http:// ijp.mums.ac.ir
Original Article (Pages: 3405-3414)

The Prevalence of Cigarette Smoking among Adolescents in Marivan City- Iran: based on Health Belief Model (HBM)

Naseh Ghaderi[1], Parvaneh Taymoori[2], *Fayegh Yousefi[3], Bijan Nouri[2]

[1]Student Research Committee, Kurdistan University of Medical Sciences, Sanandaj, Iran.
[2]Social Determinants of Health Research Center, Kurdistan University of Medical Sciences, Sanandaj, Iran.
[3]Department of Psychiatry, Faculty of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran.

Abstract

Background

Cigarette smoking is a common problem among teenagers. The aim of this study was to determine the prevalence of Cigarette Smoking among Teen Boys in Marivan city, based on Health Belief Model.

Materials and Methods

A cluster randomized sample of 470 male students with16.2 ± 2.5 from 6 secondary schools of Marivan city- Iran, completed a self-report questionnaire consisting of Health Belief Model constructs Data was analyzed by Chi-square and independent t-test, using SPSS-16.

Results

The rate of smoking the cigarette among students was 4.7% (21/470). The experience of smoking in the last 30 days and throughout life reported 6.4% and 34.7% respectively. Significant differences between smokers and nonsmokers were found for perceived benefits ($P<0.05$), perceived self-efficacy ($P<0.05$), and cues to action ($P<0.05$).

Conclusion

Based on results from the present study, increasing the perceived susceptibility could decrease smoking among students.

Key Words: Cigarette smoking, Health Belief Model, Iran, Students.

*Please cite this article as: Ghaderi N, Taymoori P, Yousefi F, Nouri B. The Prevalence of Cigarette Smoking among Adolescents in Marivan City- Iran: based on Health Belief Model (HBM). Int J Pediatr 2016;4(9): 3405-14. **DOI: 10.22038/ijp.2016.7399**

Corresponding Author:

Fayegh Yousefi, Department of Psychiatry, Faculty of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran.

Email: fykmsu@gmail.com

Received date Jun10, 2016; Accepted date: Jul 22, 2016

1- INTRODUCTION

Smoking is one of the health, psychological and social challenges as well as one of the commonest risky preventable factors in terms of diseases and mortality (1). In Iran, according the available statistics, 11.9% of the population above 15 years old smoke, with 13.2 cigarettes consumed per person on a daily basis (2). World Health Organization (WHO) has estimated that smoking has resulted in the death of 5.4 million individuals in 2004 (3) and 100 million deaths throughout the twentieth century, being far greater that the total of mortalities caused by AIDS, tuberculosis, road accidents, and suicides (4). Based on the report by health ministry, every year around 75,000 people lose their lives as a result of smoking in Iran (5, 6).

In its recent challenge, smoking has targeted preadolescents and teenagers (7). Approximately, half of the current smokers have started smoking at ages below 18 where dependence on nicotine is more intense among those starting smoking earlier than those who have started smoking later. The results showed less chance for quitting and also there was greater mortality rates which it caused by smoking (8, 9). Recent reports show that prevalence of smoking among teenagers is increasing, while the age of starting to smoke is decreasing: The total prevalence of smoking in 20 provinces of the Iran has been reported to be 10.6% and 17.4% among guidance and high school students, respectively (10).

Several factors including lack of knowledge about the addictive property of cigarette and its effect on health, perceived social acceptance caused by consumption, life problems, the effect and pressure of peers for consumption, socioeconomic conditions, familial background of tobacco use, together with personal factors including low self-esteem, tendency to acquire a personality, and doing risky behaviors result in decreased or increased chance of beginning of smoking among teenagers (11-13). The results obtained by Nwankwo et al., revealed that smoking begins by the final years of school, where mostly smoked when they were under psychological pressure or stress and even when influenced by peers and friends (13). Acquiring the knowledge and awareness about the personal, familial, and social damages caused by smoking and the health-treating risks of it can prevent teenagers from smoking (14).

One of the most applicable models of health behavior for prediction of preventive health measures is the Health Belief Model. It has been used as a suitable predictive framework in this research. Based on this model, the probability of adopting healthy behavior is contingent upon two issues: a person’s perception of what danger threatens them and the person’s evaluation of the perceived benefits and obstacles of that healthy behavior (15, 16).

Health Belief Model focuses on health and behavior's belief. For example, the respondents' belief could prevent the cigarette smoking (8). Also, this Model discuss the perception of what is danger threatens for person and also her/him person’s evaluation of the perceived benefits and obstacles of that healthy behavior. For instance, if a person believes an event is danger threatens for him/her, she/he will try to prevent of it (15, 16).

Based on the young population structure of Iran and the significance of the age when tobacco use begins, mostly from teenagers periods, and its effect on the mental and physical health of teenage students (8, 9), the main objective of this research was to determine the rate of smoking the cigarette and its' associated factors among male high school students: Based on constructs of Health Belief Model, in Marivan city, Iran (**Figure.1**).

Fig.1: Location of Marivan city, Iran

2- MATERIALS AND METHODS

2-1. Study Design and Population

This cross-sectional study conducted on 470 male students of state high schools in Marivan, Iran in 2015. In this study, participants were selected in 6 high schools by multistage clustering sampling method. Estimation of the sample volume was done based on $n=(z/d)^2p(1-p)$ formula.

Having investigated previous studies (10) and considered **P** (prevalence)=17%, **d** (desired precision)= 034%, and **z** (confidence level of 95%).

The sample volume was estimated to be 468 according to expert comment. Finally, to have a higher confidence level, 470 students, chosen as the sample size.

2-2. Methods

The data study was measured by a scale based on instrument by Reisi et al. (2014) related to cigarette smoking (17). The instrument was validated using the comments presented by four experts of health education and promotion from Kurdistan and Isfahan Universities of Medical Sciences. To determine the questionnaire's reliability, following collection of the information related to 58 students, internal consistency and Cronbach's alpha consistency method were used. The value for knowledge, perceived susceptibility, perceived barriers, perceived benefits, perceived self-efficacy, and cues to action was 75%, 81%, 77%, 79%, 82%, and 80%, respectively.

To start the procedure, first by referring to the classes selected during the multistage cluster sampling out of the male high school around Marivan city -Iran, the mentioned questionnaire was presented to and completed by all students in those classes. From among the 12 male high schools, 6 high schools (clusters) were selected relative to the students under coverage, where the higher the number of high schools students, the larger the number of samples selected. In this study, the students who had smoked at least one cigarette per day were considered as smoker and those who did not smoke, were placed in the group of nonsmokers. Moreover, the students were asked about whether they had smoked during the last month and had any experience of smoking even one cigarette during their lifetime.

2-3. Measuring Tests

The data collection instrument was a questionnaire includes 55 items in three sections based on the Health Belief Model. The first part of the questionnaire was included 11 questions about demographic data (such as age, level of education, fail in school history and father's occupation). The second part included 11 questions related on knowledge of smoking harm with 3 possible answers (Yes, No and I don't know with a min score of 11 and a max of 22). The third part included 33 questions related to the constructs health belief model, was specified with the 5-choice Likert scale from strongly agree to totally disagree including 12 questions, perceived susceptibility (with a min score of 12 and a max score of 60), perceived benefits 6 questions and perceived barriers

6 questions (with a min of 6 and a max score of 30), 4 questions about perceived self-efficacy (with a min of 4 and a max score 20) and 5 questions about cues to action with effect less, low and high range (with a min score of 5 and max of 15).

2-4. Inclusion Criteria

Inclusion criteria were high school male students and consent to participate.

2-5. Exclusion Criteria

Exclusion criteria were failure to fulfill the questionnaire correctly and completely.

2-6. Ethical Considerations

This paper was extracted from an MA thesis in health education prepared by Mr. Naseh Ghaderi. To take ethical considerations into account, first permission was received from Kurdistan University of Medical Sciences and then the required coordination's were performed with the province's Education Department, Marivan city, and the managers at the selected high schools.

Before completion of the questionnaire, the aim of the research was explained to the students and their consent was taken writing. Further, it was announced that inclusion of these participants in this study was absolutely voluntary, with the anonymity of the questionnaire being emphasized to ensure them that their information would be collected and kept confidentially.

2-7. Data Analyses

Statistical analysis was carried out using SPSS version 17 and to describe the status of the participants, descriptive statistics including mean, percentage, and standard deviation were used. In order to analyze the relationship between the behavior of smoking or not smoking with quantitative demographic variables and the constructs of the health belief model, independent t-test was used.

To compare the variables qualitatively, Chi-square test was also used.

3-RESULTS

Out of the 470 studied students, 163 (34.7%), 140 (30%), and 167 (35.3%) were the first-, second- and third-year students, respectively. The mean age of the students was 16.2±2.5 and their age range was 14-17 years old.

The educational level of the parents of the majority of the samples was diploma or below (father and mother: 78.1 and 81.9, respectively). No significant difference was observed between the education of parents and smoking (P=637 and P=366, respectively). The mean of the birth rank in the family was 2.53. Based on the obtained results, 4.7% (21) of the students were regular daily smokers. Further, 6.4% (31) had smoked during the last 30 days and 34.7% (163) had experienced smoking at least once in their life. Also, results showed that 53% of the students had a smoker friend.

The two groups of smokers and nonsmokers were significantly different in terms of the mother's job status, smokers in the family, having a smoker friend, and living with parents ($P \leq 0.05$). However, no significant difference was observed between the status of smoking among the students with school grade, father's job, parents' education level, birth rank in the family, and fail in school history (**Table.1).** **Figure.1** shows the mean of knowledge, perceived susceptibility, perceived barriers, perceived benefits and self-efficacy between current smokers and none-smokers 'participants.

Based on each of the model's constructs (HBM), the mean total score obtained by the students for each construct has been listed in **Table.2**. The results of independent t-test implied that a significant difference was seen between the mean of the scores of three constructs

of the health belief model (perceived benefits, cues to action, and self-efficacy) in the smoker and non-smoker groups (P≤0.05). However, regarding the constructs of perceived barriers, susceptibility and knowledge of smoking harm no significant difference was seen (**Table.2**). Moreover, the results revealed that there was a significant difference (P≤0.001) between two groups (current smokers and non- smokers) in perceived self-efficacy with respect to prevention from smoking (**Table.2**).

Table-1: Demographic characteristics of study participants (n=470)

Demographic features		Groups		P-value
		Smokers	Non- Smokers	
High school grade	First year	0.085	33.89	0.29
	Second year	1.72	27.98	
	Third year	2.13	33.43	
Fail in school history	Yes	0.042	2.34	0.09
	No	4.04	93.19	
Father Job	Employee	0.064	19.15	0.08
	Self-employed	2.12	35.32	
	Worker	1.06	25.95	
	Retired	0.021	4.04	
	Other	0.042	11.06	
Mother Job	Housekeeper	3.62	88.51	0.01
	Employee	0.021	3.62	
Smoker friends	Yes	3.83	50	0.003
	No	0.064	45.53	
A smokers in the family	Yes	2.12	27.66	0.004
	No	2.34	67.84	

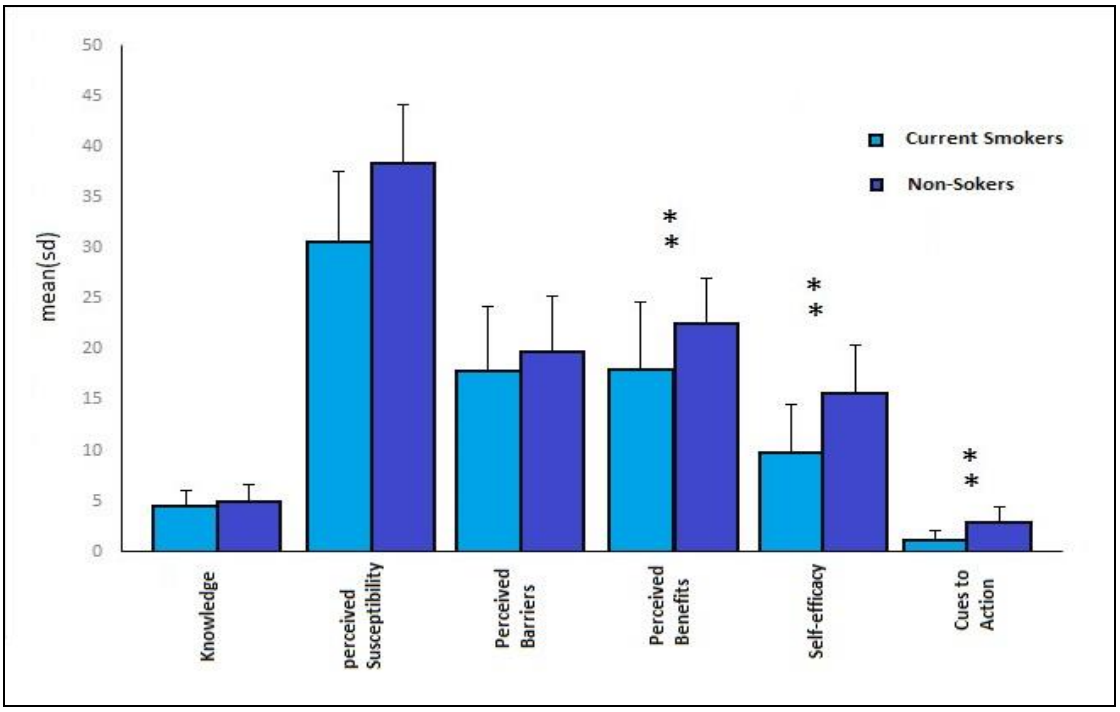

Fig.1: The mean of Knowledge, perceived susceptibility, perceived barriers, perceived benefits and self-efficacy between current smokers and none-smokers ' participants

Table-2: The mean (SD) of the Health Belief Model structures among smokers and non- smokers students

Structures	Current smokers (N=21)		Non-smokers (N=449)		P- value
	Mean	SD	Mean	SD	
Knowledge	4.47	1.63	4.92	1.72	0.20
Perceived susceptibility	30.62	6.87	38.31	5.83	0.13
Perceived barriers	17.81	6.34	19.77	5.49	≥ 11
Perceived benefits	18.04	6.55	22.60	4.45	001
Self-efficacy	9.76	4.78	15.65	4.69	001
Cues to action	1.19	0.928	2.84	1.61	001

SD: Standard deviation.

4- DISCUSSION

In this research done on high schools male students in Marivan city-Iran, the results had indicated that prevalence of the smoking experience is relatively lower than in many other regions of Iran (18,19), such that 4.7% and 6.4% of the samples had smoked during the day and in the last 30 days, respectively. A total of 34.7% of the students had smoked at least once in their life. In the research by Karimi et al. (20), 46% of the students had tested cigarette and 13.6% were current smokers. Furthermore, the study by Mohammad Pourasl et al. in Tabriz reported this value to be 23% (21). The examinations done based on Global Young Tobacco Survey (GYTS) findings between 1990 and 2001 to explore the status of smoking among teenagers in 75 regions of 43 countries reported this prevalence as 34.3% in Jordan, 12.1% in Sri Lanka, 21.5% in Singapore, 67.2% in Moscow, and 23% in total (22). Based on various studies, 80% of the smoker adults had started smoking at ages below 18 years old. The low age of smoking onset results in increased smoking and more intense dependence on nicotine (23, 24).

In the majority of studies done on smoking and drugs, the important role of friends, learning, and modeling the habits of friends has been established (19, 20). Similarly, in this research, congruent with other studies in the country and abroad (20, 24, 25), the students who had a smoker friend smoked more frequently. Due to this reason, the teenagers interested in smoking mainly choose friends or are accepted by those who are smokers (26). The relationship between smoking in the family and smoking among teenagers has been confirmed in various domestic and foreign studies (27, 28). In this study, a significant difference was observed between smoking in students and presence of a smoker in the family, suggesting that the prevalence of smoking was greater among the students who had a smoker family member, congruent with the previous studies in Iran (17, 20).

The results of various studies imply that beginning of smoking is significantly correlated with the ages of adolescence. The results of the current study showed that 1.5% of participants had smoking onset in age of 12 years old. Also, 3.8% of students with 15 years old, claiming the highest prevalence the beginning period of smoking. These findings were in line with the results of Karimi and Akbari (20, 28) in Iran and Taita in Ukraine (29). The inclination to and doing the action of smoking in early ages can be a serious risk for the public health. The results of various studies have indicated that the people who start smoking at earlier ages, are more prone to become heavy smokers, and thus are less likely to quit it (9, 30).

The results of this study also, revealed that no significant difference was observed between the scores of perceived

susceptibility and knowledge with the smoking across the smoker and non-smoker groups (**Table.2**), possibly due to poor knowledge of students about the risks of smoking. Congruent with these results, investigating Thai teenagers, Li indicated that there was no significant difference between the smoker and non-smoker groups in terms of awareness. The results of various investigations in Western countries have demonstrated that teenager smokers in general have this awareness about the implications and harms of smoking (32).

The majority of the studied students in this research had a relatively low perceived susceptibility to the behavior of smoking and felt threatened by its dangers. In a similar study by Li et al. in the USA on first grade students of high school about being exposed to secondhand smoke in their living environment, the results indicated that the people, who had a high perceived susceptibility in comparison with those with low perceived susceptibility, subjected themselves less to cigarette smoke (33). In addition, another result was the low score of perceived barriers in comparison with other constructs, whereby no significant difference was observed. In line with these results, the results of the study by Javadzade and Charkazi in male Iranian teenagers reviewed that no significant difference existed in terms of perceived barriers with smoking across the smoker and non-smoker groups (17, 34).

The most important perceived barriers for not smoking were having smoker friends, easy access, lack of attention and reprehension by the parents, and low price of the cigarette. The most important perception related to the perceived barriers for not using cigarette in this study was the problem of "not being able to say no" in response to the proposal of friends and peers for smoking. Training of the skill of resistance and saying no in response to the pressure of peers can be effective. The results of numerous studies have shown the effectiveness of these interventions considering the training of skills related to resistance to drug Abuse (35, 36).

It is necessary that through proper measures, the barriers of smoking become highlighted among students. This is because the perceived barriers are the potential inhibitory factor to adopt preventive measures against smoking. This causes the person to reject the proposal of smoking and to analyze the benefits and uses of the action against costs, risks, implications, time, etc., and finally adopts a healthy behavior (37).

The status of the perception of students about the perceived benefits towards not smoking, there was a significant correlation. Therefore, it seems that the perception of the majority of students was high as to not smoking results in promotion of health and reduced risk of contracting chronic diseases. The study by Ghaderi et al. also, indicated that there is a positive relationship between the perceived benefits and avoidance of high risk behaviors during puberty where in both studies the greatest perceived benefits were related to the feeling of living healthy (38). Another important result of this study was the significant relationship between the constructs of perceived self-efficacy and cues to action across the smoker and non-smoker groups. The mean score of perceived self-efficacy and cues to action was observed to be higher in non-smokers. However, in a research similar to this project, Kear, who studied Chinese students, concluded that there was a significant relationship between the self-efficacy of individuals and the behavior of the smoking (39).

Additionally, in this study considering the construct of cues to action in students when confronting not to smoke, the most important guides were the training given

by teachers, broadcasting programs, and educational contents in books.

4-1. Limitations of the study

The limitations of this study were the use of self-report to complete the questionnaires and protective behaviors were investigated in male students, therefore in order to compare smoking in both sexes, other studies on females are also, required. It is suggested that smoking behavior among female students will also, be examined in future studies.

5- CONCLUSION

The findings of this study show that the prevalence of smoking in the studied sample is somewhat lower than other regions of Iran, but it should be noted that if no interventions are done to prevent smoking in this age group, it is possible that non-smokers start smoking influenced by their friends in the future. Thus, it seems necessary to design interventions to prevent smoking. The findings of the study also, showed that the structure of perceived benefits, self-efficacy and cues to action are the strongest predictors of smoking among students. Therefore, the educational programs focus on Health Belief Model must be designed to prevent smoking among boy students.

6- CONFLICT OF INTEREST: None.

7- ACKNOWLEDGMENT

This paper was extracted from an MA thesis in health education prepared by Mr. Naseh Ghaderi entitled investigation of the Assessment of Cigarette Smoking among Teen Boys in Marivan city in 2015: Based on Health Belief. Hereby, we highly appreciate deputy of research and technology at Kurdistan University of medical sciences for providing the financial sources of this thesis and also, the cooperation of department of education of the Marivan city and especially of the students participating in the study.

8- REFERENCES

1. Lopez MJ, Perez-Rios M, Schiaffino A, Nebot M, Montes A, Ariza C. et al. Mortality attributable to passive smoking in Spain, 2002. J Tob Control 2007; 16: 373-7

2. Mehrabi S, Delavari A, Moradi GH, Esmailnasab N, Pooladi A, Alikhani S, et al. Smoking among 15 to 64 year old Iranian people in 2005. Iranian Journal of Epidemiology 2007; 3(1, 2): 1-9.

3. World Health Organization. WHO Report on the Global Tobacco Epidemic 2008: The MPOWER Package. Geneva: World Health Organization. 2008: ISBN 92-4-159628-7

4. Fong G, Cummings K, Borland R, Hastings G, Hyland A, Giovino G, et al. The conceptual framework of the International Tobacco Control (ITC) policy evaluation project.British Medical Journal 2006; 15(3): 3-11.

5. Cooper ML. Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. Journal of Studies on Alcohol 2002;14(2):101-17.

6. Glanz K, Rimer BK, Visvanath K. Health Behavior and Health Education Theory, Research, and Practice. San Francisco: Jossey-Bass; 2008:47-50.

7. KhajeDeloi M, MolaviNojoomi M. Guidelines for controlling and monitoring the tobacco epidemic. Tehran, Iran: Seda Publication; 2003: 41-2.

8. Ayatolahi A, Mohamad pourasl A, Rajaifard A. Predict the three stages of smoking in high school students in Shiraz. Med J Tabriz Univ Med Sci 2004; 26(4): 10-5.

9. Tamim H, Terro A, Kassem H, Ghazi A, Khamis TA, Abdul Hay MM, et al. Tobacco use by university students, Lebanon, 2001. J of Addiction 2003; 98(7): 933-9.

10. Kelishadi R, Ardalan G, Gheiratmand R, Majdzadeh R, Delavari A, Heshmat R, et al. Smoking behavior and its influencing factors in a national-reprehensive sample of Iranian adolescents. J Prev Med. 2006; 42: 423-26

11. Tjora T, Hetland J, Aaro LE, Overland S. Distal and proximal family predictors of adolescents' smoking initiation and development: a longitudinal latent curve

model analysis. J Public Health 2011; 11: 9-12.

12. Schaefer DR, Haas SA, Bishop NJ. A dynamic model of US adolescents' smoking and friendship networks. J Public Health 2012; 10(2): 8-12.

13. Nwankwo B, Osondu C, Abanobi O, Amadi N. Antecedents to smoking behavior among male adolescent students in South East Region Nigeria. J of tropical medical 2008; 3(3):129-36.

14. Saibaba A, Mohan Ram M, Ramana Rao G. Nutritional status of adolescent girls of urban slums and the impact of ICE on their nutritional knowledge and practices. Indian J Community Med 2002; 27 (4):151-6.

15. Li K, Kay NS. Correlates of cigarette smoking among male Chinese college students, in China- a preliminary study. Electron J Health Educ 2009; 12:59-71.

16. Janz NK, Champion VL, Strecher VJ. The health belief model. In: Glanz K, Rimer BK, Lewis FM, editors. Health behavior and health education: Theory, research, and practice. 3rd ed. San Francisco, CA: Jossey-Bass; 2002: 45-66.

17. Reisi M, Javadzade S H, Shahnazi H, Sharifirad GH, Charkazi A, Moodi M. Factors affecting cigarette smoking based on health-belief model structures in pre-university students in Isfahan, Iran. Journal of Education and Health Promotion 2014; 3: 31-35.

18. Khosravi A, Najafi F, Rahbar M, Atefi A, Motlag M, Kabir M. Health indicators in the Islamic Republic of Iran Tehran: Network Development and Health Promotion Center, Management DoTaI; 2009.

19. Goli S, Mahjub H, Moghimbeigi A, Poorolajal J, HeidariPahlavian A. Application of mixture models for estimating the prevalence of cigarette smoking in Hamadan, Iran. Journal of Research in Health Sciences 2011;10(2):110-15.

20. KarimyM, Niknami S, Heidarnia A, Hajizadeh I**.** Assessment of Knowledge, Health Belief and Patterns of Cigarette Smoking Among Adolescents. J FasaUni M Sci 2011; 1(3): 142-148.

21. Mohamad Pour Asl A, Fakhari A, Rostami F, TabatabaiVakili SM. Analysis of the multi variant of the psychology factors relate to the cigarette usage in teenagers. J of Payesh 2006; 5(3): 177-84.

22. The Global Youth Tobacco Survey Collaborative Group. Tobacco use amongyouth: a cross country comparison. Tob Control 2002;11: 252-70.

23.MohtashamAmiri Z, SirousBakht S, Nikravesh Rad R. Cigarette smoking in male high school students of Rasht. J Guilan Univ Med Sci 2007; 17(65): 100-7.

24. Villanti A, Boulay M, Juon HS. Peer, parent and media influences on adolescent smoking by developmental stage.Addictive behaviors 2011; 36(1-2):133-36.

25. Ramezankhani A, Sarbandizaboli F, Zarghi A, Heidari G, Masjedi M. Pattern of cigarette smoking in adolescent students in Tehran. J Pejouhandeh 2010;15(3): 115-22.

26. Barreto SM, Giatti L, Casado L, de Moura L, Crespo C,Malta D. Contextual factors associated with smoking amongBrazilian adolescents. J Epidemiol Community Health 2012; 66(8):723-9.

27. El-Amin SET, Nwaru BI, Ginawi I, Pisani P, HakamaM. The role of parents, friends, and teachers in adolescentstobacco habits.Tobacco Control 2010; 20(2):94.

28. Akbari M. Developing and testing of a model forpreventing of smoking behavior among adolescents in TehranTehran: Tarbiat Modares University; 2007; 7(2):60-64

29. Abedini S, Kamalzadehtakhti H, Sadeghifar E, Shahrakivahed A. The survey of cigarette smoking situation in BandarAbbas Medical students. J HormMeSc 2007; 11(4):297-302.

30. Breslau N, Peterson EL. Smoking cessation in young adults: age at initiation of cigarette smoking and other suspected influences. Am J Public Health 1996; 86(2): 214-20.

31. Trinh Cl. Factors related to smoking behavior among high school students in cantho city, vietnam. Cantho: mahidol university; 2005; 5(1):43-48.

32. Warren CW, Lea V, Lee J, Jones NR, Asma S, McKenna M, et al. Change in tobacco use among 13–15 year olds between 1999 and 2008: findings from the Global Youth Tobacco Survey. J Global Health Promotion 2009; 16(2):38-90.

33. Li C, Unger J, Schuster D, RohrbachL,Howard-Pitney B, Norman G. youths exposure toenvironmental tobacco smoke(ETS) Associationswith health beliefs and social pressure. J AddictiveBehaviors 2003; 28:39-53.

34. Charkazi A, Rakhshani F, Esmaeili Ab, Esmaeili A. Eleventh Grade Student's Attitude based on Health Belief Model (HBM) toward Smoking and it's Complications in Zahedan. JNursing and Midwifery, Gorgan 2010; 7(2): 49-57.

35. Taeremian F, Mehryar AH. Effectivenessof life skills training program in prevention ofdrug use among secondary school students.J Zahedan Uni MedSci 2009; 16 (65):77-88.

36. BorujeniMasudi D, BaghianiMoghadam MH, SharifiradGH,Fallahzadeh H. Prevention of drug andsubstance abuse behaviors based on thehealth belief model in boys' high schoolBorujen . J research healthsystem 2012; 8(2):237.

37. Sharifi-rad G, Hazavei M, Hasan-Zadeh A, Danesh-Amouz A. The effect of health education based on health belief model on preventive actions of smoking in grade one, middle school students. Arak Univ Med Sci J 2007; 10(1): 79-86.

38. Valizadeh R, Taymoori P, Yousefi F, Rahimi L, Ghaderi N. The Effect of Puberty Health Education based on Health Belief Model on Health Behaviors and Preventive among Teen Boys in Marivan, North West of Iran. Int J Pediatr 2016; 4(5): 3271-81.

39. Kear ME. Psychosocial determinants of cigarette smoking among college students. J Community Health Nurs2002; 19(4): 245-57.