

Original Article

A Qualitative Evaluation of Men Living with HIV: Views on Condom Use

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Abstract

Background: Unprotected sexual activity is an important reason for the currently growing incidence of HIV infection in Iran. Recognizing barriers to safe sexual practice and affordance of behavioral changes can improve planning for condom promotion. The main objective of our study is to evaluate the opinions of HIV-positive men on condom use.

Methods: Our study was performed at three behavioral disease consultation clinics (HIV care clinics) in Tehran, Iran. Participants were initially selected among HIV-positive male patients by convenience sampling and narrowed-down by maximum diversity sampling in order to obtain the number of patients that would express various viewpoints regarding barriers and benefits to condom use. Data were collected using in-depth semi-structured individual interviews. All interviews were recorded and transcribed, and the codes were extracted after reviewing them several times.

Results: In this study, 22 HIV-positive men with a mean age of 37.5 ± 7.3 years were interviewed. Participants mentioned the prevention of HIV and sexually transmitted diseases as a benefit of condom use. However, most named decreased sexual satisfaction as the most important reason for not using condom. Because of decreased sexual satisfaction and unpleasantness, 9% of participants had not used condom during sexual intercourse.

Conclusion: The most important reason for not using condom was decreased sexual satisfaction. This study has indicated a need for consultations with HIV-positive and at risk populations to change their attitudes towards condom use and demonstrate the advantages of condom. To achieve this, government programs and media should be utilized.

Keywords: Condom, HIV-AIDS, Iran, qualitative research

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Introduction

Since the beginning of the AIDS epidemic approximately 60 million person worldwide have been infected with HIV, and 25 million have died of HIV-related causes.¹ A report on the HIV epidemic in the Middle East and North Africa (MENA) shows that while the overall HIV prevalence in the region is still low, the rise in new infections since 2001 has put the MENA region among the top two regions in the world with the fastest growing HIV epidemic.²

Advances in HIV care have resulted in prolonged life expectancy for people living with HIV (PLWH), which predisposes higher number HIV-positive persons to unsafe sexual practices. This provides the dual risk of HIV transmission to HIV-negative sexual partners and transmission of other sexually transmitted infections to the infected parties. Therefore, controlling unsafe sexual activities in HIV-positive persons has not only become a necessity, but a main concern in HIV prevention.^{3,4}

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Official reports show that as of October 23, 2011, a total of 23497 people have been diagnosed with HIV/AIDS across Iran. Of these, 91.3% were males and 8.7% were females. The 25–34 year age group has the highest number (43.7%) of infected individuals and shared use of hypodermic needles among injecting drug users is the most common mode of infection (69.8%). Unprotected sexual contact (10.1%), mother-to-child transmission (0.9%) and transfusion of contaminated blood (1%) are additional modes of transmission. In 18.2% of cases the mode of transmission is unknown.⁵ However, the number of cases whose mode of transmission is unclear has steadily increased in recent years. According to one theory, unreported transmissions among sexual contacts due to the fear of stigma may be responsible for this increase.⁶

During the past few years, the prevalence of AIDS in Iran has grown from a low-level status to a concentrated prevalence. While intravenous (IV) drug use has been introduced as the primary route of HIV transmission,⁵ the lack of information surrounding sexual conduct in Iran has rendered statistics unreliable.⁷ In addition, there is much concern that the pattern of HIV transmission in Iran may be changing towards a trend of increasing transmission by sexual intercourse. Numerous studies in Iran have demonstrated that low rates of condom use in high-risk populations range from 11% to 64.8%.^{8–10} Studies in other countries have shown that the percentage of condom use among PLWH is not desirable.^{11,12} This is considered to be a challenge in the prevention of HIV.

Considering that the rate of condom use is not satisfactory in Iran, thus identifying barriers to safe sexual practice among high-risk groups may assist in planning preventive interventions.

The Health Belief Model (HBM) is one of the models used to implement interventions for reducing high-risk sexual behaviors.¹³ This model takes into consideration the barriers and affordance of behavioral changes. In addition to its perceptions on susceptibility, severity, benefit, barriers and self-efficacy, and cues to action and their relations to safe sexual contacts.¹⁴

Few studies have examined the attitudes of HIV-positive persons towards condom use in Iran,¹⁵ and since cultural differences play a large role in such perceptions, barriers to condom use may widely differ among various cultures.¹⁶

Qualitative research is a scientific approach to evaluate beliefs and identify the causes of behavior in everyday life which can assist human beliefs. The advantage of qualitative research is that it gives weight to participants' viewpoints and maintains the capacity for explanation, description, and discovery during interviews.¹⁷ The present study uses a qualitative approach to evaluate the viewpoints of HIV-positive men regarding condom use, based on the HBM. This article is part of a widespread study of behavioral changes regarding condom use which has been undertaken in Iran.

Materials and Methods

Sample

This study recruited patients who referred to three behavioral disease consultation clinics (HIV care clinics) in Tehran, Iran during a nine month period from May 2010 to February 2011. Participants were selected from among HIV-positive male patients by convenience sampling, then narrowed-down by maximum diversity sampling in order to obtain a sample that would express various viewpoints regarding barriers and benefits to condom use. Interviews were continued until the point of data saturation was accomplished.

Data collection

We conducted in-depth interviews questions which were open-ended. The questions were based on the constructs of the HBM in order to obtain information regarding participants' perception of susceptibility, severity, benefit, barriers, and self-efficacy, as well as cues to actions related to safe sexual contacts. This study only assessed perceptions to the benefits and barriers of condom use. After obtaining consent from all participants, their demographic and personal information were recorded on paper. The remainder of the interview was conducted with a voice recorder. Interviews were later listened to and transcribed verbatim. At this stage, content analysis was performed. Interview texts were reviewed multiple times and after acquaintance with the contents, codes were extracted and categorized, and main themes identified.

The findings of this study were supported by adherence to the following criteria to evaluate the rigor and trustworthiness of the qualitative data: i) credibility (gaining participant trust and support, researcher involvement with the data, the use of peer opinions and allowing for separate coding, investigator triangulation by having more than one person interpret the data, and method triangulation using interviews, observation, and studying patients' records); ii) transferability (precise descriptions of the participants that included sampling, time and place of data collection, and maximum diversity sampling); dependability (an external check and simultaneous coding by another researcher to find probable discrepancies); and iii) conformability (returning the interviews to participants and controlling data with participants, reevaluation of

coding, and analysis of some of the interviews by other experts).¹⁸

Ethical approval was granted by Tehran and Shahid Beheshti Medical Universities. All participants gave oral consent to enter the study. Patient confidentiality was observed by omitting demographic data from the typed interviews and participants were allowed to discontinue participation at any time.

A total of 22 participants entered into the study. The time of each interview session varied and ranged between 41 to 90 minutes. Interviews were held uninterrupted in an isolated room. Interviews and data analysis were performed by colleagues who had taken adequate courses in qualitative research. Data analysis was based on content analysis.

Results

Socio-demographic characteristics

Of the 22 HIV-positive male participants, 11 were single, 9 were married, and 2 were divorced. Participants mean age was 37.5 ± 7.1 years (range: 27–53 years). Fourteen (74%) participants had reached the disease stage of AIDS and were under anti-retroviral therapy. The main risk activity responsible for infection was IV drug use. Ten of the participants had both a history of IV drug use and unprotected sexual activity; two only reported unprotected sexual contact. Although aware of their infection with HIV, 9 participants reported unprotected sexual activity during the previous year and 2 reported unprotected contact during their last sexual encounter. Participants' demographic and behavioral characteristics are seen in Table 1.

Table 1. Demographic and behavioral characteristics of participants.

Variable	Males (n = 22)
Age (years)	19–29 (3)
	30–39 (11)
	20–49 (6)
	Over 50 (2)
Marital status	Single (11)
	Married (9)
	Divorced (2)
Employment	Unemployed (8)
	Employed (13)
	Retired (1)
Education	Uneducated (2)
	Elementary (3)
	Lower secondary (6)
	Upper secondary-diploma (10)
	Further education (1)
Imprisonment record	Positive (19)
	Negative (3)
Sexual contact	Used condom during last sexual contact (11)
	Without sexual contact in last year (9)
	Did not use condom during last sexual contact (2)
History of drug addiction	Methadone maintenance treatment (9)
	Narcotics anonymous recovery (11)
	No addiction record (2)
History of high risk behavior	Intravenous drug addiction (10)
	Unprotected sexual relationship (2)
	Intravenous drug addiction and unprotected sexual relationship (10)

Participants' opinions on condom use

We investigated participants' viewpoints on the following questions: 1) "What is a condom and what is your idea about using it?"; 2) "What are the benefits of condom?"; 3) "Why do some people

Table 2. Themes and subthemes about the benefits and barriers of condom use.

Themes	Subthemes	Codes
Perceived benefits	Internal benefits	Condom is an individual health device. Makes people feel comfort
	External benefits	Prevention of transmitted HIV/AIDS and sexually transmitted diseases. Condom is a contraceptive for the prevention both of pregnancy and the birth of a child with AIDS.
Perceived barriers	Individual beliefs	Decreased sexual satisfaction. No need for condom use couples if one of the couples is HIV negative. Failure of condom use during sexual contact.
		Shyness of buying condom. No condom access at the beginning of intercourse. Condoms are expensive.
	Access/availability of condom	Shyness of buying condom. No condom access at the beginning of intercourse. Condoms are expensive.
	Condom	Low quality and no variety of condom in Iran.

not use condom?"; and 4) "In your opinion, what are the barriers to condom use?".

Participants' viewpoints were divided into two groups of themes about the benefits of and barriers to condom use. Each theme was divided into subthemes and codes. Participants presented a range of factors as benefits and barriers to condom use, of which the most important were that it was a safe method for the prevention of diseases, but also caused reduced sexual satisfaction. Age and educational status had no effect on the responses. The themes and subthemes are seen in Table 2.

Benefits

Internal benefits

One-fourth of patients stated that the condom is a protective health device. A patient pointed out that: "*Condom will protect us because we have a deficient immune system, thus we have to use it for saving health.*" (40-year-old, married) Only one of our participants mentioned that condom has a good mentally effect.

External benefit

Most participants mentioned the role of condom on preventing sexually transmitted diseases and HIV infection. For instance, one of the participants stated that: "*I am infected by HIV and I have to use condom as a preventing device for AIDS, gonorrhoea, and hepatitis.*" (36-year-old, single)

Some of the patients mentioned the role of condom as contraceptive device. For example: "*Since I have infection, I shouldn't have any children and I shouldn't get my wife pregnant.*

We have to prevent babies born to HIV positive mothers." (47-year-old, divorced)

Barriers

Individual beliefs

Participants presented a spectrum of factors as barriers to condom use. The most commonly mentioned barrier to condom use in this study was decreased sexual satisfaction. Examples: "*I have been used condom twice but I didn't feel satisfy so I don't like to use it again.*" (37-year-old, single)

Some men believed that there might not be a need to use condom when their partner was HIV-positive. One of the patients stated that: "*If the person is positive, I don't know..., I don't think there's a need [to use condom].*" (36-year-old infected man, single) Finally, two of the infected men stated the possibility of condom failure as a barrier.

Access/availability of condom

One-fourth of the infected men mentioned diffidence towards buying condom as a main barrier. Some thought that if the sales person at a drugstore were female, a situation can occur where shyness may impede the purchase of condom.

One-fourth of our participants mentioned limited access to condom when needed due to the distance to the nearest drugstore or the drugstore being closed. A 28-year-old recently married man who had been infected by unprotected sexual activity said: "*There aren't enough condoms, or there's no drugstore in the neighborhood, or it just may be noon and we tell ourselves to just forget it. And on one of these contacts that we say 'just forget it', it happens.*"

The cost of condom was referred to by two of the HIV-positive men: "*Buying condom has become a routine cost for me. When I have to buy a box of condoms for 35,000 Rials every week, every ten days, I may be able to pay for them now, but it can be a cause [for not using them]. I know people who can't pay 3,500 a week.*" (51-year-old, married)

Condom

Infected men believed that the quality standards of condom were not adequate in Iran.

"*These condom they make in Iran, they just change the scent and taste. What good is that? Foreign condoms are something else... We don't have those in Iran. Iranian condoms are no good. They break, they burst and they come off.*" (36-year-old)

Discussion

In this study, of all HIV-infected male, almost half mentioned a history of IV drug use along with unprotected sexual activity before infection and two mentioned a history of unprotected sexual contact as the only possible method of transmission. This, in itself, has emphasized the importance of condom use in high-risk sexual activities. More than half of the infected subjects were unmarried; any unprotected sexual contact would be considered high-risk, which could contribute to the overall spread of HIV in the community. In the Middle East, of all people who recognize the protective effect of condom against HIV transmission, only a few actually use them. Within the group that uses condom, only a few use them consistently. Even in high-risk groups for which condom use is a priority, the rate of condom use is low.¹⁹

Viewpoints of participants have been divided into the two themes of benefits and barriers to condom use. The most important benefit

was the relationship to the prevention of sexual diseases, including HIV, and the most important barrier to condom use was related to the reduction in sexual satisfaction.

Among the 13 men who did report sexual activity, 2 (15%) reported unprotected contact on their last sexual intercourse, despite being aware of their infection with HIV. A number of HIV-positive persons who were aware of their diagnosis failed to use protection for sexual contacts.²⁰⁻²³

Rahmati Najarkolaei et al.²⁴ performed a qualitative study on HIV-positive patients in Iran. The researchers also reported a number of HIV-positive persons who were aware of their diagnosis, yet failed to use protection for sexual contacts. These results supported the existence of certain barriers to condom use. Considering that there were no existing studies that evaluated the views of HIV-positive persons towards condom use in Iran, this study was designed to identify these barriers in person who were aware of their diagnosis; most who had experienced high-risk behaviors for HIV.

The most commonly mentioned and most important barrier to condom use in this study was decreased sexual satisfaction. In one study on Iranian female sex workers, it was revealed that although many clients wished to use condom when engaging in sexual contact with a sex worker, a larger number preferred contact without condom. The main reasons mentioned in this study for reluctance towards condom use included decreased sexual satisfaction, inconvenience for anal contact, as well as dislike and fear of condom.²⁵ Another study on IV drug users showed condom use to be very low among Tehran drug addicts despite good access and availability, presumably due to the decrease in sexual sensation.²⁶ Decrease in sexual satisfaction has also been mentioned as an influential factor in various studies both in Iran and other countries.^{27,28} This similarity between findings has shown that people strongly believe which condom reduce sexual satisfaction. Educational programs and consultation may be able to target this attitude and emphasize on the benefits of condom use in return for the drawbacks, particularly for high-risk groups.

In the Middle East, drugstores constitute the main source for obtaining condom.¹⁹ Since in Iran the condoms are frequently located in the cosmetics section rather than the pharmacy, it is not uncommon for the salesperson in this section to be a woman. This could cause the shyness that some mentioned in the current study. Peltzer on his study based on HBM has mentioned the shyness of buying condom from the opposite sex.²⁹

In Hingson's study based on HBM there was a relation between condom use and the barriers to condom use. People who did not believe in the barriers to condom use such as shyness and reduction in sexual satisfaction used condom 2.4 times more than others.³⁰

Adih and colleagues performed their study based on the social learning theory and HBM. They determined that if there was more satisfaction on condom use and less sensitivity to barriers, the use of condom would be three times more than the control group.³¹ Thus, it might be argued that awareness of the benefits of condom among high risk population is guaranteed.³²

By overcoming these barriers, condom use can be improved among men. Different strategies, such as the educational-behavioral strategy have been suggested. Education and consultation can change many of the negative attitudes towards condom use.

Another recommended strategy is the provision of easy and free access to condom. Currently, in behavioral disease consultation clinics condoms are distributed for free. To avoid awkwardness for patients, sometimes condoms are offered by the consultants.

In Drop In Centers (DIC) and at the Positive Club where HIV-positive or at-risk populations may refer, condoms are placed where anyone can take them. Since such centers are only open on work days and during working hours, installing vending machines for condom in front of drugstores or supplying condom in department stores and supermarkets could be helpful.

In addition, the quality and variety of available condom in the market should be assessed and if necessary, improved, to ensure that none of the concerns regarding failure, physical side effects, and reduced sexual satisfaction remain valid.

Although we have attempted to overcome most limitations in this study, there are a number of drawbacks, many of which are general limitations seen in qualitative research. One limitation is that the study sample in qualitative research is usually small and cannot be directly generalized to the overall population. Our study subjects were patients that had referred to consultation clinics for HIV, therefore they were not representative of the entire community of HIV patients and families. Those that do not refer to such clinics may be culturally or socio-economically different populations. Another drawback was that although all measures were taken to gain the participants' trust during interviews, participants may still have not spoken their uncensored intentions and beliefs due to the controversial and personal nature of the study.

The Islamic Republic of Iran has been a leading country in HIV prevention and treatment in MENA. The main objective for condom use is its efficacy in the prevention of sexually transmitted diseases. According to the results of this study, we should emphasize critical role of condom using against sexually transmitted diseases. Behavioral disease consultation clinics that are important places for consultation, training and education of HIV-positive and other high risk groups should be established.³³

High risk populations should be specifically considered to be educated. Other factors are can be overcome by precise planning and intervention by policy makers along with availability of condom in medical and social centers.

Conflict of interest: None

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References

1. UNAIDS. AIDS Epidemic Global Facts and Figures Factsheet. Available from: URL: [Ahttp://www.unaids.org/en/media/unaids/contentassets/dataimport/pub/factsheet/2009/20091124_fs_global_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/dataimport/pub/factsheet/2009/20091124_fs_global_en.pdf) [Accessed May 9, 2011].
2. UNAIDS. Available from: URL: <http://www.unaids.org/en/resources/presscentre/featurestories/2011/december/20111204menareport/> [Accessed May 4, 2011].
3. Kestern N, Hospers H, Kok G. Sexual risk behavior among HIV-positive men who have sex with men: a literature review. *Patient Educ couns*. 2007; **65**: 5 – 20.
4. Zekan S, Novotny TE, Begovac J. Unsafe sexual behavior among HIV-infected patients in Croatia, 2006: prevalence and associated factors. *AIDS Behav*. 2008; **12**: S86 – S92.
5. Center for Disease Control, Office of the Deputy for Public Health, Ministry of Health and Medical Education of the IR Iran. *HIV/AIDS in Iran (Cumulative Statistics)*. Tehran: Ministry of Health and Medical Education of the IR Iran; 2011. Available from: URL: <http://port.health.gov.ir/mfdc.cdc> [Accessed September 29, 2011]
6. National AIDS Committee Secretariat, Ministry of Health and Medical

- Education. On Monitoring of the United Nations General Assembly Special Session on HIV and AIDS 2010. Available from: URL: http://www.unaids.org/en/dataanalysis/monitoring_countryprogress/2010progressreportsubmittedbycountries/iran-2010-country-progress-report [Accessed April 9, 2011]
7. Gheiratmand R, Navipour R, Mohebbi MR, Mallik AK. Uncertainty on the number of HIV/AIDS patients: our experience in Iran. *Sex Transm Infect.* 2005; **81**: 279 – 280.
 8. Zargooshi J. Characteristics of gonorrhoea in Kermanshah, Iran. *Sex Transm Infect.* 2002; **78**: 460 – 461.
 9. Zamani S, Kihara M, Gouya MM, Vazirian M, Ono-Kihara M, Razzaghi EM, et al. Prevalence of and factors associated with HIV-1 infection among drug users visiting treatment centers in Tehran, Iran. *AIDS.* 2005; **19**: 709 – 716.
 10. Ramezani Tehrani F, Malek-Afzali H. Knowledge, attitudes, and practices concerning HIV/AIDS among Iranian at-risk sub-populations. *East Mediterr Health J.* 2008; **14**: 142 – 156.
 11. Loubiere S, Peretti-Watel P, Boyer S, Blanche J, Abega S, Spire B. HIV disclosure and unsafe sex among HIV-infected women in Cameroon: results from the ANRS-EVAL study. *Soc Sci Med.* 2009; **69**: 885 – 891.
 12. Bedimo AL, Kissinger P. Understanding barriers to condom usage among HIV-infected African American women. *J Association Nurses AIDS.* 1998; **9**: 48 – 58.
 13. Lance Coleman C. Health beliefs and high-risk sexual behaviors among HIV-infected African American men. *Appl Nurs Res.* 2007; **20**: 110 – 115.
 14. Iriyama S, Nakahara S, Jimba M, Ichikawa M, Wakai S. AIDS health beliefs and intention for sexual abstinence among male adolescent students in Kathmandu, Nepal: a test of perceived severity and susceptibility. *Public Health.* 2007; **121**: 64 – 72.
 15. Eshrati B, Taghizadeh Asl R, Dell CA, Afshar P, Millson PM, Kamali M, et al. HIV transmission among Iranian prisoners: initial support for providing education on the benefits of harm reduction practices. *Harm Reduct J.* 2008; **5**: 1 – 7.
 16. Cha ES, Doswell WM, Kim KH, Charron-Prochowinik D, Patrick TE. Evaluating the Theory of Planned Behavior to explain intention to engage in premarital sex amongst Korean college students: a questionnaire survey. *Int J Nurs Stud.* 2007; **44**: 1147 – 1157.
 17. Godin G, Naccache H, Pelletier R. Seeking medical advice if HIV symptoms are suspected. Qualitative study of beliefs among HIV-negative gay men. *Can Fam Physician.* 2000; **46**: 861 – 868.
 18. Polit DF, Beck CT. *Nursing Research, Method, Appraisal and Utilization.* 5th ed. Philadelphia: Lippincott Co; 2006: 332 – 336.
 19. The world Bank Report. Characterizing the HIV/AIDS Epidemic in the Middle East and North Africa Time for Strategic Action; 2010. Available from: URL: <http://issuu.com/world.bank.publications/docs/9780821381373> [Accessed May 28, 2011]
 20. Kalichman SC. Psychological and social correlates of high-risk sexual behavior among men and women living with HIV/AIDS. *AIDS Care.* 1999; **11**: 415 – 428.
 21. Norman LR. Predictors of consistent condom use: a hierarchical analysis of adults from Kenya, Tanzania and Trinidad. *Int J STD AIDS.* 2003; **14**: 584 – 590.
 22. Strebel A, Cloete A, Simbayl L. Social aspect of HIV/AIDS and health four-country report on formative research into the development of a HIV behavioral risk reduction intervention for PLWHA Botswana, Lesotho, South Africa and Swaziland. HSRC (Human Sciences Research Council). Available from: URL: <http://www.hsrc.ac.za/HAST-Projects.phtml> [Accessed Jun 9, 2011]
 23. Coleman SM, Rajabiun S, Cabral H, Bradford J, Tobias C. Sexual risk behavior change among persons newly diagnosed with HIV: the impact of targeted outreach interventions among Hard-to-reach population. *AIDS Patient Care STDs.* 2009; **23**: 636 – 645.
 24. Rahmati Najarkolaei F, Niknami S, Amin Shokravi F, Ahmadi F. Perception and behaviors of HIV/AIDS patients: qualitative research [in Persian]. *Behbood.* 2009; **13**: 220 – 234.
 25. Ministry of Health and Medical Education. Center control disease. Final Report of Rapid Assessment Research Project on Women's Risk Behaviors in Female Sex Workers in two areas of IRAN [in Persian]; 2008.
 26. Razzaghi EM, Rahimi Movaghar A, Mohammad K, Hosseini M. A qualitative study of risky sexual behavior in injecting drug users in Tehran [in Persian]. *J Sch Publ Health Inst of Publ Res.* 2003; **2**: 1 – 10.
 27. Sunmola AM. Sexual practices, barriers to condom use and its consistent use among long distance truck drivers in Nigeria. *AIDS Care.* 2005; **17**: 208 – 221.
 28. Bogart L, Kral A, Scott A, Anderson R, Flynn N, Gilbert M, et al. Condom attitudes and behaviors among injection drug users participating in California Syringe Exchange Programs. *AIDS Behav.* 2005; **9**: 423 – 432.
 29. Peltzer K. Factors affecting condom use among junior secondary school pupils in South Africa. *Health Sa Gesondheid.* 2000; **5**: 37 – 44.
 30. Hingson RW, Strunin L, Berlin BM, Heeren T. Beliefs about AIDS, use of alcohol and drugs, and unprotected sex among Massachusetts adolescents. *AJ P H.* 1990; **80**: 295 – 299.
 31. Adih WK, Alexander CS. Determinants of condom use to prevent HIV infection among youth in Ghana. *J Adolesc Health.* 1998; **24**: 63 – 72.
 32. Volk JE, Koopman C. Factors Associated with Condom use in Kenya: A test of the Health Belief Model. *AIDS Educat Prev* 2001; **13**: 495 – 508.
 33. Mattson M. Impact of HIV test counseling on college students' sexual beliefs and behaviors. *Am J Health Behav.* 2002; **26**: 121 – 136.