



Original Article

## Relationship Between Assertion and Aggression with Addiction Potential: A Cross-Sectional Study in 2019

Mohammad Amiri <sup>a</sup>, Zakieh Sadeghi <sup>b</sup>, Elham Sadeghi <sup>c</sup>, Ahmad Khosravi <sup>d,\*</sup>

<sup>a</sup> Health Services Management, Department of Public Health, School of Public Health, Shahrood University of Medical Sciences, Shahrood, Iran

<sup>b</sup> Analytical Chemistry Damghan University, Damghan, Iran

<sup>c</sup> Biomedical Engineering Tehran University of Medical Sciences, Tehran, Iran

<sup>d</sup> Epidemiology Department, Center for Health-Related Social and Behavioral Sciences Research, Shahrood University of Medical Sciences, Shahrood, Iran

### ABSTRACT

#### Article history:

Received: March 20, 2020

Revised: May 27, 2020

Accepted: May 28, 2020

#### Keywords:

addictive behavior,  
aggression, medical students

**Objectives:** This study aimed to determine the relationship between assertion and aggression with addiction potential among students in Shahrood University of Medical Sciences.

**Methods:** In this cross-sectional study conducted in 2019, 500 students of Shahrood University of Medical Sciences, were selected by multistage random sampling, for a study using the Addiction Potential Scale, and Assertion and Aggression Questionnaires. Data were analyzed using ANOVA, Chi-square, *t* test, Pearson's correlation coefficient, and the linear regression model.

**Results:** The mean scores of addiction potential, aggression, and assertion were  $32.7 \pm 17.2$ ,  $41.5 \pm 12.9$  and  $139.4 \pm 22.3$ , respectively. In this study, 38.8% ( $N = 194$ ) of students had high aggression and 76.8% ( $N = 384$ ) had high assertion. In the regression model, aggression, history of drug and addictive substances abuse, history of tobacco use, and history of alcohol abuse were significantly related to addiction potential ( $p \leq 0.05$ ). There was a negative relationship between assertion and addiction potential so that with one-unit increase in the assertion score, the addiction potential score decreased by -0.11.

**Conclusion:** Given the direct relationship between aggression and addiction potential, and since more than three-quarters of the students had moderate to high aggression, it is necessary to pay more attention to this issue. Interventions may play an important role in improving the current situation.

<https://doi.org/10.24171/j.phrp.2020.11.4.12>  
pISSN 2210-9099 eISSN 2233-6052

©2020 Korea Centers for Disease Control and Prevention. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Introduction

Drug abuse and drug addiction are not specific to an occupation, educational level, and socioeconomic layers, and are not exclusive to specific individuals or groups. Drug addiction is one of the major threats to health, progress, political and economic stability, and social structure of countries [1-5]. Addiction is a biological, social, and psychological disorder, and various factors influence its emergence, persistence, and treatment [6,7]. The main

predictors of drug abuse and addiction are intra-individual characteristics, demographic characteristics and socioeconomic status [8]. Intra-individual characteristics, such as aggression and assertiveness can have a close relationship with the tendency for drug abuse [4,9].

Assertion is defined as the confidence to defend oneself and “say no” to requests one does not want to grant [9]. Assertiveness refers to a self-assured behavior that enables one to act in his or her own interest to express his or her true feelings without anxiety whilst respecting the rights of others

\*Corresponding author: Ahmad Khosravi  
Epidemiology, Center for Health-Related Social and Behavioral Sciences Research, Shahrood University of Medical Sciences, Shahrood, Iran  
Email: [khosravi2000us@yahoo.com](mailto:khosravi2000us@yahoo.com)

**ORCID:** Mohammad Amiri <https://orcid.org/0000-0003-2151-8530>, Zakieh Sadeghi <https://orcid.org/0000-0002-2608-5837>, Elham Sadeghi <https://orcid.org/0000-0002-691-4664>, Ahmad Khosravi <https://orcid.org/0000-0002-1106-3782>

©2020 Korea Centers for Disease Control and Prevention. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

[10]. Assertion is an important social skill that reduces social anxiety and helps an individual adapt to social situations and interactions. A lack of assertiveness can result in negative outcomes such as aggression and addiction [4,9,11].

Aggressive behaviors are a problem in many societies, as they can harm people and endanger public health [12,13]. Aggression is defined as a behavior that is intended to harm oneself and/or others [5]. It is a set of cathartic behaviors that may be characterized by the violation of the rights of others and the harassing effect of these behaviors, and any intentional conduct (whether verbal or nonverbal) that leads to personal, psychological or physical harm, or financial harm to oneself and/or others to achieve emotional release [12-15]. Many factors including biological and hereditary, environmental learning and cognitive processing, as well as personal stimuli can influence aggression [16]. It has been reported that aggression is a predictor of the tendency to be addicted to substances and it increases addiction potential in individuals [17-21].

Addiction potential includes beliefs and attitudes to the abuse of addictive substances with an understanding of its positive and negative consequences [22,23]. Factors that influence youth addiction potential are generally divided into 2 categories including internal and external factors. The most important external factors include family relationships (poor parent-child relationship), presence of an addict in the family, peer pressure (friends who are addicted), economic and social status (unemployment, urbanization and geographical proximity to drug production areas), community policies, loneliness and isolation [24-30]. The most important internal factors affecting addiction potential are genetic factors, depression, stress, lack of confidence and self-esteem, lack of ability to say no to others, lack of mental health, aggression, personality traits, and poor religious beliefs [24,31-33]. In some Iranian studies, the average score of readiness for potential addiction has been reported to be high in student groups [5,31,34-36]

Given the high prevalence of drug dependence and the difficulty of treatment, it is necessary to identify risk factors in different populations including students [5]. Medical students after graduation will function as providers of health care services, and any long-term harm of addiction (in addition to the students themselves) can endanger a wide range of communities. Therefore, it is very important to identify the risk factors for addiction potential among this group. The purpose of this study was to determine the relationship between aggression and assertion with addiction potential among students in Shahroud University of Medical Sciences.

## Materials and Methods

In this cross-sectional study, 500 students of Shahroud University of Medical Sciences were selected through a multi-stage random sampling method. There was a total of 1,700 students at associate, undergraduate, master's, M.D and Ph.D. levels. The first stage of sampling was conducted in 4 faculties of medicine, nursing-midwifery, paramedical and health through strata sampling, and after specifying the number of students in each faculty, a proportional to size sample was determined. In the second stage, based on the list of majors and classes, and the required sample size, some classes were randomly selected as clusters and the students in those classes participated in the study. A total of 510 questionnaires were distributed and 500 were returned and analyzed.

The Ethics Council of Shahroud University of Medical Sciences approved the proposal for the study (IR.SHMU.REC.1397.129.) prior to data collection. Ethical considerations were completely voluntary and the questionnaires were anonymous.

### 1. Measurements

In this study, 4 questionnaires including a demographic, Addiction Potential Scale, Aggression Scale, and Assertion Inventory were administered to the participants. In this study, 17 questions were asked about demographic and general characteristics of the participants, 41 specific questions about addiction potential, 40 questions about assertiveness, and 30 questions about aggression. The specifications of the questionnaires used in the study are described below.

#### 1.1. Addiction potential scale

The addiction potential scale was developed by Weed et al [37], translated into Persian by Zargar [38], and developed to evaluate the psychosocial properties of this scale in the Iranian population. The validated Persian version of the questionnaire consists of 2 factors and 36 items, plus 5 lie-detecting items [38]. Examples of some included questions, "I do not like everyone I know" or "Cannabis use is not addictive." The score for each item ranged on a 4-point continuum from 0 (strongly disagree) to 3 (strongly agree). Items 6, 12, 15, 21 were reverse-scored. This questionnaire had 5 lie-detecting items 12, 13, 15, 21 and 33. The final score ranged from 0 to 108. Higher scores indicated the greater potential of the respondent for addiction and vice versa (scores ranged from 0 to 36) indicated a low potential of respondents for addiction. A score between 36 and 54 indicated a moderate potential of respondents for addiction. A score above 54 indicated a greater potential of the respondents for addiction. Zargar et al [38] showed that the Persian version of Addiction Potential Scale clearly

distinguished the addicts from the non-addicts (criterion validity). The construct validity of the scale was evaluated with the 25-item Clinical Symptom Index using the calculation of correlation coefficient ( $r = 0.45$ ). The reliability of the Persian version of this scale was calculated as 0.90 using Cronbach's alpha method [36,38].

### 1.2. Assertion inventory

This inventory was developed by Gambrill and Richey [39] and included 40 items. Each item represented a situation in which the participant must determine the degree of his or her concern and the probability of answering the item. Examples of some included questions were, "turn off a talkative friend" and "request a meeting or a date with a person". The answer to each item ranged on a 5-point scale from 5, (very high) to 1 (low). The total score was the sum of the 40 item scores. The minimum possible score was 40 and the maximum was 200. A score between 40 and 80 indicated low assertiveness, a score between 80 and 120 indicated moderate assertiveness, and a score above 120 indicated high assertiveness of the person. The factor validity of the different items was reported to be between 0.39 and 0.70, and the reliability coefficient of the whole inventory was 0.81 [39].

### 1.3. Aggression questionnaire

The Ahvaz aggression scale developed by Zahedifar et al [40] in 2000, has 30 items and 3 subscales (anger and rage, aggression and insult, stubbornness and malice). This questionnaire was used to evaluate aggression in individuals and measures the components of anger and rage (items 1 to 14), aggression and insult (items 15 to 22), and stubbornness and malice (items 23 to 30). Examples of some included questions were "I blame myself" and "Others consider me a violent and aggressive person."

Respondents were required to select 1 of 4 options ranging from rarely (0), to always (3). Item 18, which has a negative factor loading was reversed in scoring. The scores were summed up and the total score ranged from the minimum possible score of 0, to a maximum of 90. A score between 0 and 30 indicated low aggression, a score between 30 and 45 indicated moderate aggression, and a score above 45 indicated high aggression. The Cronbach's alpha reliability for the whole scale and the 3 subscales were 87%, 85%, 76%, and 75%, respectively. The test-retest reliability coefficients were 60%, 74%, 72% and 70%, respectively [40].

After informing the students of the purpose of the study and demonstrating how to answer the questions, the battery of the questionnaires was administered to the students. Data were analyzed using SPSS 16 software through Chi-square, Pearson correlation coefficient and linear regression model at the significance level of 0.05. The qualitative data were presented by frequency and percent, and quantitative variables were illustrated as mean  $\pm$  SD.

## Results

In this study, 42.4% of the participants ( $N = 212$ ) were males and the rest were females. Medical students (30.6%) and nursing students (21.2%) had the highest frequency of participants. The response rate was 98.04%. The mean score of addiction potential was  $32.7 \pm 17.2$ . Results showed that 21% of participants ( $N = 105$ ) had a low level of aggression, 40.2% ( $N = 201$ ) had a moderate level of aggression and 38.8% ( $N = 194$ ) had high levels of aggression. Moreover, 0.4% ( $N = 2$ ) showed a low level of assertiveness, 22.8% ( $N = 114$ ) showed a moderate level of assertiveness and 76.8% ( $N = 384$ ) showed a high level of assertiveness (Table 1).

Table 1. Basic demographic variable mean scores of study participants.

Variables	Mean $\pm$ SD	Minimum	Maximum
Age (y)	21.44 $\pm$ 2.52	17	37
Semester	4.19 $\pm$ 2.71	1	14
Addiction potential	32.67 $\pm$ 17.24	1	85
Aggression	41.54 $\pm$ 12.94	0	80
Assertion	139.42 $\pm$ 22.29	66	200
Anger and rage	24.05 $\pm$ 7.39	0	41
Aggression and insult	8.54 $\pm$ 4.21	0	24
Stubbornness and malice	8.96 $\pm$ 4.86	0	24

The results of the Chi-square test showed a significant relationship between gender, student's current residence, student's economic status, student's economic activity, and education with assertiveness ( $p \leq 0.05$ ). However, there was no

significant relationship between assertion and marital status, semester, educational level, being local or non-local, parents' residence, parental life status, and their educational level and family size ( $p \geq 0.05$ ; Table 2).

Table 2. Comparison of demographic variables in terms of assertion categories.

Variable	Assertion, N (%)			$\chi^2$	p
	Low 2 (0.4)	Moderate 114 (22.8)	High 384 (76.8)		
Sex					
Male	1 (0.5)	34 (16)	177 (83.5)	9.57	0.008*
Female	1 (0.3)	80 (27.8)	207 (71.9)		
Educational level					
Associate	0 (0)	0 (0)	9 (100)	12.78	0.120
BSc.	0 (0)	78 (24.2)	244 (75.8)		
M.D.	2 (1.3)	36 (23.7)	114 (75)		
MSc. & Ph.D.	0 (0)	0 (0)	17 (100)		
Marital status					
Single	2 (0.4)	106 (23)	353 (76.6)	0.306	0.858
Married	0 (0)	8 (20.5)	31 (79.5)		
Locality					
Local	1 (2)	13 (25.5)	37 (72.5)	3.77	0.152
Non-local	1 (2)	101 (22.5)	347 (77.3)		
Current residence					
Dormitory	0 (0)	104 (23.9)	331 (76.1)	18.54	0.005*
Lodging	1 (2.4)	7 (17.1)	33 (80.5)		
Parental house or a relative's house	1 (4.17)	3 (12.53)	20 (83.3)		
Economic status of the family					
Poor	0 (0)	10 (23.8)	32 (76.2)	16.64	0.002*
Moderate	0 (0)	93 (25.7)	269 (74.3)		
Good	2 (2.1)	11 (11.5)	83 (86.5)		
Economic activity along with education					
Yes	0 (0)	10 (12.3)	71 (87.7)	6.50	0.040*
No	2 (0.5)	104 (24.8)	313 (74.7)		
Parental residence					
City	2 (0.4)	105 (23.1)	347 (76.4)	0.52	0.770
Village	0 (0)	9 (19.6)	37 (80.4)		
Family size					
3	0 (0)	9 (19.6)	37 (80.4)	5.65	0.460
4	2 (1.0)	48 (24.5)	146 (74.5)		
5	0 (0)	38 (25.0)	114 (75.0)		
6 and above	0 (0)	19 (17.9)	87 (82.1)		
Semester					
1-2	0 (0)	27 (17.4)	128 (82.6)	7.47	0.110
3-4	2 (0.9)	53 (23.3)	172 (75.8)		
5-above	0 (0)	34 (28.8)	84 (71.2)		
Parental life status					
Both are alive	2 (0.4)	110 (23.0)	367 (76.6)	0.272	0.870
One is alive	0 (0)	4 (19.05)	17 (80.95)		

\* Significant.

The results of the Chi-square test also showed a significant relationship between students' economic status and family size with levels of aggression ( $p \leq 0.05$ ). However, there was no significant relationship between aggression with gender, marital

status, current student's place of residence, educational level, being a local or non-local student, parental residence, student's economic activity associated with education, semester, parental life status and educational level ( $p \leq 0.05$ ; Table 3).

Table 3. Comparison of demographic variables in term of aggregation categories using Chi-square test.

Variable	Aggression, N (%)			$\chi^2$	p
	Low 105 (21)	Moderate 201 (40.2)	High 194 (38.8)		
Sex					
Male	43 (20.3)	82 (38.7)	87 (41)	0.777	0.680
Female	62 (21.5)	119 (41.3)	107 (37.2)		
Educational level				12.00	0.151
Associate	2 (22.2)	4 (44.4)	3 (33.3)		
BSc.	70 (21.7)	125 (38.8)	127 (39.4)		
M.D.	26 (17.1)	63 (41.4)	63 (41.4)		
MSc. & Ph.D.	7 (41.18)	9 (52.94)	1 (5.88)		
Marital status				1.28	0.530
Single	98 (21.3)	182 (39.5)	181 (39.3)		
Married	7 (17.9)	19 (48.7)	13 (33.3)		
Locality				0.428	0.807
Local	9 (17.6)	22 (43.1)	20 (39.2)		
Non-local	96 (21.4)	179 (39.9)	174 (38.8)		
Current residence				10.63	0.100
Dormitory	95 (21.8)	168 (38.6)	172 (39.5)		
Lodging	6 (14.6)	17 (41.5)	18 (43.9)		
Parental house or a relative's house	4 (16.67)	16 (66.66)	4 (16.67)		
Family's economic status				16.42	0.003*
Poor	10 (23.8)	15 (35.7)	17 (40.5)		
Moderate	64 (17.7)	143 (39.5)	155 (42.8)		
Good	31 (32.3)	43 (44.8)	22 (22.9)		
Economic activity along with education				0.367	0.830
Yes	19 (23.5)	32 (39.5)	30 (37)		
No	86 (20.5)	169 (40.3)	164 (39.1)		
Parental residence				3.87	0.150
City	98 (21.6)	186 (41.0)	170 (37.4)		
Village	7 (15.2)	15 (32.6)	24 (52.2)		
Family size				14.06	0.030*
3	18 (39.1)	17 (37.0)	11 (23.9)		
4	39 (19.9)	86 (43.9)	71 (36.2)		
5	26 (17.1)	58 (38.2)	68 (44.7)		
6 and above	22 (20.8)	40 (37.7)	44 (41.5)		
Semester				7.03	0.130
1-2	33 (21.3)	67 (43.2)	55 (35.5)		
3-4	58 (24.7)	85 (37.4)	86 (37.9)		
5-above	16 (13.6)	49 (41.5)	53 (44.9)		
Life status of the parents				3.85	0.150
Both are alive	100 (20.9)	189 (39.5)	190 (39.7)		
One is alive	5 (23.81)	12 (57.14)	4 (19.05)		

\* Significant.

Table 4. Relationship between addiction potential score and covariates using multiple regression model.

Variables	B	SE	Standardized beta	t	p
Aggression	0.229	0.052	0.172	4.440	< 0.001
Assertion	-0.114	0.031	-0.148	-3.718	< 0.001
Semester	0.447	0.994	0.019	0.450	0.653
Sex	-1.989	1.443	-0.057	-1.379	0.169
Marital status	0.073	2.560	0.001	0.029	0.977
Age (y)	-0.223	0.297	-0.033	-0.749	0.454
Field of study	-1.147	0.615	-0.075	-1.865	0.063
History of drug and addictive substances abuse	9.686	2.910	0.142	3.329	0.001
History of tobacco use	7.312	1.535	0.197	4.763	< 0.001
History of alcohol abuse	14.407	2.304	0.270	6.253	< 0.001
(Constant)	40.164	10.336	-	3.886	< 0.001

SE = standard error.

Pearson's correlation coefficient also showed a significant relationship between addiction potential and aggression scores ( $r = 0.259$ ,  $p < 0.001$ ), assertiveness ( $r = -0.162$ ,  $p < 0.001$ ), aggression and insult ( $r = 0.328$ ,  $p < 0.001$ ), stubbornness and malice ( $r = 0.323$ ,  $p < 0.001$ ). However, there was no significant correlation between anger and rage score ( $r = 0.055$ ,  $p = 0.219$ ) and addiction readiness score ( $r = 0.428$ ,  $p = 0.001$ ).

In the regression model, only aggression, history of drug and addictive substance abuse, history of tobacco use, and history of alcohol abuse had a significant relationship with addiction potential ( $p \leq 0.05$ ). On average, with 1 score of increase in the history of drug and addictive substances abuse, the addiction potential score increased by 9.69. This figure for a history of smoking, aggression, and history of alcohol abuse stood at 7.31, 0.23, and 14.41 respectively. There was also a reverse relationship between addiction potential and assertion so that with a 1 score increase in the assertion, addiction potential decreased by -0.11 (Table 4).

## Discussion

The results of this study showed a significant relationship between gender, student's current residence, student's economic status, student's economic activity, and education with assertiveness. In addition, a significant relationship was observed between students' economic status and family size with levels of aggression. In the regression model, aggression, history of drug and addictive substances abuse, history of

tobacco use, and history of alcohol abuse were significantly related to addiction potential. There was a negative relationship between assertion and addiction potential.

The mean aggression score in this study was  $41.54 \pm 12.94$ . Some studies have reported a lower mean score than the present study [3-5,9] and in another study, it is higher than the mean of this study, which is inconsistent with our results [41]. Perhaps 1 of the reasons for inconsistent results is the type of university and geographical area of study.

The mean score of assertion was  $139.42 \pm 22.29$ . In some studies, the reported mean score was lower than the present study [9,36,42]. Perhaps 1 of the reasons for the higher score of assertion in the present study is that the participants were students of medical sciences and they achieved more in their studies.

The mean score of addiction potential was  $32.67 \pm 17.24$ . In some studies, the mean score of addiction potential was higher than the results of this study, which is inconsistent with our results [5,31,34-36]. The results of this study are consistent with the low mean score of addiction potential reported in other studies [3,4,9,22,43]. Perhaps one of the reasons for the discrepancy is the study environments and types of university.

There was no significant relationship between addiction potential and age. This is in line with the results of some studies in Iran and internationally [22,31,44-46]. However, it is inconsistent with the results of Lechner's study [47]. Perhaps one of the reasons for the similarity of results is the similarity of the mean age of individuals in the different studies.

Although the score of addiction potential was lower among

women, there was no significant relationship between addiction potential and gender. A number of studies reported a significant relationship between sex and addiction potential which is inconsistent with the present results [22,31,35,45]. A number of other studies, however, indicated a significant relationship between sex and addiction potential, which is consistent with the present results [44,46,47]. Men are more likely than women to engage in social, occupational and income issues, and if they do not feel satisfied with themselves at achieving their social goals, they may turn to addictive and/or narcotic substances to obtain the satisfaction that they have failed to achieve with their social goals. This can be a reason for the increased addiction potential and substance abuse among men.

In this study, there was no significant relationship between addiction potential and marital status, which is inconsistent with the results of a study [35] but consistent with some others [22,31,44]. Marriage is a preventive factor of psychological trauma that can be a promising factor in the prognosis of treatment.

There was a significant relationship between aggression and addiction potential. Some studies have reported such a relationship, which is consistent with the present results [1,3-5,9,17-20]. To explain this finding, it can be argued that aggressive people do not use drugs for pleasure only. Rather, they may use substances to suppress and overcome their inner turmoil. Moreover, aggressive behavior is likely to lead to the individual's isolation by positive peers who have logical and phlegmatic responses to life problems and issues, thus aggressive behavior may lead an individual to join deviant groups. This, in turn, can provide a likely context for drug addiction.

There was also a negative relationship between assertion and addiction potential such that with an increase in the assertion score, there was a decrease in addiction potential score. This is consistent with some studies [4,9,36,38]. It may be argued that people who are less assertive have poorer self-esteem, and are not able to decline the irrational requests of others because of their low self-esteem. These people may even end up identifying with and being assimilated with their addicted friends for approval, saving them from being rejected.

Limitations of this study include being a cross-sectional study, measurement of 3 variables among medical students and not assessing stress levels in study participants (which may be associated with addiction) [48].

## Conclusion

Students' assertiveness scores were acceptable. Given the direct relationship between aggression and addiction potential,

and that more than three-quarters of the students had moderate to high levels of aggression, it is important to pay attention to this. Interventions may play an important role in improving the relationship between aggression and addiction potential.

## Conflicts of Interest

The authors have no conflicts of interests to declare.

## References

- [1] Rounaghi M, Pakseresht S, Asiry S, et al. Relationship between aggression and addiction tendency among university students. *J Holist Nurs Midwifery* 2018;28(3):185-91.
- [2] Anderson CA, Bushman BJ. Human aggression. *Ann Rev Psychol* 2002;53:27-51.
- [3] Doostian Y, Arian M, Massah O, et al. The Association between Emotional Expressiveness Style and Addiction Potential in Male High School Students. *Iran Rehabil J* 2015;13(4):74-9.
- [4] Hajihassani M, Shafiabadi A, Pirsaghi F, et al. Prediction of addiction potential on the basis of aggression and assertiveness in university students. *Res Addict* 2012;5(20):41-54.
- [5] Mostafaei H, Hosseini M, Jenaabadi H. The Investigation of the Relationship between the Aggression and Addiction Potential High-school Male Students. *J Manag Account Stud* 2014;2(1):81-4.
- [6] Galanter M. Innovations: alcohol & drug abuse: spirituality in Alcoholics Anonymous: a valuable adjunct to psychiatric services. *Psychiatric Serv* 2006;57(3):307-9.
- [7] Galanter Marc, Kleber D Herbert, Kathleen. B. *The American Psychiatric Publishing textbook of substance abuse treatment*, 5th edition. Washington DC (WA): American Psychiatric Pub; 2014.
- [8] Mohebi MD, Ayubi E, Azmoodeh A, et al. The relationship between identity styles and addiction vulnerability: A cross-sectional study among medical students in Zahedan, South Eastern Iran. *Psychiatry Res* 2018;268:184-8.
- [9] Hajihassani M, ShafiAbadi A, Pirsaghi F, et al. Relationship between aggression, assertiveness, depression and addiction potential in female students of Allameh Tabbatabai. *Knowl Res Appl Psychology* 2012;13(3):65-74.
- [10] Alberti R, Emmons M. *Your perfect right: A guide for assertive living*, 4th ed. California (CA): Impact, San Luis Obispo; 1982.
- [11] Stoner SA, Norris J, George WH, et al. Women's condom use assertiveness and sexual risk-taking: Effects of alcohol intoxication and adult victimization. *Addict Behav* 2008;33(9):1167-76.
- [12] Sharma A. Aggressive behavior in University Students: The role of family environment. *Adv Asian Soc Sci* 2012;3(1):622-8.
- [13] Sharma A. Aggression in adolescents: Interplay of family and school environment. *Br J Humanit Soc Sci* 2011;1(2):121-33.
- [14] Sukhodolsky DG, Ruchkin VV. Association of normative beliefs and anger with aggression and antisocial behavior in Russian male juvenile offenders and high school students. *J Abnorm Child Psychol* 2004;32(2):225-36.
- [15] Webster G. Low self-esteem is related to aggression, but especially when controlling for gender: A replication and extension of Donnellan et al.(2005). *Represent Res Soc Psychol* 2006;29:12.
- [16] Vahedi S, Fathi azar E. The effect of social competence training on decreasing in aggression pre-school boys. *J Fundam Ment Health* 2006-2007;8(31-32):131-40.
- [17] Hayatbakhsh MR, Najman JM, Bor W, et al. Multiple risk factor model predicting cannabis use and use disorders: a longitudinal study. *Am J Drug Alcohol Abuse* 2009;35(6):399-407.
- [18] Saatcioglu O, Erim R. Aggression among male alcohol-dependent inpatients who smoke cigarettes. *J Psychol* 2009;143(6):615-24.
- [19] Jaffe A. *Drug use and aggression: The effect of rumination and other person-related variables*. Long Beach (CA): ProQuest Dissertations Publishing; 2005.

- [20] Epstein JA, Botvin GJ, Diaz T, et al. Aggression, victimization and problem behavior among inner-city minority adolescents. *J Child Adolesc Subst Abuse* 2000;9(3):51-66.
- [21] Bushman JB. Effects of Alcohol on Human Aggression. In: Galanter M. et al. (eds) *Recent Developments in Alcoholism. Recent Development in Alcoholism*, vol 13. Boston (MA): Springer; 2002. p. 227-43.
- [22] Ranjbaran M, Mohammadshahi F, Mani S, et al. Risk factors for addiction potential among college students. *Int J Prev Med* 2018;9:17.
- [23] Nikmanesh Z, Adrom M, Bakhshani NM. Minnesota multiphasic personality inventory score as a predictor of addiction potential in youth. *Int J High Risk Behav Addict* 2012;1(1):22-6.
- [24] Fard AE, Rajabi H, Delgoshad A, et al. The possible relationship between university students' personality traits, psychological well-being and addiction potential. *Int J Soc Sci Stud* 2014;2(2):120-5.
- [25] Rezaei A, Islami B, Mehdipour M. The role of the family on the attitude of the youth for addiction in varamin. *Sociol Stud Youth* 2017;5(15):27-50.
- [26] Runcan P-L. The time factor: does it influence the parent-child relationship? *Procedia Soc Behav Sci* 2012;33:11-4.
- [27] Amiri M, Khosravi A, Chaman R. Drug abuse pattern and high risk behaviors among addicts in Shahroud county of Semnan province, Northeast Iran in 2009. *J Res Health Sci* 2010;10(2):104-9.
- [28] Chaman R, Khosravi A, Sajedinejad S, et al. Smoking and its related factors among Iranian high school students. *Iran J Psychiatry Behav Sci* 2015;9(4):e1583.
- [29] Aghayan S, Amiri M, Chaman R, et al. Quality of life in methadone maintenance treated patients in Iran. *Int J High Risk Behav Addict* 2015;4(4):e22275.
- [30] Aghayan S, Khosravi A, Ramezanzad H, et al. Quality of life among drug-dependent and non-drug dependent individuals in Iran. *Iran J Psychiatry Behav Sci* 2018;12(1):e10101.
- [31] Soleimani MA, Sharif SP, Yaghoobzadeh A, et al. Relationship between hardiness and addiction potential in medical students. *Iran J Psychiatry Behav Sci* 2016;10(4):e6225.
- [32] Sharg A, Shakibi A, Neisari R, et al. Survey of factors related to the relapse of addiction from view of addict patients attending to drug abuse treatment clinics in West Azerbaijan. *Urmia Med J* 2011;22(2):129-36.
- [33] van der Meer Sanchez Z, Nappo SA. Religious treatments for drug addiction: an exploratory study in Brazil. *Soc Sci Med* 2008;67(4):638-46.
- [34] Nikoo SJ, Kharamin S, Jobaneh RG, et al. Role of family resilience and mindfulness in addiction potential of students. *Armaghane Danesh* 2015;20(4):357-68.
- [35] Zeinali A. Risk and Protective Factors in West Azerbaijan Province Students Addiction Susceptibility. *Iran J Psychiatry Clin Psychol* 2014;20(1):63-73.
- [36] Zargar Y, Eshrati T, Ghaseminejad M, et al. Simple and multiple relationships between assertiveness, sensation seeking, alexithymia and addiction potential in university students. *Int J Psychol* 2012;5(1):100-18.
- [37] Weed NC, Butcher JN, McKenna T, et al. New measures for assessing alcohol and drug abuse with the MMPI-2: The APS and AAS. *J Pers Assess* 1992;58(2):389-404.
- [38] Zargar Y, Najarian B, Naami A. The relationship of some personality variables, religious attitudes and marital satisfaction with addiction potential in personnel of an industrial factory in Ahvaz. *J Educ Psychol* 2008;15(1):99-120.
- [39] Gambrell ED, Richey CA. An assertion inventory for use in assessment and research. *Behav Ther* 1975;6(4):550-61.
- [40] Zahedifar S, Najarian B, Shokrkon H. Construct and Validation of a Scale for Measuring Aggression. *J Educ Psychol* 1975;1(75):73-102.
- [41] Asadi Majreh S, Akbari B. Structural Model Aggression according to Emotion Regulation, Alexithymia, Impulsivity and Sensation Seeking in Students. 2019.
- [42] Tavangar L, YazdKhasti F. Effectiveness of eclectic intervention (cognitive restructuring, cognitive coping skills and role playing approaches) on self-assertiveness and social anxiety among Isfahan university students. *J Adv Med Biomed Res* 2013;21(86):76-85.
- [43] Alireza AY, Majid S, Parastoo A. The investigation of drug addiction potential among medical students: Role of subjective components of anger. *Res Addict* 2016;9(35):25-35.
- [44] Arani ZA, Biderafsh A, Salmani S. The relationship of spirituality development and addiction potential among students of Qom University of Medical Sciences. *J Religion Health* 2019;58(4):1107-14.
- [45] Ljubotina D, Galic J, Jukic V. Prevalence and risk factors of substance use among urban adolescents: questionnaire study. *Croat Med J* 2004;45(1):88-98.
- [46] Ko C, Hsiao S, Liu G, et al. The characteristics of decision making, potential to take risks, and personality of college students with Internet addiction. *Psychiatry Res* 2010;175(1-2):121-5.
- [47] Lechner WV, Murphy CM, Colby SM, et al. Cognitive risk factors of electronic and combustible cigarette use in adolescents. *Addict Behav* 2018;82:182-8.
- [48] Gligor S, Mozoş I. Indicators of smartphone addiction and stress score in university students. *Wien Klin Wochenschr* 2019;131(5-6):120-5.