RESEARCH ARTICLE

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Investigating the Relationship Between Male Students' Health Belief Model about Smoking and Demographic Variables

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ABSTRACT

Objective: Regarding the importance of smoking prevention, especially in high school boys, who include the majority of adolescents in the country, the purpose of this study was to investigate the relationship between male students' health beliefs about smoking and demographic variables.

Methods: In this observational cross-sectional study, 250 high school male students in Fasa were randomly selected by cluster sampling. In order to collect information from the researcher-made questionnaire including demographic information and health belief model constructs were used. Descriptive statistics and inferential statistics were used to analyze the data using SPSS 16.0 software.

Results: Behavioral indices, perceived barriers and self-efficacy were inversely related to age at a significance level of less than 0.01. The increased education level of mothers and fathers was directly related to the level of awareness of students and the increase in education of fathers was inversely related to their awareness. Except perceived barriers and self-efficacy, other indicators have shown significantly different results in different occupations of mothers. Perceived severity and perceived benefits differed significantly in fathers' occupations.

Conclusion: According to the results, with increasing age and subsequent increase in their awareness, the likelihood of tendency to smoke will decrease. Awareness should be provided in various ways, the most important of which is education by parents.

INTRODUCTION

Smoking, especially in adolescents, is now a global and pervasive problem and the most common preventable cause of death in the world, accounting for about one-eighth of all deaths in the world. If global smoking continues to rise over the next 20 years, ten million deaths from smoking-related diseases will occur each year, accounting for more than 70 percent of deaths in developing countries [1-4]. According to the existing facts, in the absence of comprehensive policies and coherent laws regarding smoking control, including increasing public awareness, expanding smoking cessation counseling centers, reducing access to cigarettes and other similar cases we will face a significant increase in the prevalence of smoking and its socio-

economic consequences in the coming years. Undoubtedly, any effort to maintain the health of students has a valuable role in promoting community health.

Smoking patterns vary according to income, population, age groups and tobacco control policies in different countries of the world. Currently, 1 billion people in the world's 25-year-old population are smokers, 80% of whom live in developing countries.

Obviously, community-based education on the addictive quality of cigarettes plays a key role in this matter. Thus, approaches and patterns of health education facilitate the achievement of this goal [5]. One of the most practical models of health education in the field of preventive behaviors is the model of health belief [6-10]. According to the health belief model, the adoption of preventive behavior depends on people believing in the health problem, being sensitive to its impact on health, and considering the problem as a serious problem in their health and understand its various effects on the dimensions of their physical, social, mental and economic health. Also, by receiving guidance from their environment, be convinced that preventive activities, while very useful and enforceable, are also cost-effective [11].

This model considers the behavior as a function of knowledge and attitude of the individual and according to its components, it has been developed on the basis that it causes people to perceive a health threat and leads them towards healthy behaviors.

For example, this model can increase the perceived sensitivity and severity of people regarding the self-medication and lead the person to healthy behavior or not to self-medicate, according to the perceived benefits and barriers and action guidance.

Education based on this model, by increasing mothers 'perceived sensitivity to self-medication, raises their attitudes about the extent to which they find themselves exposed to self-medication and through education, the perceived severity of mothers' attitudes regarding the complications of self-medication during pregnancy has been increased. The sum of these two factors, ie perceived sensitivity and perceived severity along with perceived benefits and barriers, ie analysis of benefits from self-medication and analysis of potential barriers in self-medication along with action guides or stimuli that affect the person from inside and outside, such as friends and acquaintances, books, television, fear of self-medication complications, etc., lead the mother to perform health behavior or quit unhealthy behavior, which was self-medication [12]. Another example is the study by Dr. Sharifi Rad et al. which examined the status of foot care based on the Health Belief Model (HBM) in type 2 diabetic patients.

According to this model, they concluded that the level of knowledge and attitude was moderate and the performance of diabetic patients in the field of foot care was below average. Therefore, they need to plan to improve the level of knowledge, attitude and practice of patients with type 2 diabetes about foot care, and health education in this area was the best solution [13].

The effectiveness of this model has been proven so far in cases such as breast self-examination, choice of delivery method, prevention of osteoporosis and prevention of smoking in students [14-17]. Studies have also been conducted on people's beliefs and attitudes about smoking. For example, Kodri et al. [18]. investigated the effect of behavioral characteristics of adolescents and the society around them on the prevalence of smoking among them. In this study, the information of 385 adolescents aged 15 to 22 years old about the starting smoking, their attitudes and beliefs about smoking, smoking status of parents and siblings had little effect on the smoking status of these adolescents.

Alikhani in a study entitled assessing the level of awareness of high school students in the north and south of Tehran about the harms of smoking found that 28.5% of students were aware of the harms of smoking, 37% were somewhat aware and 34.5% were unaware of the dangers of smoking [19].

Li et al. showed that high perceived susceptibility to the disease was significantly associated with a reduction and prevention of secondhand smoke in non-smokers and smokers, but it was the opposite in smokers. Guidelines for action and self-efficacy were not significantly associated with exposure to secondhand smoke [20].

Sharifi Rad et al. in a study entitled "The effect of health education based on the health belief model, on smoking prevention behaviors among first year high school students" showed the positive effect of this model on smoking prevention behaviors among first year high school students [21].

In a study conducted in 2004 on 4023 pre-university students in Tehran, it was found that only 28% of boys and 30.8% of girls were aware about all the complications including cancer, reduced lifespan, cardiovascular diseases, premature aging, wrinkled skin, stomach ulcers, and endangering the health of those around them. Finally, their study showed that the awareness of adolescents and young people about the harmful consequences of smoking causes them to stay away from this substance or reduce its consumption [22]. Considering the importance of smoking prevention, especially in high school boys, who include the majority of adolescents in the country, the purpose of this study was to investigate the relationship between male students' health beliefs about smoking and demographic variables.

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METHODOLOGY

The present study is applied in terms of purpose, descriptive in terms of nature and survey in terms of method. The statistical population included all high school students in different areas of Fasa city. The sample size was estimated as 226 people using the formula n = Z2 .P (1-P) / d2 in which n indicates the sample size, Z 95% confidence interval, P ratio in previous studies (18%) and d acceptable error rate (0.05) and it 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), action 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, perceived severity, perceived benefits, perceived barriers, and action guidance constructs were scored across the range of strongly agree 5 points, agree 4 points, have no comment 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 and inferential statistics including Pearson correlation coefficient and analysis of variance were used to analyze the data. All statistical analyzes were performed using SPSS 16.0.

RESULTS

According to (Table 1) behavioral indicators, perceived barriers and self-efficacy are inversely related to age, so that with increasing age, the value of each of these indicators reduces. For example, the self-efficacy of older students was lower than that of younger students. But students' awareness increased with age and their perceived sensitivity also increased. However, all these relationships were statistically significant.

According to (Table 2) and (Table 3), as it is clear, the increase in mother's education was directly related to the level of students' awareness and this increase in the father's education was inversely related to their knowledge. This relationship had the highest coefficient with the awareness index in the field of maternal education, while a significant correlation was seen in all indicators. The highest coefficient was related to sensitivity. The higher the level of education of the father, the higher the perceived sensitivity of the students was. Awareness, perceived intensity and perceived benefits of students were inversely related to increased father's education level.

The scores related to the knowledge and attitude of these students were analyzed separately based on the mother's occupation and are presented separately in (Table 4). As it is clear, except for perceived barriers and self-efficacy, other indicators have shown significantly different results in different occupations of mothers.

The analysis was performed based on the father's occupation and the information obtained from this analysis is also given in (Table 5). According to this table, the self-efficacy and behavioral traits, followed by perceived barriers and perceived sensitivities, were similar in almost all occupations, while other indicators in fathers' occupations were significantly different.

In the final part, students were asked about learning the risks of smoking from various sources, most of whom learned these points first from their parents and then from television (Table 6).

DISCUSSION

In our study, with increasing age, the level of awareness, perceived sensitivity, perceived intensity and perceived benefits of students increased significantly. This is a promising point that if students do not tend to smoke at a young age in high school, as they age and consequently their awareness increase, they will be less likely to smoke. But the concern was their self-efficacy and perceived barriers, which decreased with age, and this decrease was significant.

Also, the relationship between mother and father education with each of these indicators was examined that the higher the mother education, the higher the students' awareness.

The mother's education, as the person who has the most presence with her child until adolescence, was effective in the amount of the health belief model constructs. As the mother's education increased, students became more aware of the risks of smoking. As a result, the need for mothers to educate their children in a well-written way, as well as emphasizing their role in non-tendency of their children for smoking is fully felt.

More than half of current smoking students (63.6%) received help or advice to quit from a friend. Sriramardi et al. (2007) reported that the majority of adolescents were advised by a friend to quit smoking [23]. Therefore, considering that in both genders this help and advice has been from friends, it seems that empowering adolescents in education by peer groups is a helpful factor in controlling smoking by adolescents.

CONCLUSION

Many teens are not aware of the harmful effects of smoking. Therefore, it is necessary to inform about the harms of smoking as part of the content of the prevention program. This awareness should be done in different ways, the most important of which is parent education; Because they have the most important role in transmitting the concepts and harms of smoking to children. In the next stage, radio and television and their programs can prevent students, especially during adolescence, from the tendency to smoke.

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Table 1. The relationship between indicators of health belief model constructs and age using Spearman correlation coefficient in high school male students in Fasa city

Indicators	R correlation coefficient	P- Value
Awareness	0.069	> 0.001
Behavioral	-0.05	> 0.001
Perceived sensitivity	0.001	> 0.001
Perceived severity	0.001	0.043
Perceived benefits	0.001	0.010
Perceived barriers	-0.31	>0.001
Self-efficacy	-0.33	> 0.001

Table 2. Relationship between different dimensions of health belief model construct and maternal education using Spearman correlation coefficient in high school male students in Fasa city

Indicators	R correlation coefficient	P- Value
Awareness	1.000	0.023
Behavioral	0.001	> 0.001
Perceived sensitivity	0.046	> 0.001
Perceived severity	0.054	> 0.001
Perceived benefits	0.072	> 0.001
Perceived barriers	0.003	> 0.001
Self-efficacy	0.001	> 0.001

Table 3. Relationship between different dimensions of health belief model construct and father's education using Spearman correlation coefficient in high school male students in Fasa city

Indicators	R correlation coefficient	P- Value
Awareness	-0.007	> 0.001
Behavioral	0.028	> 0.001
Perceived sensitivity	0069	> 0.001
Perceived severity	-0.043	> 0.001
Perceived benefits	-0.046	> 0.001
Perceived barriers	> 0.001	0.018
Self-efficacy	0.002	> 0.001

Table 4. Comparison of the mean scores of knowledge and attitude of high school male students in Fasa city about smoking based on the health belief model according to the mother's profession

Indicators	Office holder	Houswife	Teacher	Worker	Others	P-Value
Awareness	5	5	6	6	5	> 0.001
Behavioral	4	3	3	2	3	> 0.001
Perceived sensitivity	3	3	3	2	2	> 0.001
Perceived severity	9	9	9	9	8	> 0.001

Perceived benefits	9	10	10	9	8	> 0.001
Perceived barriers	5	5	5	3	6	0.068
Self-efficacy	7	7	7	8	6	0.051

Table 5. Comparison of the mean scores of knowledge and attitude of high school boys in Fasa city about smoking based on the health belief model according to the father's occupation

Indicators	Office holder	Worker	Teacher	Self-employed	Unemployed	Others	P-Value
Awareness	5	6.08	6	6	6	6	> 0.001
Behavioral	3	3	3	3	3	3	1
Perceived sensitivity	3	3	3	3	4	3	0.33
Perceived severity	9	9	9.04	9.04	10	8	> 0.001
Perceived benefits	10	10	10.04	10.04	10	9	> 0.001
Perceived barriers	5	5	5	5	4	5	0.25
Self-efficacy	7	7	7	7	7	7	1

Table 6. Frequency of each of the ways of learning the risks of smoking by high school male students in Fasa city

Indicators	Frequency	Frequency percentage
Teacher	75	30
Friends	68	27
Parents	122	48
Book	67	26
TV	109	43
Dentist	29	11
Health Instructor	27	10
Others	88	35