http:// ijp.mums.ac.ir
Original Article (Pages: 2317-2328)

Related Factors of the Preventing Behaviors of HIV/AIDS among Young People: Applying the Extended Health Belief Model (EHBM)

Mohtasham Ghaffari[1], *Zabihollah Gharlipour[2], Sakineh Rakhshanderou[3]

[1]Environmental and Occupational Hazards Control Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
[2]Department of Health Education and Promotion, Faculty of Health, Qom University of Medical Sciences, Qom, Iran.
[3]Department of Public Health, Faculty of Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Abstract

Background
HIV/AIDS is one of the major public health problems and a barrier to the progress of human civilization that is considered as a big concern for people all around the world. Premarital sexual abstinence is introduced as the most effective way to avoid HIV/AIDS. This study aimed to determine associated factors in the preventing behaviors of HIV/AIDS among young people using the Extended Health Belief Model.

Materials and Methods
This research was a cross-sectional descriptive analytical study which was conducted on 577 students in different universities in Shiraz. The participants were enrolled in the study using random stratified sampling method. A researcher-made questionnaire based on Extended Health Belief Model was implemented to collect data. Data were analyzed with SPSS V.18 using independent t-test, ANOVA, and Pearson correlation coefficient.

Results
In this study, the intention of premarital sexual abstinence had a statistically significant association with the constructs of knowledge, perceived susceptibility, perceived benefits, perceived barriers, perceived self-efficacy, subjective norms, and religious beliefs ($P<0.05$).

Conclusion
When designing programs for the prevention of HIV/AIDS and for the promotion of the premarital sexual abstinence, it might be useful to utilize the Extended Health Belief Model and focus on religious beliefs and subjective norms.

Key Words: HIV/AIDS, Extended Health Belief Model, Youth.

*Please cite this article as: Ghaffari M, Gharlipour Z, Rakhshanderou S. Related Factors of the Preventing Behaviors of HIV/AIDS among Young People: Applying the Extended Health Belief Model (EHBM). Int J Pediatr 2016; 4(8): 2317-28.

Corresponding Author:

Dr. Zabihollah Gharlipour, Department of Health Education and Promotion, Faculty of Health, Qom University of Medical Sciences, Qom, Iran.

Email: gharlipourz@yahoo.com

Received date Feb10, 2016; Accepted date: Mar 22, 2016

1- INTRODUCTION

HIV/AIDS is one of the major public health problems and a barrier to the progress of human civilization that is considered as a big concern for people all around the world (1). It is not only a health problem but also, a social economic problem as well (2). According to the World Health Organization (WHO) about 35 million people are living with HIV/AIDS, of whom 31.8 million people are young people and 3.2 million people are under 15 years of age (3). Although, expanding antiretroviral therapy (ART) to all people living with HIV and expanding prevention choices can help avert 21 million AIDS-related deaths and 28 million new infections by 2030 (4-7). After the first wave of AIDS in Iran, which occurred due to the use of contaminated blood and blood products, the second wave of the epidemic occurred in prisons and drug rehabilitation centers where the infection spread due to the share of infected needles. It seems that in recent years the pattern of transmission has changed and the percentage of new cases infected through sexual contact has increased (8).

Youth and adolescents are among the groups at high risk of the disease because individuals in these age groups have an increased level of social relations and context and thus they are more at risk of developing high-risk behaviors (9). Since no vaccine or effective treatment against AIDS has been introduced yet, the prevention of HIV infection is the most effective way to control the disease (10). The World Health Organization (WHO) has introduced the premarital sexual abstinence as the most efficient measure for the prevention of sexually transmitted diseases, especially HIV/AIDS. In several countries such as Uganda and the United States of America, abstinence from sex before marriage has been introduced as a priority method for the prevention of HIV/AIDS among male adolescents (11). Although every behavior is unique, but there are a limited number of variables that are used as determinants of a behavior. Understanding these variables and their role in behavioral perceptions can help us to design effective programs for behavioral changes (12). As a result, a number of models that are used to explain health behaviors are based on the assumption that high perceived risk is associated with lower levels of risk behaviors (13). Health Belief Model (HBM) is one of the simplest models (14). HBM is one of the first models which used behavioral science theories to solve the health problems. This model is more focused on the prevention of diseases and demonstrates the relationship between beliefs and behaviors; it is rooted on the assumption that preventive behaviors are based on a person's beliefs (15). In this model, the behaviors to reduce health risks (for instance, delaying the initiation of sexual contacts) are adopted when people perceive a serious and critical risk (e.g. death from AIDS), and when they feel they are in danger; in such a case, they adopt the behavior when they feel doing the desired behavior (avoidance of sexual contact) reduces the health risk (14). However, according to some researchers, the HBM is not necessarily a good strategy for sex education programs about premarital sexual abstinence because this sexual behavior is associated with some individual characteristics such as their religious beliefs, while these variables are not included in the health belief model. In view of that, many young people express many different items including personal and religious factors as their own reason for premarital sexual abstinence (16).

Adopting behaviors which are rooted in religious beliefs may influence health and prevent disease transmission. Because of the limitations imposed on sexual behavior by traditional and religious beliefs, having

faith in and acceptance of a religion is negatively associated with sexually transmitted diseases. For various reasons, following the Islamic beliefs has many benefits which protect individuals against sexual transmission of HIV. Banning sexual relationships outside the marriage may reduce the risk of HIV infection; hence, the negative relationship between HIV prevalence and being Muslim has been reported (17).

The concept of subjective norms is another variable that plays an important role in forming the intention for adopting healthy behavior. Subjective norms are the individual perceptions about what other important people think of certain behaviors – whether a certain behavior is accepted or rejected by key people. Several evidences have shown that subjective norms are especially important in the field of health (18). Myklestad and Rise (2007) conducted a study entitled as "predicting the intention to engage in sexual relations and planning for safe sexual behaviors among adolescents in Oslo; they pointed out that subjective norms were the most important predictors for intentions of protective sexual behaviors among female adolescents (19). The existing evidence also, shows that teenagers have introduced the subjective beliefs (reflected in the talks) of their friends who have experienced sex as a reason to avoid sex (20). Vakili et al. in their study concluded that the training programs are not much tailored to the cultural characteristics of Islamic communities (21). Thus, it seems necessary to add the construct of religious beliefs and also the construct of subjective norms l to the health belief model, as they could help to identify factors associated with the intentions and behaviors to prevent HIV/AIDS. This study aimed to determine associated factors in the preventing behaviors of HIV/AIDS in young people using the Extended Health Belief Model.

2- MATERIALS AND METHODS

2-1. Study Design and Population

This cross-sectional descriptive analytical study was conducted on students in different universities in Shiraz, South West of Iran (Shiraz University, Shiraz University of Medical Sciences, Shiraz University of Technology, Shiraz Islamic Azad University, and Shiraz Payam Noor University).

2-2. Methods

We used stratified random sampling method. To this end, each university was classified as strata and the sample size was calculated in proportion to the population of the university by gender, and then the samples were randomly selected. To select the participants, first the lists of students of each University were obtained. Then the samples were randomly selected in proportion to the number of students in each stratum. According to a related study (22), d=0.04, p=0.60 and confidence interval 95% by using the formula, sample size was calculated as 577 people.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

2-3. Measuring tools

A researcher-made questionnaire was used in the current study based on qualitative research by Ghaffari et al. (22) which included demographic variables and the constructs of the Extended Health Belief Model; it contained 55 questions for knowledge, 5 questions for perceived susceptibility, 10 questions for perceived severity, 8 questions for perceived benefits, 8 questions for perceived barriers, 7 questions for self-efficacy, 7 questions for subjective norms, 12 questions for religious beliefs, and 3 questions for premarital sexual abstinence. The questions about knowledge had three choices (yes=1 point, no and do not know=zero point). The constructs of

Health Belief Model were measured on a five-point Likert scale, ranging from strongly agree to strongly disagree (strongly agree=5 points, agree=4 points, no idea=3 points, disagree=2 points, and strongly disagree=1 point). It is worth mentioning that to ensure the accuracy of responses presented by the participants some of the questions were designed as the reverse negative questions. Face validity of the tool was confirmed through obtaining the experts opinions. In addition, the average scores of Content Validity Ratio (CVR) and Content Validity Index (CVI) were 0.88 and 0.97, respectively. Based on the results of Cronbach's Alpha Coefficient, the internal consistency reliability of the toll was between 0.79-0.96. Moreover, the Intra-class Correlation Coefficient (ICC) was between 0.80-0.92.

2-4. Inclusion criteria

Inclusion criteria were as follows: being first-year student at the undergraduate level, being single and giving consent to participate in the study.

2-5. Exclusion criteria

The exclusion criterion was just partial completion of the questionnaire.

2-6. Ethical considerations

Before completing the questionnaire, the participants of this study were presented to the target group and the informed consent was obtained from the participants.

2-7. Data analyses

The collected data were analyzed with SPSS V.18 using independent t-test, ANOVA and Pearson correlation coefficient.

3- RESULTS

The study findings showed that the mean age of participants was 21.44±2.36 years with an age range of 18-36 years old. Among the age groups, people aged 21-23 year old had the highest frequency (n=302, 52.3%). Moreover, of all the participants, 262 persons (45.5%) were male and 315 persons (54.6%) were female. In addition, concerning the employment status of the participants, 58 persons (10.1%) were employed, 516 people (89.4%) were unemployed, and 3 persons (0.5%) did not report their employment status. Concerning the employment status of fathers, 192 students (33.3%) reported that their fathers were self-employed (the highest frequency), and 22 students (3.8%) reported that their fathers were unemployed (the lowest frequency). In addition, concerning the employment status of mothers of the studied students, 476 students (82.5%) reported that their mothers were housewives (the highest frequency), and 1 student (0.2%) reported that his mother was worker (the lowest frequency). Concerning the educational level of fathers, 181 students (31.4%) reported that their fathers had high school diploma (the highest frequency), and 48 students (8.3%) reported that their fathers were illiterate (the lowest frequency). In addition, concerning the educational level of mothers of the studied students, 181 students (31.4%) reported that their mothers had high school diploma (the highest frequency), and 37 student (6.4%) reported that their mothers had associate diploma (the lowest frequency). Of all, 364 students (63.1%) were living with their families, 193 students (33.4 percent) were living in a dormitory, 18 students (3.1%) were away from their families and were living in a rented house or with friends, and two students (0.3%) did not report their residence.

As presented in **Table.1**, the results showed a significant difference between the gender with intention of premarital sexual abstinence ($P<0.001$); accordingly, the intention of premarital sexual abstinence in females was more than that in male students. In addition, the results of independent t-test showed a significant

difference between the employed and unemployed students with premarital sexual abstinence (P=0.027). So, that, the unemployed students had stronger intention of premarital sexual abstinence than employed students. However, there was no significant difference between the intention of premarital sexual abstinence with age, family dimension, employment status of father and mother, and educational level of father and mother.

As shown in **Table.2**, the results of ANOVA showed a significant difference between the mean scores of intention of premarital sexual abstinence with field of study (P=0.028). The results of multiple comparisons showed that the mean scores of students in intention of premarital sexual abstinence were significantly different between the students in the field of mathematics and those studying in the field of experimental sciences (mean difference=1.12; P=0.041). However, there was no significant difference between the mean scores of intention of premarital sexual abstinence between the students in other fields of study. The results also, showed that there was a significant difference between the mean scores of intention of premarital sexual abstinence and current residence of the participants (P=0.001). So that, students who were away from their families and were living in rented houses or with their friends had lower scores of intention of premarital sexual abstinence than those living with their family or in a dormitory.

According to the results of Pearson correlation coefficient, the intention of premarital sexual abstinence had a statistically association with the constructs of knowledge, perceived susceptibility, perceived benefits, perceived barriers, perceived self-efficacy, subjective norms, and religious beliefs. In other words, there was a reverse relationship between the intention of premarital sexual abstinence with perceived susceptibility and perceived barriers; hence, with a decrease in perceived susceptibility and perceived barriers, the intention of premarital sexual abstinence increases (**Table.3**).

Table-1: Association between of intention of premarital sexual abstinence and demographic variables

Variables		No.	* Mean± SD	P-value	Variables		No.	* Mean±SD	P-value
Gender					Employment status				
	Male	262	71.83±25.39	<0.001		Employed	58	75.40±23.99	0.027
	Female	315	89.86±16.04			Unemployed	516	82.36±22.46	
Age					Employment status of father				
	≤21	345	81.84±22.83	0.836		Employed	98	81.22±22.62	0.829
	>21	۲۳۲	81.44±22.43			Unemployed	479	81.77±22.68	
Family dimension					Employment status of mother				
	≤ 4	258	80.39±22.93	0.126		Housewife	476	82.28±22.33	0.162
	> 4	288	83.38±22.59			Employed	101	78.81±24.04	
Educational level of father					Educational level of father				
	Less than high school diploma	204	82.32±22.35	0.478		Less than high school diploma	286	82.19±22.71	0.553
	Higher than high school diploma	357	80.90±23.15			Higher than high school diploma	283	81.06±22.70	

* Scores are reported based on a 100 points scale; SD: Standard deviation.

Table-2: Association between of intention of premarital sexual abstinence and field of study, and current residence of the participants

Variable		*Mean ± SD	P-value
Field of study	Mathematics	78.68±24.29	0.028
	Experimental sciences	86.15±21.70	
	Humanitarian sciences	83.96±20.77	
	Foreign Language	78.64±22.77	
	Art	80.0±11.54	
Current residence	Living with family	81.08±22.51	0.001
	Students dormitory	84.42±21.94	
	Rented house or with friends	64.07±26.58	

* Scores are reported based on a 100 points scale.

Table-3: Pearson correlation coefficient between the constructs of Extended Health Belief Model

Constructs	Knowledge	Susceptibility	Severity	Benefits	Barriers	Self-efficacy	Subjective norms	Religious beliefs	IPSA ***
Knowledge	1								
Susceptibility	0.072	1							
Severity	0.062	0.059	1						
Benefits	0.126 **	-0.143 **	0.207 **	1					
Barriers	- 0.162-**	0.214 **	0.088 *	-0.357 **	1				
Self-efficacy	0.131 **	-0.172 **	-0.041	0.552 **	-0.667 **	1			
Subjective norms	0.201 **	-0.152 **	-0.011	0.531 **	-0.551 **	0.622 **	1		
Religious beliefs	0.168 **	-0.066	0.175 **	0.709 **	-0.397 **	0.584 **	0.588 **	1	
IPSA***	0.098 *	-0.145 **	0.002	0.638 **	-0.485 **	0.708 **	0.568 **	0.698 **	1

4- DISCUSSION

In this study there was a statistically significant relationship between the intention of premarital sexual abstinence with the constructs of knowledge, perceived susceptibility, perceived benefits, perceived barriers, perceived self-efficacy, subjective norms, and religious beliefs.Since many of the health problems are closely related to human behavior, behavioral theories, and models can make new insights and offer some methods to prevent health problems (23). Several different models and theories are proposed to explain the sexual attitudes and behaviors of adolescents all across the world (24). Health Belief Model is one of the most common frameworks proposed to understand the behavioral characteristics of adolescents (25, 26). However, the Health Belief Model is facing some limitations and shortcomings, particularly with regard to issues related to HIV/AIDS and sexual behaviors. For instance, the subjective norms which are one of the most important predictors of intention of healthy sexual behavior (19) are not included in this model. In addition, sexual behavior is associated with some individual characteristics such as religious beliefs; this construct too is not included in the Health Belief Model (16).

In the present study, there was a significant relationship between the knowledge of

HIV/AIDS and the intention of premarital sexual abstinence. This is not consistent with the results of other studies. For instance, Iriyama et al. in their study reported that high scores of knowledge of HIV/AIDS in adolescents had no significant relationship with their intention of avoiding sex (11). In addition, Karimi and Niknami conducted a study to assess the AIDS preventive behaviors in drug users in Zarandieh, and the findings of their study showed that a high percentage of the studied subjects, despite having good knowledge of AIDS, did not have an appropriate preventive behavior (27). Moreover, the results of a study by Memon in the UK showed that although young people were aware of the dangers of risky behaviors, they did not change their intention and behavior towards healthy sexual behaviors (28). In addition, Ghaffari et al. reported no significant association between knowledge of HIV/AIDS and the intention to avoid sexual contacts (29). These findings indicate that having knowledge alone, especially in youth and adolescents, does not have an impact on intention. In other words, the relationship between knowledge and intention is not always linear. Having or not having sufficient knowledge cannot be the only reason for the presence or lack of intention, on the other hand many other factors also play a role as mediators.

In this study there was a significant indirect relationship between perceived susceptibility to HIV/AIDS and the intention of premarital sexual abstinence. Consistent with our results, Iriyama et al. in their study reported that adolescents with higher levels of perceived susceptibility to AIDS did not have a strong intention to avoid sex. In other words, a high level of perceived susceptibility in adolescents had reduced their intention of avoiding sex (11). In contrast to these results, Gielen et al. reported that young women with high levels of perceived susceptibility were more likely to avoid having sex with other people (30). In addition, Ghaffari et al.'s study showed that high level of perceived susceptibility had a positive relationship with the intention to avoid sexual contacts. Hence, young people who believed they were less susceptible to HIV/AIDS were less likely to remain in an abstinence state (29). It seems that the high perceived susceptibility can cause great fear of a health problem which in turn would lead to a denial of the health problem.

In the present study, there was no statistically significant relationship between the perceived severity and the intention of premarital sexual abstinence. It is in line with the results of a study by Leerlooijer et al. (31). However, it is not consistent with the results of some other studies. For instance, Iriyama et al. in their study showed that adolescents who had a high level of perceived severity of AIDS completely agreed with the intention of premarital sexual abstinence (11). Petosa and Jackson in their study showed that perceived severity and perceived susceptibility were associated with the intention to increase safer sexual behaviors, for instance premarital sexual abstinence (32). Because of the tangible and intangible outcomes of HIV/AIDS (such as discrimination and social stigma, medical outcomes, economic and social outcomes), it seems that although the participants in this study perceived the complications and the severity of the disease outcomes, they may not develop the intention of preventing this health problem. Concerning the perceived benefits, it should be noted that the analysis of the benefits minus the barriers may occur when the people think that fighting the barriers is costly, dangerous, unpleasant, and time consuming. According to the researchers, people's perception of the benefits helps to pave the

way. As a result of a person adopts or avoids a behavior based on the results of analysis of the benefits minus the barriers (33). In line with this, a study by Eshrati et al. showed that people's perception of the benefits and barriers was effective in reducing risk behaviors associated with HIV (34). Thus, according to the theory of expected value (35) people adopt a behavior which they expect to provide them with more benefits.

The significant and indirect relationship between perceived barriers and premarital sexual abstinence shows that with increasing the perceived barriers peoples' intention of premarital sexual abstinence reduces. Consistent with our results, the study by Yep showed that perceived barriers had a negative association with high risk sexual behaviors (36). In addition, in a study by Ghaffari et al., adolescents who had perceived more barriers to safe sexual behavior reported that they were less likely to remain in a state of premarital sexual abstinence (29). It seems that, because of the presence of some stimulus or environmental and individual factors promoting sexual behaviors, it might be difficult to make plans and decisions for a healthy sexual behavior.

In this study there was a significant relationship between the perceived self-efficacy and the intention of premarital sexual abstinence. Similarly, several studies have pointed out the important role of perceived self-efficacy on the intention of having sex or avoiding sex (29, 37, 38). In addition, other findings have reported the relationship between sexual behavior and self-efficacy (39, 40). In addition, the study by Sacolo et al. showed a positive relationship and correlation between the intention to delay sex and self-efficacy (41). In Ghaffari et al.'s study, high levels of self-efficacy was associated with the intention of avoiding sex (29). The results of a study by Oladepo and Fayemi showed that there was a statistically significant relationship between the avoidance of sexual behaviors and the perceived self-efficacy (42). Therefore, these results highlight the importance of self-efficacy in programs designed for the prevention of sexual behavior in adolescents and young people. Hence, young people who have self-efficacy skills to overcome barriers to avoid sexual contacts and are also confident of their ability to avoid sex, are more likely to make plans for premarital sexual abstinence. In the present study, there was a significant and direct relationship between the subjective norms about premarital sexual abstinence and the intention of premarital sexual abstinence. As one of the major limitations of the Health Belief Model, it ignores the influence of subjective norms of friends and peers on decisions about health behaviors, especially on issues related to sexual behaviors (43). Therefore, in this study, subjective norms were added to the Health Belief Model. Since young people and their lifestyle are much influenced by friends and peers, their intentions are closely associated with the trends in social networks of peers who have similar high risk behaviors (44). Some researchers believe that peers decisions are among the key factors that influence the adoption and continuity of high risk behaviors (45).

There is much evidence in all communities showing that peer behavior is a model for individual behaviors; this is also, true for sexual issues and behaviors among adolescents and young people (46). For instance, Ruiz-Canela et al. in their study reported that adolescents who had more sexual relations whose friends had encouraged them to have sex. On the other hand, those who had not experienced sex received messages from their friends that had encouraged them to avoid sex (47). Hoseinpour et al. and Peyman et al. reported that 10 to 12 percent of sources of information about HIV/AIDS was friends

and peers (48, 49). Moreover, several studies have pointed out the relationship between subjective norms of peers and the intention of avoiding sex (31, 50). For instance, Ghaffari et al. reported that low level of perceived subjective norms about abstinence was more associated with avoiding sex in adolescents (29).

Several studies have recommended extending the Health Belief Model (51, 52), so that it covers the HIV/AIDS prevention programs. Some experts have suggested including cultural factors such as religious beliefs about sexually transmitted diseases, AIDS, sexual contacts, and the prevention methods in this model (36). In this study, there was a significant relationship between religious beliefs and the intention of premarital sexual abstinence. In line with the results of our study, Cote et al. reported religious beliefs as a motivation to avoid sexual intercourse, especially among adolescents who had an intention of premarital sexual abstinence (53).

Some other studies have also showed that religious behaviors or attitudes may be a protective factor that is associated with delaying the onset of sexual behaviors (54-56). In addition, the findings of other studies suggest that religious activities are among the protective factor avoiding risky sexual behaviors. Hence, students who scored higher in religious items were more likely to have higher self-efficacy and positive attitude towards the premarital sexual abstinence. These students were also, more likely not having an experience of sexual behavior (57). Other studies have shown that paying attention to religion, participation in religious ceremonies, and religious attachment were significantly associated with lower levels of sexual behavior before marriage (54, 58). Rahmani et al. in their study reported that religious beliefs are an important deterrent lowering the past history of sexual behaviors before marriage (59). In addition, Rostosky et al. concluded that religion caused a delay in the onset of sex and even reduced later sexual behavior (60). Moreover, Gold et al. reported that adolescents with stronger religious beliefs were less likely to have sex than adolescents who had less strong religious beliefs (61). Therefore, adding religious beliefs to the Health Belief Model is a good practice that can properly explain the association between premarital sexual abstinence and Islamic principles and religious values in Iran.

4-1. Limitations of the study

The child's habit and socio- cultural context that can influence the pain experience of children and was not controllable in the present study.

5. CONCLUSION

This study had certain limitations. Due to the sensitivity of the topic of this study and as there were specific social, cultural, legal, and moral limitations, we were not able to examine the students' premarital experience of sex. In addition, it is likely that the participants under reported illegal sexual behaviors and issues. Moreover, young single people who did not enter university, for any reason, were not assessed in this study. Hence, it is recommended to conduct similar studies to identify factors associated with premarital sexual behaviors or premarital sexual abstinence in adolescents and young adults outside the university.

6- CONFLICT OF INTEREST: None.

7- **ACKNOWLEDGMENTS**

The authors thank the managers of Universities of Shiraz, Iran. Also, they warmly express their gratefulness to the students who participated closely in the present study. This article has been extracted from a PhD thesis on Health Education and Health Promotion in Shahid Beheshti University of Medical Sciences, Iran.

8- REFERENCES

1. Mondal M, Shitan M. Factors affecting the HIV/AIDS epidemic: an ecological analysis of global data. Afr Health Sci 2013;13(2):301-10.
2. Mazloomy SS, Shirvani-Anarak M, Dehghani Tafti AA, Tabibnejad N, Sheikhha MH. Knowledge and attitude about HIV/AIDS among pregnant women in Yazd, Iran. Iranian Journal of Reproductive Medicine 2007;4(1):29-33.
3. World Health Organization. HIV/AIDS. Data and statistics. Global summary of the AIDS epidemic. 2013. [Accessed 13 Dec 2014].Available at: http://www.who.int/hiv/data/epi_core_dec2014.png?ua=1.
4. Khakshour A, Taghizade Moghaddam H, Kiani MA, Saeidi M, Zarif B. Key Facts about Epidemiology of HIV/AIDS in Children Worldwide. Int J Pediatr 2014; 2(2.2): 145-52.
5. Hoseini BL, Saeidi M, Rezaei Askarieh M, Khademi Gh. Child Malnutrition at Different World Regions in 1990-2013. Int J Pediatr 2015; 3(5.1): 921-32.
6. Vakili R, Khademi Gh, Vakili S, Saeidi M. Child Mortality at Different World Regions: A Comparison Review. Int J Pediatr 2015; 3(4.2): 809-16.
7. Vakili R, Fayyazi Bordbar MR, Saeidi M, Ajilian Abbasi. The Effects of Speech Training, Guidebook and Simultaneous Method, on the Knowledge and Attitude of Students about HIV/AIDS. Int J Pediatr 2015; 3(3.1): 617-24.
8. Mozaffarzadeh Sh, Vahdaninia M. AIDS literacy among female high school students: a cross-sectional study from Iran. Payesh, Journal of The Iranian Institute For Health Sciences Research 2008;7(2):173-180.
9. Hajian Motlag N, Farshi S, Abdollahi E, Arvantaj A, Kordestani A, Ahmadi Yazdi S, et al. Savodjbolagh high school students' knowledge and attitude to HIV &AIDS in Spring 2002. Razi Journal of Medical Sciences 2004;11(41):393-99.
10. Babaieasl F, Kheradmand M, Hosseini S. Effect of school- based education program about HIV/AIDS. J Mazandaran Univ Med Sci 2009;19(70):91-102.
11. 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(1):64-72.
12. Fishbein M. The role of theory in HIV prevention. AIDS Care 2000;12(3):273-78.
13. Anderson KG, Beutel AM, Maughan-Brown B. HIV risk perceptions and first sexual intercourse among youth in Cape Town South Africa. Int Fam Plan Perspect 2007;33(3):98-105.
14. Tenkorang EY, Rajulton F, Maticka-Tyndale E .Perceived risks of HIV/AIDS and first sexual intercourse among youth in Cape Town, South Africa. AIDS Behav 2009;13(2):234-45.
15. Rahmati Najarkolaei F, Niknami Sh, Amin Shokravi F, Ahmadi F, Jafari MR, Rahnama P. The implication of health belief model in planning educational programmes for preventing HIV/AIDS among university students. Payesh, Journal of The Iranian Institute For Health Sciences Research 2009;8 (4):349-59.
16. Resource Center for Adolescent Pregnancy Prevention (ReCAPP). Theories & approaches: the health belief model and sexuality education. 2007- 2009. Available at: http://recapp.etr.org/recapp/iudex.cfm?fuseaction=page.TheoriesDetail&pageID=345. Accessed 9/16/2015.
17. Gray PB. HIV and Islam: is HIV prevalence lower among Muslims? Soc Sci Med 2004; 58(9): 1751-56.
18. Finlay, K A, Trafimow D, Moroi E. The importance of subjective norms on intentions to perform health behaviors. Journal of Applied Social Psychology 1999;29(11):2381-93.
19. Myklestad I, Rise J. Predicting willingness to engage in unsafe sex and intention to perform sexual protective behaviors among adolescents. Health Educ Behav 2007;34(4):686-99.
20. Loewenson PR, Ireland M, Resnick MD. Primary and secondary sexual abstinence in high school students. Journal of Adolescent Health 2004; 34(3):209-215.
21. Vakili MM, Hidarnia A, Niknami Sh, Mousavinasab N. Effect of communication skills training on health belief model constructs about AIDS in Zanjan health

volunteers (2010-11). ZUMS Journal 2011;19(77):78-93.
22. Ghaffari M, Gharlipour Gharghani Z, Mehrabi Y, Ramezankhani A, Movahed M. Premarital Sexual Intercourse-Related Individual Factors Among Iranian Adolescents: A Qualitative Study. Iran Red Crescent Med J 2016; 18(2): e21220.
23. Najarkolaei FR, Niknami S, Shokravi FA, Tavafi an SS, Fesharaki MG, Jafari MR. Sexual behavioral abstine HIV/AIDS questionnaire: Validation study of an Iranian questionnaire. J Edu Health Promot 2014; 3:10.
24. Wong LP. Qualitative Inquiry into Premarital Sexual Behaviours and Contraceptive Use among Multiethnic Young Women: Implications for Education and Future Research. PLoS ONE 2012; 7(12):e51745.
25. Farmer MA, Meston CM. Predictors of condom use self-efficacy in an ethnically diverse university sample. Archives of Sexual Behavior 2006; 35:313–26.
26. Rosenstock IM, Strecher VJ, Becker MH. Social learning theory and the health belief model. Health Education Quarterly 1988; 15:175–83.
27. Karimi M, Niknami Sh. Self-efficacy and perceived benefits/barriers on the AIDS preventive behaviors. Journal of Kermanshah University of Medical Sciences 2011;15(5):384-92 (In Persian).
28. Memon A. Young people's knowledge, beliefs and attitudes about HIV/AIDS: a review of research. Health Education Research 1990; 3: 327-33.
29. Ghaffari M, Niknami Sh, Bazargan M, Kazemnejad A, Mirzaee E, Ghofranipour F. Correlates of the intention to remain sexually inactive among male adolescents in an islamic country: case of the Republic of Iran. J Sch Health 2009; 79(3): 123-29.
30. Gielen AC, Faden RR, O'Campo P, Kass K, Anderson J. Women's protective sexual behaviors: a test of the Health Belief Model. AIDS Educ Prev 1994;6:1–11.
31. Leerlooijer JN, Ruiter RA, Damayanti R, Rijsdijk LE, Eiling E, Bos AE, et al. Psychosocial correlates of the motivation to abstain from sexual intercourse among Indonesian adolescents. Trop Med Int Health 2014;19(1):74-82.
32. Petosa R, Jackson K. Using the Health Belief Model to predict safer sex intentions among adolescents. Health Educ Q 1991;18:463–76.
33. Karimy M, Heidarnia AR, Ghofranipour GH. The effect of health education based on health belief model on preventive behaviors of AIDS in addict in Zarandieh. Journal of Guilan University of Medical Sciences 2009; 18(70):64-73 (In Persian).
34. Eshrati B, Asl RT, Dell CA, Afshar P. Preventing HIV transmission among Iranian prisoners: Initial support for providing education on the benefits of harm reduction. Harm Reduct J 2008; 5: 21.
35. Glanz K, Rimer BK, Viswanath K. Health behavior and health education: Theory, research and practice. 4th edition, San Francisco: Jossey-Bass; 2008.
36. Yep GA. HIV prevention among Asian–American college students: Does the Health Belief Model work? College Health 1993; 41:199-205.
37. Lin P, Simoni M, Zemon V. The health belief model, sexual behaviors, and HIV risk among Taiwanese immigrants. AIDS Education and Prevention 2005;17 (5):469-83.
38. Allard R. Beliefs about AIDS as determinants of preventive practices and of support for coercive measures. Am J Public Health 1989; 79:448–52.
39. Reinecke J, Schmidt P, Ajzen I. Application of the theory of planned behavior to adolescents' condom use: A panel study. Journal of Applied Social Psychology 1996:26(9): 749–72.
40. Corby NH, Jamner Schneider M, Wolitski RJ. Using the theory of planned behavior to predict intention to use condoms among male and female injecting drug users. Journal of Applied Social Psychology 1996; 26(1): 52–75.
41. Sacolo HN, Chung M-H, Chu H, Liao Y-M, Chen C-H, et al. High Risk Sexual Behaviors for HIV among the In-School Youth in Swaziland: A Structural Equation Modeling Approach. PLoS ONE 2013; 8(7): e67289.
42. Oladepo O, Fayemi MM.Perceptions about sexual abstinence and knowledge of HIV/AIDS prevention among in-school adolescents in a western Nigerian city. BMC Public Health 2011;11:304.

43. Poss JE. Developing a new model for cross-cultural research: synthesizing the Health Belief Model and the Theory of Reasoned Action. ANS Adv Nurs Sci 2001; 23(4):1-15.
44. Ferrer L, Cianelli R, Guzman E, Cabieses B, Irarrázabal L, Bernales M, et al. Chilean University Students: Knowledge And Concern About HIV/AIDS. J Assoc Nurses AIDS Care 2007; 18(5):51-6.
45. Rahmati Najar kolaei F, Niknami S, Amin Shokravi F, Farmanbar R, Ahmadi F, Jafari M. Family System and Its Effect's on HIV/AIDS High Risk Behaviors: A Qualitative Study. Journal of Guilan University of Medical Sciences 2011; 20(77):69-80.
46. Cerdana GP, Omg-Chang Chang, Hui-Sheng Lin, Te-Husing Sun, Cernada Ching-Ching Chen. Implication for Adolescent Sex Education in Taiwan. Studies in Family Planning 1986; 17(4):181-7.
47. Ruiz-Canela M, López-Del Burgo C, Carlos S, Calatrava M, Osorio A, Irala Jd. Family, friends, and other sources of information associated with the initiation of sexual relations by adolescents in El Salvador. Rev Panam Salud Publica 2012; 31(1):54-61.
48. Hoseinpour AM, Emami Moghadam Z, Saeidi M, Khademi Gh, Khodaee GH. The Knowledge and Attitude of Teachers about HIV/AIDS; before and after Training in Khorasan Razavi Province, Iran. Int J Pediatr 2015;3(6-2):1161-68.
49. Peyman N, Jangi M. The Effect of Educational Intervention on Knowledge, Attitude and Performance of High School Girl Students about AIDS. Int J Pediatr 2015; 3(4-2): 833-39.
50. Cha ES, Doswell WM, Kim KH. Evaluating the theory of planned behavior to explain intention to engage in premarital sex amongst Korean college students: a questionnaire survey. International Journal of Nursing Studies 2007; 44: 1147–57.
51. Abraham C, Sheeran P, Spears R. Health beliefs and promotion of HIV-preventive intentions among teenagers: a scottish perspective. Health Psychol 1992;11: 363-70.
52. Abraham C, Sheeran P. In search of psychology of safer sex promotion: beyond beliefs and texts. Health Educ Res 1993;8:245-54.
53. Cote J, Minsky S, Lourenco A, Howland J. Personal values and sexual decision-making among virginal and sexually experienced urban adolescent girls. J Adolesc Health 2001; 28:404–9.
54. Hardy SA, Raffaelli M. Adolescent religiosity and sexuality: an investigation of reciprocal influences. J Adolesc 2003; 26(6):731-39.
55. Rostosky SS, Regnerus MD, Wright ML. Coital debut: the role of religiosity and sex attitudes in the Add Health Survey. J Sex Res 2003; 40(4):358-67.
56. Lammers C, Ireland M, Resnick M, Blum R. Influences on adolescents' decision to postpone onset of sexual intercourse: a survival analysis of virginity among youths aged 13 to 18 years. Journal of Adolescent Health 2000; 26(1):42-8.
57. Shirazi KK, Morowatisharifabad MA. Religiosity and determinants of safe sex in Iranian non-medical male students. J Relig Health 2009; 48(1):29-36.
58. McCree DH, Wingood GM, DiClemente R, Davies S, Harrington KF. Religiosity and risky sexual behavior in African-American adolescent females. J Adolesc Health 2003;33(1):2-8.
59. Rahmani A, Merghati-Khoei E, Moghadam-Banaem L, Hajizadeh E, Hamdieh M, Montazeri A. Development and psychometric evaluation of the Premarital Sexual Behavior Assessment Scale for Young Women (PSAS-YW): an exploratory mixed method study. Reprod Health 2014;11:43.
60. Rostosky SS, Wilcox BL, Wright MLC, Randall BA. The Impact of Religiosity on Adolescent Sexual Behavior: A Review of the Evidence. Journal of Adolescent Research 2004; 19(6):677-97.
61. Gold MA, Sheftel AV, Chiappetta L, Young AJ, Zuckoff A, DiClemente CC, et al. Associations between religiosity and sexual and contraceptive behaviors. J Pediatr Adolesc Gynecol 2010; 23(5): 290.