delivered at the ICPD + 5 Forum, The Hague, Netherlands, 8–12 February 1999 (http://www.who.int/director-general/speeches/1999/english/19990208_hague.html, accessed 26 June 2005).
13. Kirby D. *No easy answers: research findings on programs to reduce teen pregnancy*. Washington DC, National Campaign to Prevent Teen Pregnancy, 1997.
14. Santelli JS et al. The association of sexual behaviors with socioeconomic status, family structure and race/ethnicity among US adolescents. *American journal of public health*, 2000, 90(10):1522–8.
15. Dillard K. *Adolescent sexual behaviour. II: Socio-psychological factors*. Factsheet. Washington DC, Advocates for Youth, 1996.
16. Aarons SJ et al. Postponing sexual intercourse among urban junior high school students—a randomized controlled education. *Journal of adolescent health*, 2000, 27(4):236–47.
17. Christopher F, Roosa M. An evaluation of adolescents pregnancy prevention programs: is “just say no” enough. *Family relations*, 1990, 39:68–72.
18. *Impact of HIV and sexual health education on the sexual behaviour of young people: a review update*. Geneva, Joint

- United Nations Programme on HIV/AIDS, 1997 (<http://www.advocatesforyouth.org/publications/factsheet/fsbehsoc.pdf>, accessed 26 June 2005).
19. Chandra-Mouli V. Drawing in, working with and supporting communities in sexual health. *Sexual health exchange*, 1999 (2):1-3.
 20. Rosenstock LM. The health belief model: explaining health behavior through expectancies. In: Glanz K, Lewis FM, Rimer BK, eds. *Health behavior and health education theory, research and practice*. San Francisco, Jossey-Bass, 1995.
 21. Hilltabiddle SJ. Adolescents condom use, the health belief model, and the prevention of sexually transmitted disease. *Journal of obstetrics and gynaecology and neonatal nursing*, 1996, 25(1):61-6.
 22. Mahoney CA, Thombs DL, Ford OJ. Health belief and self-efficacy models: their utility in explaining college students' condom use. *AIDS education and prevention*, 1995, 7(1):32-47.
 23. Gielen AC et al. Women's perspectives about sexual behavior: a test of the health belief model. *AIDS education and prevention*, 1994, 6(1):1-11.
 24. Yep GA. HIV prevention among Asian-American college students: does the health belief model work? *Journal of American College of Health*, 1993, 4(5): 195-205.
 25. Prohibition of sexual relations outside marriage. In: Al-Awwa MS. *The role of religion and ethics in the prevention and control of AIDS. Chapter 4. Health education through religion series*. Cairo, World Health Organization Eastern Mediterranean Regional Office, 2004 (<http://www.emro.who.int/Publications/HealthEdReligion/AIDS/Chapter4.htm> accessed 26 June 2005).
 26. Lenton C. Will Egypt escape the AIDS epidemic? *Lancet*, 1997, 349:1005.
 27. Oorjitham SA. Spirited response: Malaysia's AIDS activists woo Muslim clerics *Asia week*, 1999, Nov 5:37.
 28. Abdullatif A. Introductory note. *WHO Oman*, 1998, 1(3) (<http://www.emro.who.int/emrinfo/countrynews/Oma/OmanNewsDecember98Page1.htm>, accessed 26 June 2005).