

Assessment of the Knowledge and Attitude of Male Students towards Smoking Based on Health Belief Model

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ABSTRACT

Introduction: These days, smoking is a global problem and the most common preventable cause of death in the world, accounting for about one-eighth of all deaths in the world. Considering the importance of smoking prevention, especially in high school boys who cover the majority of adolescents in the country, the purpose of this study was to investigate the knowledge and attitudes of male students towards smoking based on the health belief model.

Methods: In this observational cross-sectional study, 250 high school male students in Fasa were studied. First, 5 high schools were identified by cluster sampling method and 50 students of each designated high school were randomly entered into the study. Then, the researcher made questionnaire including demographic information and health belief model constructs was given to them. Health belief model constructs were measured with a 5-point Likert scale. Data analysis was done using frequency distribution tables by SPSS 16.0.

Results: The mean age of students was 16 ± 0.65 . Mean scores of knowledge, behavior, perceived sensitivity, perceived intensity, perceived benefits, perceived barriers and students' self-efficacy were 5.00 ± 1.00 , 3 ± 1.03 , 3 ± 0.01 , 9 ± 1.00 , 10 ± 1.00 , 5 ± 1.00 , and 7 ± 1.00 respectively.

Conclusion: The results showed that students' knowledge is moderate comparing to the standard state and their attitudes in the areas of self-efficacy, perceived benefits and perceived intensity were moderate to high.

Keywords: Health Belief Model, Attitude, Awareness, Smoking, Male students

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INTRODUCTION

Adolescence is a transitional stage of a person's physical and mental development that is accompanied by biological, social, and psychological changes. High school is a critical period for acquiring health-related habits and lifestyle choices. For this reason, the most risky period of life in terms of performing high-risk behaviors such as starting smoking is adolescence. Trying to gain individual and social identity, hedonism, low self-esteem and lack of skills to communicate with others make adolescents prone to smoking abuse and gaining awareness causes changes in the adolescent's thought process and ultimately performance (1).

Behaviors and lifestyles of people are mainly establish during adolescence (2) and 70% of deaths occur due to behaviors that occurred in adolescence and could be corrected (3) Among these behaviors smoking can be mentioned that begins in adolescence and is one of the public health concerns in all countries, especially in developing countries (4)

Studies in several countries around the world have shown that most smokers start smoking under the age of 18 and during adolescence (5).

Most studies have shown that the majority of smokers started smoking during adolescence or early adulthood. When people start smoking at a younger age, they are more likely to continue smoking in adulthood (6). Hence, they suffer from the most complications and diseases caused by smoking (8-7).

So far, despite numerous reports on the dangers of smoking, the tendency of people in the community to it, especially among young people and adolescents is increasing and the age of onset of smoking is decreasing (9-10). Among adults who smoke every day, 82% have first smoked before the age of 18, and approximately half of teens who currently smoke will continue to do so until they die from smoking-related illnesses (11).

According to the World Health Organization, the prevalence of smoking in Iran is 15.5% among boys aged 15 to 19 and 0.7% among girls. (12) In studies conducted in different parts of Iran, the prevalence of smoking in adolescents in Shiraz is 16.9%, Tehran 28.2%, Tabriz 12.6%,

Isfahan 8.7% and Zahedan 25.2% (13). Extensive support and publicity for tobacco factories, easy access to it, and low prices are factors that increase the risk of smoking in young people. Encourage by friends and smoker parents also play an important role in smoking. (14) Smoking is very common among adolescents and young people in different countries and their information about the relationship between smoking and various physical diseases is insufficient and they do not receive the necessary awareness in this field. (15)

Researchers in developed countries have consistently emphasized the importance of preventing smoking among adolescents. Programs to prevent smoking among students have also been designed and implemented. The purpose of these programs is to increase awareness, change attitudes and influence student behavior, some of which have been somewhat successful (16).

Health education as an effective approach to pay special attention to the issue of prevention at all levels, has long been effective in developed countries and is one of the key areas to control more and more human diseases and illnesses. (17) The value of health education programs also depends on the effectiveness of these programs, and the effectiveness of health education programs depends on the correct amount of theories and models used in health education (18).

The purpose of the models is to help identify and understand the factors affecting behavior and determine how these factors work. It also offers suggestions on how to influence these elements in different situations. One of the effective models in health education is the health belief model. (HBM) (19). The health belief model is especially useful for planning programs to prevent disease and injury (20).

The conceptual framework of the health belief model proposed by Hutchham in the early 1950s for five decades has been one of the most explanatory and predictive models that has been widely used as a health education planning tool to promote adherence to preventive behaviors (22-21).

The health belief model was proposed by Rosen Stock in 1966 (23). According to this model, the likelihood that individuals participating in a recommended health practice is primarily based on individual perception. Thus, by changing individual perceptions, the likelihood that individuals will follow the recommended health behaviors increases (24). On the other hand, the value of health education programs depends on the effectiveness of these programs and the effectiveness of health education programs depends largely on the correct use of theory and models used in health education. In other words, the more appropriate theoretical support along with basic health needs, the more effective health education programs will be. (25)

According to these details, the purpose of this study was to investigate the knowledge and attitudes of male students towards smoking based on the health belief model.

METHODS

The present study is applied in terms of purpose, descriptive in terms of nature and survey in terms of method. The statistical population includes all students who were studying in high school in Fasa city and were studying in different areas of the city. The formula $(n = Z^2 \cdot P(1-P) / d^2)$ was used for determining the sample size in which n stands for the sample size, Z for 95% confidence interval, P for ratio in previous studies (18%) and for acceptable error rate (0.05). The sample size was estimated as 226 people, which was increased to 250 people in order to increase the accuracy of the study. Five boys' high schools were randomly selected by cluster sampling. In each high school, 50 students were randomly selected. The data collection tool was a multi-part questionnaire that included demographic information and health belief model constructs including perceived sensitivity (4 questions), perceived severity (5 questions), perceived benefits (5 questions), perceived barriers (8 questions), guidelines (10 questions) and smoking prevention behaviors (8 questions). Health belief model constructs were measured with a 5-point Likert scale. Thus, the average score of perceived sensitivity constructs, perceived severity, perceived benefits, perceived barriers, and guidance for action were scored across the spectrum of strongly agree 5 points, agree 4 points, have no opinion 3 points, disagree 2 points, and strongly disagree 1 point. It should be noted that five of the eight questions in the area of perceived barriers had the opposite score. The questionnaire was self-made and its validity and reliability were confirmed by a panel of health education experts. To analyze the data according to the type of data, descriptive statistics were used to present information in absolute and relative frequency distribution tables. All statistical analyzes were performed using SPSS 16.0.

RESULTS

In total, 250 high school male students from high schools in Fasa were included in the study, ranging in age from 15 to 19 years old, with a mean age of 16 ± 0.65 . The education of their parents ranged from the first grade of elementary school to the diploma was registered as 1 to 12 and the numbers of 16, 18 and 20 were assigned to the bachelor, master and doctoral degrees, respectively. The average level of education of students' fathers and mothers were 11.07 ± 3 (range 2 to 20) and 12.04 ± 3 (range 2 to 18), respectively. The frequency of students' parents' occupations is available in (Table 1) and (Table 2). As it can be seen, the majority of mothers were housewives and the majority of student fathers were self-employed.

Table 1: Frequency of occupations of mothers of high school male students in Fasa city

Occupation	Frequency	Frequency percentage
Officeholder	20	8
Housewife	196	78.4
Teacher	21	8.4
Worker	4	1.6
Others	9	3.6

Table 2: Frequency of occupations of high school male students' fathers in Fasa city

Occupation	Frequency	Frequency percentage
Officeholder	66	26
Worker	36	14
Teacher	28	11
self-employed	102	40
Unemployed	6	2
Others	12	4

In (Table 3), the numbers related to each of the indexes of the health belief model constructs that were asked of the students in the questionnaire are given. The minimum and maximum scores of each section along with their mean and standard deviation are available in (Table 3).

Table 3: Mean and standard deviation of scores related to the indexes of the health belief model constructs among male high school students in Fasa city

Indexes	Mean	SD	Minimum	Maximum
Awareness	5	1.00	0.001	8.00
Behavioral	3	1.03	0.001	5
Perceived sensitivity	3	1.000	0.001	5
Perceived intensity	9	1.000	4	12
Perceived benefits	10	1.000	5	12
Perceived barriers	5	1.000	3	9
Self-efficacy	7	1.000	3	9

DISCUSSION AND CONCLUSION

As it was observed in this study, different indicators of health belief model in terms of knowledge and attitude of Fasa city high school students were examined. The results indicate that students' knowledge compared to the standard state is moderate and their attitude level towards self-efficacy, perceived benefits, and perceived intensity was moderate to high.

Considering the prevalence of smoking on the one hand and the finding that most adolescents start smoking at a young age, designing and implementing prevention programs with a first level approach to prevention for younger ages can be more effective and adolescents should participate in education programs on tobacco prevention, including raising awareness, improving attitudes, and increasing the skills needed to avoid smoking in elementary and middle school (26).

Different interventions confirm the effect of educational planning intervention on increasing the level of awareness and knowledge of individuals in various health issues and behaviors based on the health education model constructs. (27) The study of Sajjadi et al., on the effect of training on the risks of smoking showed a positive effect on the

awareness of soldiers in Fars province (28). In a study conducted by Rakhshani et al. (29) on the effect of education using health belief model in smoking prevention in second grade high school students in Zahedan, students were divided into control and case groups and their data were recorded before and after the intervention. In the students' attitude section, the findings showed that there was no significant difference between the two groups before the intervention, and at this stage, the majority of people had a moderate and good attitude, which was similar to our study. In a study by Namkin (30), most of the students had a moderate and good attitude towards the harms of smoking. However, in a study by Rakhshani, the score of attitude increased after intervention in the case group, which was also significant. In this study, there was no significant difference between the case and control groups in the health belief model constructs before the intervention, but after the educational intervention, the mean score of all components of the health belief model showed a significant difference. For example, the mean score of students' perceived sensitivity, which was moderate before our intervention and similar to our study, increased to 10.9 after the study, which was a significant increase; In addition, this increase in perceived sensitivity has been observed in several studies. (31)

In this study, students' mean score of perceived intensity was high, which was also observed in the study of Rakhshani et al. High perceived intensity can have a positive effect on reducing smoking performance among the samples, as the low prevalence of smoking among the samples (2.1%) in the Rakhshani study (29) also confirms this finding. In this study, after the intervention, the mean score of students in the perceived intensity section also increased significantly. This confirms the increasing importance of education and its impact on increasing students' understanding of the severity of smoking-related harms.

The perceived barriers in this study were moderate. Various studies have reported contradictory results of this index among students. Even the effect of education in increasing this index has not been the same in different studies. For example, in the study in Zahedan city, the average score of students in this model construct (perceived barrier) after the educational intervention increased significantly and reached 9.12, which indicated the effect of the educational program, while the same construct (the mean scores of perceived barriers to the harms of smoking) in the study by Sharifi Rad et al. did not show a significant difference in the post-training phase, which was due to the exposure of research samples to media education and advertising (32).

A study in the United States, the perceived behavioral barriers showed getting far away from smoking environments among non-smokers and increased presence in smoking environments among smokers (33). Thus, perceived barriers are a potential deterrent to smoking prevention action, which causes the person to reject the offer of smoking and make an analysis of the usefulness of the action against costs, risks, complications and time and adopt hygienic behavior accordingly.

Increasing perceived benefits can play an important role in preventing harmful health behaviors. Simsekoglu showed

that increasing the perceived benefits of people can be a very important predictor of their seat belt use while driving (34). In a study by Rakhshani, the score of perceived benefits after the intervention showed a significant increase compared to the control group (29). In this study, students' scores in this health belief model construct were high, which promises a high understanding of students' perceived benefits. By the help of perceived benefits, the impact of education in this field to improve the performance of knowledge of students about smoking could be promising.

The results of the study by Lajunen et al. showed that the action guide has a strong prediction power for the use of helmets among adolescents; So that the emphasis of parents and educational materials published in this field has caused a significant increase in the use of helmets (35). In our study, we also found parents at the forefront of actions for students in explaining harms of smoking and in the next stage, the national media played an important role, which made the national media pay more attention to the education and warnings about the dangers of smoking to adolescents. The presence of smoking parents can also serve as a negative action guide and as a model to encourage adolescents to use cigarettes and drugs. The presence of 16.1% of smoking parents among the subjects in the study of the Iranian population is very worrying (29).

Bandura et al. defined self-efficacy as an individual's confidence in his or her ability to perform an action successfully (36) and it has been emphasized as an important construct other than the health belief model in other theories of health education, which indicates the great importance of this construct in the successful implementation of health behaviors. The study by Aydin Avci's in Turkey showed that self-efficacy and health motivation are two important components of the health belief model, which is a stronger predictor of breast self-examination health behavior in women than other components of the model (37). The results of Morvati Sharifabad study showed that perceived self-efficacy has a significant effect on self-care behavior in diabetic patients and people who had higher self-efficacy had better control over different aspects of the disease (38-40). In this study, the level of self-efficacy of students was moderate to high. Given the importance of this construct, it can be hoped that this high self-efficacy can be effective in improving the control of adolescents' behaviors in their disinclination to smoke.

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CONFLICT OF INTEREST

None

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