What Components of Adolescents' Responsibility are Effective in Preventing Addiction?

Abstract

Background: In most countries, the age of addiction is declining, and the prevalence of adolescent addiction is increasing. Many factors can affect the addiction tendency; one of them can be a sense of responsibility. This study was designed to evaluate the probable relation between addiction tendency and responsibility. **Materials and Methods:** This cross-sectional study was conducted in Isfahan in 2018. A total of 496 high school students aged from 15 to 18 years were selected by a multistage cluster and systematic random sampling method. Students' responsibility and adolescents' addiction tendency questionnaire were used. The collected data were analyzed by the Statistical Package for the Social Sciences version 20 using Chi-square test, independent t-test, multivariate analysis of variance, and linear regression. **Results:** The mean age of participants was 16.50 ± 1.12. The results showed that boys' out-of-home activities were more than girls ($P < 0.001$), but there was no significant difference between girls and boys regarding indoor activities. Furthermore, it was found that girls were more responsible than boys ($P = 0.004$) and addiction tendency was higher in boys ($P = 0.001$). Social responsibility and addiction tendency had a significant negative relationship in this research ($P < 0.001$). In addition, parents' education, the feeling of belonging, and the sense of security had an effect on the addiction tendency ($P < 0.001$ for all). **Conclusion:** This study showed that social responsibility could affect the addiction tendency.

Keywords: *Accountability, addiction, adolescent, social responsibility*

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Introduction

Adolescence is a period of physical, cognitive, and socio-emotional changes, and also, it is a course to increase the ability to think; change relationships, responsibilities, and management of assignments independently; and create a new orientation for the future.[1]

One of the critical factors that can make adolescent choices more perfect is personal and social responsibility, a commitment that a person has toward himself, beliefs, values, duties, and family.[2-5] In other words, accountability is a multidimensional construction, includes emotional, behavioral, and moral aspects, and has so many definitions across the studies.[6]

Adolescents are more vulnerable to high-risk behaviors because of the evolutionary characteristics of this period.[7] Studies have shown that most high-risk behaviors such as smoking, drinking, and drug abuse begin at this age.[7,8]

The cause of addiction is complex and none of the current hypotheses can fully explain the cause.[9] On the other hand, substance abuse is affected by individual, family, social, economic, political, and cultural factors such as depression, excitement, aggression, socioeconomic situation, and family emotional atmosphere.[9-13] Studies showed that some adolescents use drugs to be cool, feel powerful, accept in the peer relationships, and to forget their problems.[8]

Considering the importance of addiction in adolescents and identifying risk and protective factors, and to the extent that the researcher has searched for scientific resources, a similar study has not been done, so this study was designed to examine the addiction tendency status and the probable role of responsibility in adolescents.

Materials and Methods

This cross-sectional study was conducted

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in Isfahan in 2018. Five hundred high school students aged 15–18 years were selected by a multistage cluster systematic random sampling method. Out of all five education districts in Isfahan, one girls' school and one boys' school were selected by convenience method. Out of each school, fifty students were randomly selected based on the list of students by a simple random sampling method using a random number table. If the students did not have the criteria for entering the study or the questionnaire was not completed, sampling would continue until the sample size reached the specified number.

The inclusion criteria were the willingness to participate in the study and having ages 15–18 years, and the exclusion criteria were dissatisfied with engaging and failure to complete more than 20% of the questionnaire information.

The study was approved by the Ethics Committee of Isfahan University of Medical Sciences (Code No. 396316). In order to meet the ethical aspects of the research, coordination was initially carried out with the school authorities and the purpose of the study was explained. The confidentiality of the information was assured to students. Two self-administered questionnaires were used for data collection: Students' responsibility and adolescents' addiction tendency questionnaire.

The five-scale responsibility questionnaire was designed by Kordloo, and its validity and reliability have been investigated. Cronbach's alpha coefficient was 89%.[14]

In the first and second scales, students' activities at school and home asked, respectively, and one score was allocated to each item; eventually, the total count of each scale showed the students' activity at school and home.

The student attendance status was reviewed in the third scale. The fourth (22 questions) and fifth scales (56 items) assessed the accountability (21 questions), sense of security (14 questions), self-esteem (14 questions), and belonging (29 questions). The questionnaire is scored by the Likert method. Answers ranged from one (I'm not satisfied at all) to four (I'm completely satisfied), and to calculate the total score of each variable, the scores of related questions were summed up. The higher the score, the better the situation.

The addiction tendency questionnaire was designed by *Mirhashemi et al*. and its reliability was calculated using Cronbach's alpha, which was 80%[15]

It had 16 questions that measured the addiction tendency in three dimensions (individual, social, and environmental). The answering spectrum of this tool was Likert, ranging from one to five (very low to very high).

The collected data were analyzed by the Statistical Package for the Social Sciences version 16 using Chi-square test, independent *t*-test, analysis of variance (ANOVA), and linear regression.

Results

Two hundred and forty-seven (49.8%) boys and 249 (50.2%) girls were participating in this study. The mean age was 16.53 ± 1.12 in boys and 16.47 ± 1.12 in girls ($P = 0.62$). The general characteristics of the participants are listed in Table 1.

The mean number of indoor activities such as house cleaning, participation in family decision-making, maintaining the green space of the home, minor repairs of equipment, and cooking in girls was 5.17 ± 2.96 and in boys was 5.02 ± 3.46 ($P = 0.61$). Furthermore, the mean out-of-home activity such as activities at the sports club, forums, artistic centers, and student council in girls was 2.05 ± 1.99 and in boys was 2.74 ± 2.28, which was statistically significant ($P < 0.001$). The student attendance status is shown in Figure 1.

The grade and sex significantly affected responsibility and tendency to addiction. ANOVA was conducted to assess the grade and sex differences on responsibility,

Table 1: Comparison of demographic characteristics of high school students based on sex*

	Sex (%)		Total (%)	*P***
	Male	**Female**		
Grade				
Nine	60 (44.4)	75 (55.6)	135 (100)	0.52
Ten	61 (52.6)	55 (47.4)	116 (100)	
Eleven	66 (52.4)	60 (47.6)	126 (100)	
Twelve	61 (49.2)	63 (50.8)	124 (100)	
Mother's job				
Housewife	153 (48.9)	160 (51.1)	313 (100)	0.25
Employee	39 (45.9)	46 (54.1)	85 (100)	
Teacher	18 (47.4)	20 (52.6)	38 (100)	
Others	37 (61.7)	23 (38.3)	60 (100)	
Mother's education				
Illiterate	11 (55)	9 (45)	20 (100)	0.92
Under the diploma	62 (47.7)	68 (52.3)	130 (100)	
Diploma	97 (50.3)	96 (49.7)	193 (100)	
Academic education	77 (50.3)	76 (49.7)	153 (100)	
Father's job				
Employee	86 (51.2)	82 (48.8)	168 (100)	0.14
Worker	46 (44.2)	58 (55.8)	104 (100)	
Self-employment	74 (47.4)	82 (52.6)	156 (100)	
Unemployed	9 (81.8)	2 (18.2)	11 (100)	
Others	30 (55.6)	24 (44.4)	54 (100)	
Father's education				
Illiterate	3 (33.3)	6 (66.7)	9 (100)	0.45
Under the diploma	34 (44.7)	42 (55.3)	76 (100)	
Diploma degree	101 (53.2)	89 (46.8)	190 (100)	
Academic education	107 (49.1)	111 (50.9)	218 (100)	

*Chi-square test was used, **P<0.05 regarded significant

and its five subscales include security, self-esteem, sense of belonging, sense of responsibility, and accountability [Table 2] and tendency to addiction and its three social, individual, and environmental dimension [Table 3]. The mean score of responsibility, self-esteem, and security in girls in Grade 12 was significantly higher than other groups (32.84 ± 7.87, $P < 0.001$; 40.49 ± 7.68, $P < 0.001$; and 42.22 ± 9.52, $P = 0.001$). The boys of the 11th grade had a lower mean score of accountability than the other grade groups (25.62 ± 9.43, $P < 0.001$).

The lowest mean score of addiction tendency in the environmental dimension was for girls in the 9th and 12th grades, which had a significant difference with boys in Grades 11th and 12th ($P = 0.04$ and $P = 0.03$). The difference in the mean score of the social dimension of addiction tendency in boys in Grade 9 was significant in comparison with girls at the same grade ($P = 0.001$), boys in Grade 10 ($P = 0.01$), and girls in Grade 12 ($P < 0.05$). The highest mean score was for boys in the 9th grade, and the lowest score was for girls in the 12th grade. In the individual dimension of addiction tendency, the girls

Dependent variable	Grade	Sex	Mean±SE	95% CI		P
				Lower bound	Upper bound	
Sense of responsibility	9th	Male	28.000±0.901	26.231	29.769	0.33
		Female	30.707±0.806	29.124	32.289	
	10th	Male	29.459±0.893	27.704	31.214	0.65
		Female	27.182±0.941	25.334	29.030	
	11th	Male	27.182±0.859	25.495	28.869	0.86
		Female	29.000±0.901	27.231	30.769	
	12th	Male	28.295±0.893	26.540	30.050	0.008
		Female	32.841±0.879	31.114	34.568	
Accountability	9th	Male	29.550±0.927	27.729	31.371	>0.05
		Female	29.667±0.829	28.038	31.295	
	10th	Male	29.393±0.919	27.588	31.199	0.99
		Female	28.218±0.968	26.316	30.120	
	11th	Male	25.621±0.884	23.885	27.357	0.23
		Female	28.717±0.927	26.896	30.538	
	12th	Male	29.574±0.919	27.768	31.380	0.45
		Female	32.222±0.904	30.445	33.999	
Self-esteem	9th	Male	36.233±1.045	34.180	38.287	0.97
		Female	37.653±0.935	35.816	39.490	
	10th	Male	35.541±1.037	33.504	37.578	>0.05
		Female	35.436±1.092	33.291	37.581	
	11th	Male	33.682±0.997	31.724	35.640	0.95
		Female	35.300±1.045	33.246	37.354	
	12th	Male	35.344±1.037	33.307	37.381	0.01
		Female	40.492±1.020	38.488	42.496	
Sense of belonging	9th	Male	77.767±2.450	72.953	82.581	0.46
		Female	84.453±2.191	80.148	88.759	
	10th	Male	75.639±2.430	70.865	80.414	>0.05
		Female	76.236±2.559	71.208	81.264	
	11th	Male	71.500±2.336	66.910	76.090	0.99
		Female	73.850±2.450	69.036	78.664	
	12th	Male	75.016±2.430	70.242	79.791	0.03
		Female	85.841±2.391	81.143	90.539	
Security	9th	Male	39.083±1.404	36.325	41.841	>0.05
		Female	38.960±1.255	36.493	41.427	
	10th	Male	36.869±1.392	34.134	39.604	>0.05
		Female	36.564±1.466	33.683	39.444	
	11th	Male	33.621±1.338	30.992	36.251	0.93
		Female	35.950±1.404	33.192	38.708	
	12th	Male	38.918±1.392	36.183	41.653	0.69
		Female	42.222±1.370	39.531	44.914	

ANOVA test was used. CI: Confidence interval, SE: Standard error, ANOVA: Analysis of variance

Table 3: The mean score of addiction tendency dimensions in students based on sex and grade

Dependent variable	Grade	Sex	Mean±SE	95% CI		P
				Lower bound	Upper bound	
Environmental dimension of addiction tendency	9th	Male	9.917±0.529	8.876	10.957	0.24
		Female	8.200±0.474	7.270	9.130	
	10th	Male	8.852±0.525	7.821	9.884	0.94
		Female	9.745±0.553	8.659	10.832	
	11th	Male	10.364±0.505	9.372	11.355	>0.05
		Female	10.017±0.529	8.976	11.057	
	12th	Male	10.492±0.525	9.460	11.523	0.04
		Female	8.222±0.517	7.207	9.237	
Social dimension	9th	Male	18.533±0.713	17.133	19.933	0.001
		Female	14.453±0.637	13.201	15.706	
	10th	Male	14.984±0.707	13.595	16.372	0.99
		Female	15.673±0.744	14.210	17.135	
	11th	Male	16.727±0.679	15.392	18.062	0.99
		Female	15.933±0.713	14.533	17.333	
	12th	Male	15.705±0.707	14.316	17.094	0.37
		Female	13.556±0.695	12.189	14.922	
Individual dimension	9th	Male	8.950±0.465	8.037	9.863	0.98
		Female	8.400±0.416	7.583	9.217	
	10th	Male	8.623±0.461	7.717	9.529	>0.05
		Female	8.873±0.485	7.919	9.826	
	11th	Male	10.424±0.443	9.554	11.295	0.77
		Female	9.417±0.465	8.504	10.330	
	12th	Male	9.230±0.461	8.324	10.135	0.07
		Female	7.349±0.454	6.458	8.240	

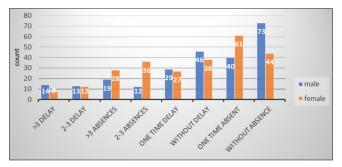ANOVA test was used. ANOVA: Analysis of variance, CI: Confidence interval, SE: Standard error

Figure 1: The frequency of latency and absence of students based on gender

in the 12th grade had the lowest score and the boys in the 11th grade had the highest score.

The total responsibility score was measured based on its subscales, and it was significantly different between two genders (216.18 ± 44.39 in girls vs. 203.79 ± 50.82 in boys, P = 0.004). Measurement of the total score of addiction tendency showed that girls had a lower trend than boys (32.30 ± 11.20 vs. 35.73 ± 12.05, P = 0.001).

To predict the tendency to addiction, according to the demographic variables and responsibility scales, a linear regression test was performed. The analysis showed that the defined model was appropriate (R^2 = 0.66, P < 0.001). Parents' education, sex, responsibility, feeling of belonging, and sense of security could predict

addiction tendency in students. The results are shown in Table 4.

Discussion

The main purpose of this study was to investigate the addiction tendency status and the relationship between responsibility and addiction tendency among high school students in Isfahan.

Findings showed that boys have more addiction tendency than girls. In 2015, Zare Shahabadi et al. conducted a study and the results were the same.[16]

In the present study, there is no significant correlation between parents' job and addiction tendency, but the level of their education affected it, and the addiction tendency was significantly lower in the children of more educated parents. Inconsistent with our results, Rounaghi et al. found adolescents whose mothers had university degree and fathers were retired with literacy to read and write, had more tendencies to addiction. The different results can be due to the difference between the age, marital status, level of education, and cultural discrepancy of the statistical population.[17]

In this study, age, grade, and students' attendance status did not have an effect on addiction tendency, whereas Heradstveit et al. found that more drinking and drug abuse

Table 4: Variable predicting addiction tendency in students by linear regression test

Model	Unstandardized coefficients		P	95.0% CI for B	
	B	SE		Lower bound	Upper bound
Demographic characteristics					
Father education[a]	−3.240	0.691	0.000	−4.598	−1.881
Mother education[a]	−2.283	0.582	0.000	−3.427	−1.139
Father job	−0.349	0.398	0.381	−1.130	0.433
Mother job	0.238	0.423	0.574	−0.593	1.070
Grade	−1.946	2.200	0.377	−6.270	2.378
Sex[b]	−1.684	0.754	0.026	−3.165	−0.202
Responsibility subscales					
Number of out-of-home activities	−0.029	0.205	0.887	−0.432	0.374
Number of activities inside the house	−0.195	0.131	0.139	−0.453	0.063
Sense of security	0.235	0.080	0.004	0.077	0.393
Feeling of belonging	0.277	0.072	0.000	0.135	0.418
Self esteem	−0.065	0.115	0.571	−0.290	0.160
Attendance status	−0.132	0.179	0.458	−0.483	0.218
Overall responsibility	−0.306	0.048	0.000	−0.401	−0.212

The reference group: [a]Illiterate, [b]Boy. CI: Confidence interval, SE: Standard error

can lead to more school absenteeism. This result can be due to the difference in culture and training system.[18]

In our study, girls were more responsible than boys. Panah and Hekmat and also Iman in their studies found similar results.[19,20]

Inconsistent with our study, Movahed *et al*. on 598 teenagers with age of 14–18 years in Kurdistan and Kurdlo in Tehran on 497 high schoolers concluded that there is no significant relationship between responsibility and gender. This different conclusion can be due to ethnicity and cultural discrepancy.[21,14]

The number of indoor activities did not differ between girls and boys in the present study, which is inconsistent with the results of Khaje Noori *et al*., whereas similar to their research, in our study, the boys' out-of-home activities were significantly higher than girls. Moreover, neither affected the addiction tendency. The difference in some results can be due to variation in culture and location of the studies.[2]

The finding showed a significant relationship between addiction tendency and responsibility in adolescents in such a way that adolescents with more responsibility had a lower tendency to addiction, which is consistent with previous studies.[10,22]

In 2010 a study conducted by Rezaei *et al*. found that conscientious had a lower tendency to addiction. It is noteworthy that conscientiousness is one of the five personality types that consist of six traits that one of them is the responsibility.[10]

Fisher *et al*. in their study expressed that responsibility can reduce the probability of return to drug abuse and heavy alcohol use in 108 adults.[22]

One of the limitations of this study was the type of research that, with a cross-sectional design, we cannot precisely study the causality relationship. Other limitations of this study were the number of questions. Although it was attempted to respond to questions at a time when students are comfortable, and in a confident place, some students were tired of answering questions.

Conclusion

Overall, the study showed that responsibility, sense of security, and belonging and demographic factors such as sex and parental education have related to addiction tendency.

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Conflicts of interest

There are no conflicts of interest.

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