

The Relationship between Health Beliefs and Family Functioning with Drug Attitudes among High School Students in Lali city, Khuzestan Province, Iran

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Abstract

Background

Drug abuse and its unfavorable consequences are considered the most important concerns and social issues of the present era, and drug abuse and its destructive consequences are challenging issues concerning the students' health. The present study aimed to investigate the relationship between health beliefs and family functioning with drug attitudes among high school students of Lali city, Iran.

Materials and Methods: This descriptive cross-sectional study was performed by path analysis. The study's population included all the girls and boys of high school students of Lali city, Khuzestan Province, Iran, in the academic year 2017-2018. The sample included 133 male and 142 female students selected by multistage stratified sampling. The research instrument included the Health Beliefs Inventory (Thought Fusion Inventory, TFI), Family Assessment Device (FAD), and the Drug Attitude Scale (DAS). Data analysis was performed using SPSS software (version 23.0), and AMOS software (version 23.0).

Results: The mean age and age range of participants were 17.06 ± 2.40 and 15 to 20 years, respectively. The results showed a significant negative relationship between health beliefs and attitudes towards drugs in females ($\beta = -0.46, P \leq 0.01$), and male ($\beta = -0.49, P \leq 0.01$) students. There was no significant relationship between family functioning and drug attitudes in students ($P > 0.05$).

Conclusion

In this study, it was found that health beliefs reduced attitudes toward drugs in students. Health beliefs change students', and adolescents' attitudes toward addiction. For instance, the adolescents, who exhibit more health behaviors, hold a higher perception of the addiction threat and more negative attitudes toward addictive drugs.

Key Words: Attitude, Drug, Health, Family, Students.

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1- INTRODUCTION

Adolescence is considered as one of the most critical stages in the development of an individual's personality. During this period, adolescents become highly anxious and concerned. In this regard, family environment and adolescent-parents' relationships play a critical role in forming adolescents' personality (1). With the reduced age range of drug abusers, many youth and adolescents are at risk, and this issue has caused a large number of concerns in various societies. Moreover, drug abuse and its accompanying psychological disorders not only result in high socio-economic costs for the community, but they have also imposed exorbitant costs on health systems and have increased mortality rates (2). Drug abuse among adolescents has become a public health concern. Some studies have documented that the mean age of first-time drug abuse has significantly decreased (3).

The tendency towards taking drugs among adolescents is affected by various personal, family, and social factors. Adolescents are prone to drug abuse when they face academic failure, family problems, parental divorce, and lack of parental attention, lack of love, economic, social, racial discrimination, complicated living conditions, and sometimes physical diseases (4). Health belief is a theoretical framework adopted in health education and health promotion, and it is underpinned by understanding the individual's beliefs about and perceptions of the severity and sensitivity of the diseases (5). Such beliefs are significant variables affecting health-related behaviors. Each individual has a certain level of understanding about his/her vulnerability to developing a specific disease. This issue is directly associated with an individual's perceptions of and attitudes toward the disease's risk. Accordingly, some individuals have low sensitivity and perception of vulnerability,

so they usually underestimate the risk of developing a disease and have a low level of perceived sensitivity (6). Perceived severity represents an individuals' abstract belief about the extent of harm induced by a disease or the harmful consequences of a particular behavior. Regarding health beliefs, perceived sensitivity and severity mutually affect each other (7). For instance, an individual may have a low level of perceived sensitivity to addiction. However, the same individual is less likely to engage in addictive behaviors or hold a positive attitude toward addiction or drug abuse when he/she gains a higher understanding of addiction by becoming aware of the harms caused by addiction.

However, if an individual has low perceived sensitivity and low perceived severity of the addiction, he/she is more likely to hold a more positive attitude toward addiction. Ghadban et al. (8) showed that women were generally less dependent on nicotine and were more aware of its dangers. They also reported a positive relationship between the tendency to quit smoking and perceived severity, perceived sensitivity, and perceived benefits. Eshah and Froelicher (9) showed a relationship between positive attitudes and misconceptions and hookah use. Families play a pivotal role in forming and developing personality traits and behavioral patterns of individuals (10).

Appropriate child-parent interactions and efficient family functioning are associated with family members' positive and efficient mental health traits. Moreover, these features' lack or insufficiency can indicate unhealthy child-parent interactions and ineffective family functioning (11). The health of a society is dependent upon the system's health and dynamism of the family. Family disintegration and disputes affect the youth's tendency toward delinquency and addiction. As Simpson et al. (12) noted, low-income family functioning can be

associated with anxiety and depression. Daches et al. (13) reported higher family dysfunction rates in high-risk children and their mothers compared to low-risk children and their mothers. In their study, family dysfunction predicted the extent of depressive symptoms in children, and family dysfunction mediated the mothers' and children's depression levels. In another study, Shi et al. (14) reported a relationship between family functioning and teenagers' addiction. Besides, Toorani and Rashtiani (15) found a significant relationship between family functioning and stubbornness. This study's findings highlighted the significance of positive interactions in families and the necessity to avoid negative interactions.

As major components of human identity, attitudes are central to social psychology as they affect behavior, information processing, and social encounters, while they form a part of an individual's self-image (16). Attitude toward drugs is a cognitive construct driving individuals to abuse drugs or never take any drugs. Psychological explanations highlight the tendency in some personality types toward abusing drugs (17, 18). Moreover, individuals prone to anxiety are more likely to abuse drugs to calm down, gain self-confidence, and relieve stress. Attitudes toward drugs are correlated with cognitive, emotional, and behavioral factors (19). One of the first and most remarkable measures in drug abuse prevention programs is exploring factors affecting positive attitudes toward drug abuse and its consequences. According to Chen et al. (20), addiction is correlated with poor social adjustment and low family support. As Pazani et al. (21) have shown, there is a significant positive correlation between addiction readiness and general attitudes, beliefs, emotions, and avoidant, spontaneous, and dependent decision-making styles.

In contrast, a significant negative correlation is observed between rational and intuitive decision-making styles and addiction readiness. Jalilian et al. (19) showed that investigating cognitive factors and administering intervention on factors such as attitudes, mental norms, and self-control were useful for preventing drug abuse. Regarding the importance of adolescents and high school students' mental health, the present study aimed to investigate the relationship between health beliefs and family functioning with high school students' drug attitudes.

2- MATERIALS AND METHODS

2-1. Study design and population

This descriptive cross-sectional study was performed by path analysis. The study's population included all the high school students of Lali city, Khuzestan Province, Iran, in the academic year 2017-2018. The sample included 133 male students and 142 female students selected by multistage stratified sampling and using the Cochran's formula. For this purpose, several high schools were randomly selected from the city of Lali. Then, an all-girls high school and an all-boys high school were randomly selected as the samples. The questionnaires were distributed among the students of mathematics, experimental sciences, and humanities at different levels.

The inclusion criteria were: Consent to participate in research, age range between 15-19 years, and having no mental disorders. The exclusion criteria included failure to answer all the questions completely. After determining the samples and informing the education authorities of Lali city, the researcher referred to the school and provided the participants with explanations about questionnaires and the reasons for selecting the samples. The participants realistically answered the questionnaires without any anxiety and concern. Finally, 300 questionnaires were

filled and delivered to the researchers. By removing the defective, univariate, and multivariate outliers, the remaining 275 questionnaires (filled by 133 boys and 142 girls) were analyzed. The power of the test and fitting indexes indicated the adequacy of the sample. In order to observe the ethical principles, the participants were informed of the research goals and their procedures. Also, the researchers received written consent for participation in the research from the participants.

2-2. Measuring tools

2-2-1. Health Beliefs Inventory (Thought Fusion Inventory, TFI):

Thought fusion inventory (TFI) was designed by Wells et al. (22) in a 14-item self-assessment test measures common beliefs about the meaning and power of thoughts by evaluating the following three thought fusion categories, introduced in the metacognitive model: (1) Thought Action Fusion, (2) Thought Object Fusion, and (3) Thought Event Fusion. The items are scored in groups of ten, based on a 100-point spectrum ranging from "I don't believe at all" (0) to "I completely believe" (100). The items' score ranges from 0 to 100, and that of the questionnaire ranges from 0 to 1400. A higher score indicates a more significant thought fusion (22). Shafrana and Rachman (23), reported that this questionnaire's reliability equaled 0.87 based on Cronbach's alpha coefficient. Iran Khoramdel et al. (24), reported a Cronbach's alpha of 0.87 for the whole questionnaire. In the present study, Cronbach's alpha coefficient was 0.77 for the scale.

2-2-2. Family Assessment Device (FAD):

This inventory is developed by Epstein et al. (25) to measure family functioning based on McMaster's model, and it includes 53 questions. The device specifies the family's structural, occupational, and interactive features, and it contains six

subscales, i.e., problem-solving, communication, role, emotional responsiveness, emotional fusion, and behavior control, along with one score for general functioning. The participants select one of the following options for each item: strongly agree = 1, agree = 2, disagree = 3, and strongly disagree = 4. Items 4, 6, 7, 9, 11-13, 17-19, 24-27, 31, 33, 35, 39, 41, 42, and 44 are scored in reverse. Each family member older than 12 years can complete this questionnaire. The higher scores indicate less healthy functioning (25). Yousefi (26) reported a Cronbach's alpha of 0.83 for the whole questionnaire in a study. In the present study, the Cronbach's alpha coefficient was 0.79 for the questionnaire.

2-2-3. The Drug Attitude Scale (DAS):

This scale was designed by Rezaee et al. (27) to evaluate the students' attitudes toward drugs. This scale consists of 40 items covering three subscales (the effects of drug abuse with 21 questions, drug abuse tendency covering the items 22-31, and drug abuse risks covering the items 32-40). This questionnaire is scored based on a five-point Likert scale, including the choices quite agree (5 scores), agree (4 scores), no idea (3 scores), disagree (2 scores), and entirely disagree (1 score). The total score of the questionnaire's ranges from 40 to 200. The higher is the total score, the more positive is the person's attitude to a drug, and lower scores indicate the person's negative attitude and hatred of drugs (27). In the present study, the Cronbach's alpha coefficient was 0.95 for the scale.

2-3. Data Analyses

Data analysis was done by descriptive statistics such as mean, standard deviation (SD), the minimum and maximum scores, and the Pearson correlation coefficient. The skewness and kurtosis were utilized to specify the data normality. Cronbach's alpha coefficient evaluated the tools'

reliability and validity, and the relationships between the variables were studied by path analysis. Meanwhile, the significance of the mediating relationships was evaluated by the Bootstrap method. Data analysis was done using SPSS software (version 23.0), and AMOS software (version 23.0). The significance level of research was considered to be $\alpha=0.05$.

3- RESULTS

The mean age and age range of participants were 17.06 ± 2.40 and 15 to 20 years, respectively. Concerning gender, 51.60 percent of the participating in the study were girls, and 49.40 percent were boy students. The demographic characteristics of the participants are shown in **Table.1**.

Table-1: Demographic characteristics of the participants.

Demographic variables		Number	%
Age (years)	15-16	38	13.80
	17-18	220	80.00
	19-20	17	6.20
Gender	Female	142	51.60
	Male	133	48.40
Field of Study	Mathematics	14	5.10

The mean and standard deviation (SD) for health beliefs, family functioning, and attitudes toward drugs in male students were 539.44 ± 273.05 , 132.95 ± 17.80 ,

149.87 ± 45.78 , respectively. These parameters were 452.24 ± 219.48 , 131.99 ± 20.31 , and 145.86 ± 45.92 in female students, respectively (**Table.2**).

Table-2: Descriptive indices of the variables in boy and girl students.

Variables	Boy students				Girl students			
	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
Health beliefs	539.44	273.05	70	1090	452.24	219.48	88	1090
Family functioning	132.95	17.80	71	172	131.99	20.31	71	170
Attitudes toward drug	149.87	45.78	35	200	145.86	45.92	50	200

SD: Standard deviation.

Evaluating statistical assumptions, including values for skewness and kurtosis (all variables are in the range of -2 to +2), indicate the normal distribution of all the research variables (**Table.3**). **Table.4**

presents the correlation between the variables in the two groups. According to **Table.4**, the correlation between the variables was significant in the two groups ($P<0.05$).

Table-3: Results of Kolmogorov-Smirnov test for normality of data values.

Variables	Boy students		Girl students	
	Kurtosis	Skewness	Kurtosis	Skewness
Health beliefs	-0.68	0.31	-0.44	0.52
Family functioning	1.62	-1.01	1.59	-1.53
Attitudes toward drug	-0.09	-1.03	-0.52	-0.82

Table-4: The correlation coefficient between health beliefs, family functioning, and attitudes toward drug using the Pearson correlation coefficient in the research sample.

Variables	Boy students			Girl students		
	1	2	3	1	2	3
1- Health beliefs	1			1		
2- Family functioning	r=0.16 p=0.04	1		r=0.26 p=0.002	1	
3- Attitudes toward drug	r= -0.49 p=0.0001	r=-0.19 p=0.02	1	r=-0.53 p=0.0001	r=-0.27 p=0.001	1

According to **Table.5**, there was a significant negative relationship between health beliefs and attitudes towards drugs in male ($\beta = -0.46$, $P \leq 0.01$), and female

($\beta = -0.49$, $P \leq 0.01$) students. There was no significant relationship between family functioning and drug attitudes in male and female students ($P > 0.05$).

Table-5: Path analysis results of direct effects between research variables in the final model

Path	Boy students		Girl students	
	β	P-value	β	P-value
Health beliefs to attitudes toward drug	-0.49	0.000	-0.46	0.000
Family functioning to attitudes toward drug	-0.03	0.61	-0.01	0.84

4- DISCUSSION

The present study aimed to investigate the relationship between health beliefs and family functioning with drug attitudes among male and female high school students. The results showed that there was a significant negative relationship between health beliefs and drug attitudes in students. This finding is consistent with the research results of Eshah and Froelicher (9), Hatami et al. (28), Li et al. (29), and Khwankong et al. (30). In order to explain this finding, health beliefs and their constructs need to be considered. Health beliefs are one of the main variables affecting health-related behaviors. Exhibiting health behaviors depends on two types of assessments: Assessing the risk of a health problem and assessing the benefits and barriers to performing health behaviors. Health beliefs include the following six dimensions: perceived sensitivity, perceived severity, perceived benefits,

perceived barriers, guidelines for action, and self-efficacy. From a theoretical standpoint, among these components, perceived sensitivity and perceived severity are the variables with the highest relation with negative attitudes toward addiction. Health beliefs are a highly effective psychological variable that can directly affect destructive attitudes and behaviors. This variable exerts its effects through its constituent, including perceived sensitivity and severity (perceived threat), perceived benefits and barriers, guidance for action, and self-efficacy (5). If a person understands the potential threat of a positive attitude towards addictive substances and addiction and feels the potential benefits of that attitude, that person will have strong health beliefs about addiction. Indeed, having a negative attitude towards addiction reduces the tendency towards drug abuse (9). Therefore, it seems that people with strong health beliefs have a negative attitude towards addiction. In general, health

beliefs are variables that try to consider the relationship between a person's attitudes and beliefs about a health-related issue and use it to predict a person's performance and behavior in the face of health risk. Health beliefs make sense when faced with a stressful situation, such as an illness. A person with health beliefs seems to have more resilience. In this way, he/she can desirably deal with this stress, and instead of maladaptive coping strategies such as avoidance strategies, he/she will use desirable and useful strategies such as problem-oriented strategies. Perceived sensitivity refers to an individual's abstract beliefs about being affected by a disease or being harmed by a particular behavior. This variable has a strong cognitive component and is relatively dependent on the individual's knowledge. Perceived severity refers to an individual's abstract belief about the extent of harm generated by a disease or a harmful condition posed by a particular behavior. Like perceived sensitivity, this construct also has a strong cognitive component that depends on the individual's knowledge.

The study's sample included those who had sufficient information and knowledge about addictive drugs and the negative consequences of addiction. Such information might have been acquired through informative and mass media and the school's potential training in this regard. Accordingly, it can be expected that these two components of health beliefs, namely, perceived sensitivity and perceived severity, be strong enough in this group. In combination, these two components form another construct known as a perceived threat. Teenagers with a higher perception of the addiction threats will hold a more negative attitude toward addictive drugs, confirmed by the present study's findings. The present study results showed that there was no significant relationship between family functioning and the attitudes towards drugs in students.

This finding is not consistent with the research results of Simpson et al. (12), Daches et al. (13), Shi et al. (14), and Pérez et al. (31). Family functioning refers to a family's ability to perform its entrusted tasks, including meeting its members' emotional, psychological, and physiological needs. A functioning family is a family capable of meeting its members' emotional, psychological, and physiological needs. The initial expectation is that family functioning is correlated with drug attitudes in adolescents. However, the findings of the current study rejected this assumption. It might be due to several reasons. One reason is that the family and its traditional role might have been weak in the present sample. Another reason, justifying the fact that the relationship was not significant in this study, may involve the fact that family functioning is considered in general.

In contrast, some family functioning dimensions, such as communication and emotional responsiveness, are more associated with adolescents' tendency toward addiction. Given the relationship between family functioning and attitudes toward drugs, previous studies have shown that this relationship is significant (32, 33, 34). In order to explain this finding, parents' attitudes and behaviors can facilitate or hinder the child's growth and development. Receptive and understanding parents will be a source of comfort and security for their children. Family environment and conditions can also be a motivating or deterrent factor in the child's development. In a family where members work and have fun together and make critical decisions together, they will undoubtedly raise confident children. In contrast, children who grow up in homes full of suspicion, guilt, and stress will have difficulty finding their identity and establishing desirable relationships with peers (35). In today's world, adolescents are more likely to be affected by their

peers, friendship groups, mass media, and social media than their families or, more accurately, their parents. Six functioning dimensions are defined for a family as follows: problem-solving, communication, role, emotional responsiveness, emotional fusion, and behavior control. Therefore, family and parental performance can affect children's attitudes toward drug use. Control of children by parents is a barrier to the formation of children's positive attitudes toward drugs. While not controlling children facilitates the formation of children's positive attitudes toward drugs.

4-1. Study Limitations

Since the present study was performed on high school students in Lali city, caution should be observed in generalizing the results to other communities in different time and place situations due to different cultural conditions. In the present study, self-report questionnaires were used to collect data, which has its limitations. In addition to the variables used in this study, other variables can be used to predict attitudes toward addiction that were not considered in this study due to implementation limitations. Since the questionnaires were provided to the students for answering, the participants' communication with each other may have caused confusion in the answers.

5- CONCLUSION

In this study, it was found that health beliefs reduced attitudes toward drugs in students. Health beliefs change students' and adolescents' attitudes toward addiction. As such, adolescents, exhibiting more health-related behaviors, hold a higher perception of the addiction threat and more negative attitudes toward addictive drugs. Also, in the present study, no significant effect was observed between family functioning and drug use attitudes. In order to confirm the effect of the studied

variables on drug attitude, it is suggested to investigate the results of this research in an experimental manner. In order to provide the possibility of generalizing the results, it is necessary to conduct further similar studies in other populations. School authorities can provide the students and their families with monthly or weekly educational brochures to make them aware of the issues related to drug attitude. Since the present research has only investigated the high school students of Lali city, the generalization of the results to other populations should be made with precaution due to their different cultural and geographical conditions. In addition to the studied variables, other variables can be used to predict drug attitude.

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7- CONFLICT OF INTEREST: None.

8- REFERENCES

1. Jaworska N, MacQueen G. Adolescence as a unique developmental period [published correction appears in *J Psychiatry Neurosci*. 2015;40(6):386]. *J Psychiatry Neurosci*. 2015;40(5):291-93.
2. Atzendorf J, Rauschert C, Seitz NN, Lochbühler K, Kraus L. The Use of Alcohol, Tobacco, Illegal Drugs and Medicines. *Dtsch Arztebl Int*. 2019;116(35-36):577- 84.
3. Noyani A, Chaman R, Mousavi SA, Khorsand M. Investigating the relationship between attention deficit hyperactivity disorder (ADHD) and drug abuse: a case-control study. *Int J Health Stud*. 2019;5(1):24-26.

4. Chiu ML, Cheng CF, Liang WM, Lin PT, Wu TN, Chen CY. The Temporal Relationship between Selected Mental Disorders and Substance-Related Disorders: A Nationwide Population-Based Cohort Study. *Psychiatry J*. 2018;2018:5697103.
5. Jones CL, Jensen JD, Scherr CL, Brown NR, Christy K, Weaver J. The Health Belief Model as an explanatory framework in communication research: exploring parallel, serial, and moderated mediation. *Health Commun*. 2015;30(6):566-76.
6. Khani Jeihooni A, Arameshfard S, Hatami M, Mansourian M, Kashfi S, Rastegarimehr B, et al. The Effect of Educational Program Based on Health Belief Model about HIV/AIDS among High School Students. *Int J Pediatr*. 2018; 6(3): 7285-96.
7. Kasmaei P, Amin Shokravi F, Hidarnia A, et al. Brushing behavior among young adolescents: does perceived severity matter. *BMC Public Health*. 2014;14:8. Published 2014 Jan 8. doi:10.1186/1471-2458-14-8
8. Ghadban R, Haddad L, Thacker LR 2nd, An K, Balster RL, Salyer J. Smoking Behaviors in Arab Americans: Acculturation and Health Beliefs. *J Transcult Nurs*. 2019;30(2):115-23.
9. Eshah NF, Froelicher ES. Knowledge, attitudes, beliefs and patterns of waterpipe use among Jordanian adults who exclusively smoke waterpipes. *Eur J Cardiovasc Nurs*. 2018;17(1):85-92.
10. Bambara JK, Wadley V, Owsley C, Martin RC, Porter C, Dreer LE. Family Functioning and Low Vision: A Systematic Review. *J Vis Impair Blind*. 2009;103(3):137-49.
11. Goldberg JS, Carlson MJ. Parents' Relationship Quality and Children's Behavior in Stable Married and Cohabiting Families. *J Marriage Fam*. 2014;76(4):762-77.
12. Simpson EG, Vannucci A, Ohannessian CM. Family functioning and adolescent internalizing symptoms: A latent profile analysis. *J Adolesc*. 2018;64: 136-45.
13. Daches S, Vine V, Layendecker KM, George CJ, Kovacs M. Family functioning as perceived by parents and young offspring at high and low risk for depression. *J Affect Disord*. 2018; 226: 355-60.
14. Shi X, Wang J, Zou H. Family functioning and Internet addiction among Chinese adolescents: The mediating roles of self-esteem and loneliness. *Comput Hum Behav*. 2017;76: 201-10.
15. Toorani H, Rashtiani S. Relationship between family function and students' psychological hardiness. *Educ Psychol*. 2008;4(12):88-126.
16. Hogg MA, Smith JR. Attitudes in social context: A social identity perspective. *Eur Rev Soc Psychol*. 2007;18(1):89-131.
17. Amiri H, Makvandi B, Askari P, Naderi F, Ehteshamzadeh P. The effectiveness of matrix interventions in reducing the difficulty in cognitive emotion regulation and craving in methamphetamine- dependent patients. *Int J Health Stud*. 2019;5(4):21-4.
18. Heckman CJ, Dykstra JL, Collins BN. Substance-Related Knowledge, Attitude, and Behavior among College Students: Opportunities for Health Education. *Health Educ J*. 2011;70(4):383-99.
19. Jalilian F, Ataee M, Matin BK, et al. Cognitive factors related to drug abuse among a sample of Iranian male medical college students. *Glob J Health Sci*. 2015;7(5):143-51.
20. Chen YL, Chen SH, Gau SS. ADHD and autistic traits, family function, parenting style, and social adjustment for Internet addiction among children and adolescents in Taiwan: a longitudinal study. *Res Dev Disabil*. 2015; 39: 20-31.
21. Pazani F, Borjali A, Ahadi H, Kraskian Mujembari A. A Structural Modeling Analysis of the Relationships among Psychological Factors Influencing Adolescents' Vulnerability to Substance Use with Mediating Role of Codependency. *Quart J Fam Res*. 2018; 14(4):69-90.
22. Wells A, Gwilliam P, Cartwright-Hatton S. The Thought Fusion Instrument (Unpublished Self-Report Scale). Unpublished Scale Manchester, University of Manchester, Manchester. 2001.

23. Shafran R, Rachman S. Thought-action fusion: A review. *J Behav Therapy Experiment Psychiat.* 2004; 35(2):87-107.
24. Khoramdel K, Rabiee M, Molavi H, Taher Neshatdoost H. Psychometric Properties of Thought Fusion Instrument (TFI) in Students. *Ir J Psychiatr Clinic Psychol.* 2010; 16(1):74-8.
25. Epstein NB, Baldwin LM, Bishop DS. The McMaster family assessment device. *J Marital Fam Therapy.* 1983; 9(2):171-80.
26. Yousefi, N. An Investigation of the Psychometric Properties of the McMaster Clinical Rating Scale (MCRS). *Quart Educ Measur.* 2012; 2(7):91-120.
27. Rezaee AM, Delavar A, Najafi M. The Construction and Validation of Opium Attitude Questionnaire among Guidance and High School Students. *Res Addict.* 2013; 6(24):37-54.
28. Hatami T, Noroozi A, Tahmasebi R, Rahbar A. Effect of Multimedia Education on Nutritional Behaviour for Colorectal Cancer Prevention: An Application of Health Belief Model. *Malays J Medic Sci.* 2018; 25(6):110-20. doi:10.21315/mjms2018.25.6.11
29. Li ZT, Yang SS, Zhang XX, Fisher EB, Tian BC, Sun XY. Complex relation among Health Belief Model components in TB prevention and care. *Public Health.* 2015; 129(7):907-15.
30. Khwankong S, Sriplung H, Kerdpon D. Knowledge and Health Belief Attitudes of Oral Cancer and Its Screening among At-Risk Southern Thai Muslims. *J Cancer Educ.* 2018;33(3):615-21. doi:10.1007/s13187-016-1150-y
31. Pérez JC, Coe S, Irrázaval M. Is maternal depression related to mother and adolescent reports of family functioning? *J Adolesc.* 2018; 63: 129-41.
32. Moradi S, Ghorbani R, Radbakhsh N. Attitudes toward drugs abuse and some related factors among Iranian high school students. *Koomesh.* 2018; 20(2):325-35.
33. Atar AÖ, Yalçın Ö, Uygun E, Demirci AC, Erdoğan A. The assessment of family functions, dyadic adjustment, and parental attitude in adolescents with substance use disorder. *Nöro Psikiyatri Arşivi.* 2016; 53(1):38.
34. Parsian M, Hashemian K, Abolmaali K, Mirhashemi M. Prediction of Drug Attitude in Adolescents Based on Family Training Risk Factors for Mental Health in Society: Designing a Model for Prevention of Addiction. *J Ardabil University Med Sci.* 2015; 15(2):198-206.
35. Shin Y, Pettigrew J, Miller-Day M, Hecht ML, Krieger JL. Trends of Parent-Adolescent Drug Talk Styles in Early Adolescence. *Health Commun.* 2019; 34(8):801-10.