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Evaluation of Relationship between Self-efficacy and Addiction Potential and Acceptance among Students of Zanjan University of Medical Sciences

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Abstract

Background and Objective: Recognition of factors related to tendency toward substance abuse in students can have a significant effect on preventing their tendency to addiction. Therefore, this study aimed to determine the relationship between self-efficacy and tendency toward substance abuse in students of Zanjan University of Medical Sciences, Zanjan, Iran.

Materials and Methods: This descriptive-correlational research was conducted on all MSc and PhD students (a total of 1759 individuals) of Zanjan University of Medical Sciences in the academic year of 2015-2016. Sample size was estimated at 315 using Cochran method, and subjects were entered into the study through random sampling. Data collection tools included Sherer's general self-efficacy, and addiction potential (APS) and acceptance (AAS) scales. From 315 distributed questionnaires, 284 completed surveys were assessed. Data analysis was performed using descriptive statistics, Pearson's correlation coefficient and multiple linear regression.

Results: In this research, a significant relationship was observed between self-efficacy and addiction potential (r=-0.281, P=0.001) and acceptance (r=-0.316, P=0.001). According to the results of multiple linear regression, self-efficacy can effectively predict addiction potential and acceptance, in a way that 28% and 30% of variance of addiction potential and acceptance were determined by this variable, respectively.

Conclusion: According to the results of the research, self-efficacy is one of the predictive factors for addiction potential and acceptance in students.

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Introduction

University students are an important part of the young and efficient human resource of the community. Therefore, attention to their mental and psychological health is of paramount importance. However, evidence has shown that this influential community of the society is not safe from risks of life and is threatened by high-risk factors, including a tendency toward substance abuse. Today, a tendency toward substance abuse has increased in the young generation, including students. In addition, the high sensitivity of this period of life highlights the importance of this issue (1). All types of substance abuse are similar in terms direct activation of brain reward system, which contributes to the strengthening of behaviors and creating memories. Activation of the reward system by substance abuse is so high that other normal activities are neglected. Instead of activating reward system through adaptive behaviors, substance abuse leads to direct activation of reward passes.

While the pharmaceutical mechanisms, which are used by each category of drugs to create reward, are different, mainly those drugs that activate the system and create a sense of pleasure are recognized as a substance that makes people intoxicated. Moreover, people with low self-restraint have a high potential for being addicted to a drug. It means that the origin of substance abuse disorders can be found in the behavior of individuals a long time before the onset of substance abuse (2). Abuse of narcotics or any other addictive substance causes changes in biological and physiological levels of individuals due to their medicinal effects. The most important part of these changes is observed in the central and peripheral nervous systems, eventually affecting the physical and psychological states of people. In this regard, some of the most important changes are temporary relief of depression, stress, anxiety, and physical pain, satisfaction and inner peace. On the other hand, various psychological, social, familial and biological factors are involved in drug addiction, among which self-efficacy has a significant importance (1).

Bandura has marked that self-efficacy is a constructive power, by which the cognitive, social, emotional and behavioral human skills are effectively organized to realize various goals. According to this scholar, knowledge, skills, and achievements of a person are not appropriate determinants of their future performance. In contrast, self-believe about the abilities of oneself affects the performance of individuals (3). As a personal structure,

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self-efficacy is one's belief in his ability to show specific behaviors, which leads to specific objectives or help to deal with stressful situations. In other words, self-efficacy is the representative of optimism toward personal abilities and a universal structure, which seems to have an impact on the motivation of human being. Studies have shown that high self-efficacy is associated with higher quality of life and self-confidence and better clinical outcomes (4).

On the other hand, studies conducted on the tendency toward substance abuse in students have demonstrated the expansion of this issue and its transformation into a major problem in educational institutes. In this regard, Larisa et al. evaluated the tendency toward drug use of students in University of St. Petersburg, showing a growing trend of substance abuse among these individuals. According to their results, lack of timely prevention of this issue could have detrimental impacts on students, university and, eventually, the whole society (5). In addition, studies have been conducted to assess the relationship between self-efficacy and substance abuse, most of which have been performed on addicts and considered the association between self-efficacy and drug use or rehabilitation. In this respect, Zamvalt pointed out the positive and direct association between self-efficacy and reduced substance abuse in individuals, who had not reached the peak of drug use yet, in his PhD thesis (6). Moreover, Lopez et al. reported a reverse relationship between self-efficacy and drug use in their research, which was conducted on addicts seeking treatment categorized in three therapeutic groups (7).

Dolan et al. marked that low self-efficacy provides the basis for alcohol consumption in students (8). In another research, McClare et al. evaluated the issues related to alcohol consumption, depression, impulse control, counter avoidance and social support by friends, concluding that alcohol consumption was one of the predictors of self-efficacy in substance abusers (9). Furthermore, Tate et al. showed that low self-efficacy provides the basis for cocaine abuse in adolescents (10). In Iran, Rezakhani Moghadam et al. conducted a research on the prevalence of drug use in the University of Tehran, reporting the prevalence rate of 37.5% and 33% in University of Tehran and Tehran University of Medical Sciences, respectively (11). In addition, Abolghasemi et al. found a significant relationship between self-efficacy and addiction potential in adolescents. According to their results, adolescents with low self-efficacy were more prone to

substance abuse, compared to normal individuals (12).

Review of previous studies demonstrated that no similar research was conducted on students of universities of medical sciences. Therefore, given the importance of assessment of tendency toward substance use and its personal, familial and social dimensions, and with regard to the necessity of recognition of predictive factors in individuals, especially young adults, and education of protective factors against addiction, this study aimed to determine the relationship between self-efficacy and addiction potential and acceptance among students of Zanjan University of Medical Sciences.

Materials and Methods

Sample population of this descriptive-correlational research included all MSc and PhD students of Zanjan University of Medical Sciences in the academic year of 2015-2016, which was reported to be 1759 individuals according to the statistics extracted from the education management system. However, the sample size was estimated at 315 using Cochran formula. Given the specificity of the sampling framework, stratified random sampling was carried out by selecting three schools of medicine, dentistry and nursing-midwifery from the existing schools, followed by random selection of the students based on the list of names and with regard to the total number of students in each school. Data collection tools included Sherer's general self-efficacy, and addiction potential (APS) and acceptance (AAS) scales retrieved from MMPI-2. The first part of these questionnaires included demographic characteristics of the subjects, such as gender, place of residence, age, and field of study. On the other hand, the second section included 17 items on self-efficacy, 13 items on addiction acceptance and 39 items on addiction potential.

General self-efficacy scale by Sherer contains 17 items, each scored based on a five-point Likert scale (from completely disagree to completely agree). In this regard, items one, three, eight, nine, 13 and 15 were scored from right to left, and the remaining items were reversely scored (from left to right). Therefore, maximum and minimum scores of the scale were 85 and 17, respectively (13). This scale was translated and its validity was confirmed by Barati Bakhtiari, quoted by Foulad Chang. In the mentioned study, the reliability of the scale was estimated at the Cronbach's alpha of 0.79. In addition, the reliability was equal to 0.76 using Guttman

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split-half test (13). In the current study, face and content validity of the questionnaire were confirmed, and its reliability was estimated at Cronbach's alpha of 0.76. On the other hand, AAS was first applied by Wid et al. using MMPI-2 elements with contents obviously related to substance abuse. This scale has two alternatives of yes (1) and no (9), where the higher value is regarded as greater preparedness and acceptance. The final AAS contains 13 items, and raw scores of AAS are turned into linear t scores using normal data of MMPI-2.

Weed et al. reported the internal consistency of a combined sample of substance abusers, psychiatric patients, and normal subjects at 0.74. In addition, reliability coefficient of male and female normal subjects of MMPI-2 was reported at 0.89 and 0.84, respectively (14). In Iran, this scale was evaluated by Minouei with a reliability coefficient of 0.53 (13). In this research, the reliability of the scale was estimated at the Cronbach's alpha of 0.52, which was at a medium level using face and content validities. Another tool of the research was APS, which was designed by Weed et al. applying a series of MMPI-2 items. This scale contains 39 items and is scored similarly to AAS. However, this questionnaire was constructed and normalized based on individuals with only alcohol, substances other than alcohol or both alcohol and substance addictions. Items were typically scored based on the alternatives that were more selected by substance abusers. Raw APS scores were turned into linear t scores using MMPI-2 normal data. In this regard, APS re-test reliability coefficient (with one-week interval) for male and female subjects in the normal MMPI-2 sample was 0.69 and 0.77, respectively (14). In Iran, the reliability of this scale was reported at 0.52 by Minouei (14). Similar processes were performed to evaluate the reliability and validity of the scale. In this regard, the reliability of the scale was reported at 0.51.

It should be noted that the necessary licenses were applied before data collection and implementation of the research by the researcher and colleagues because this was a research project approved by Zanjan University of Technology with the code of A-11-911-2. Following the obtaining of licenses from the research deputy of the university and relevant authorities of other schools, objectives and processes of the research were explained to students and any questions in this regard were answered. In the next stage, questionnaires were distributed among students, who were asked to accurately fill the

surveys and return them to the researcher. Following that, the questionnaires were evaluated and incomplete surveys were eliminated from the study. An exclusion criterion for questionnaires included lack of responding to three or more item in each of the three scales. Eventually, a total of 284 questionnaires were assessed due to lack of return of 20 surveys and elimination of 11 scales. Data analysis was performed in SPSS version 22 using Kolmogorov-Smirnov test (to evaluate the normal distribution of the data), Pearson's regression coefficient and multiple regression for inferential statistics based on estimation level of variables. In the descriptive section, statistical analyses (e.g., frequency and percentage) were used along with tables and diagrams.

Results

In this research, a total of 284 subjects were included, 159 (59%) of whom were female and 120 (42%) were male. Most of the subjects were within the age range of 18-22 years. In terms of field of study, the highest frequency was allocated to the students of the field of medicine (N=103).

Table 1: Frequency distribution (number) in terms of demographic variables of study

variable		Frequency	Frequency percentage
Gender	Girl	159	55/9
	Boy	120	42/1
	No response	5	2
Total		284	100
Type of accommodation	Native	103	36/2
	Non-native	174	61/3
	No response	7	2/5
Total		284	100
Age	18-20	106	37/3
	21-23	94	33/2
	24<	37	13
	No response	47	16/5
Total		284	100
Field of Study	medical	103	36/3
	Dental	66	23/2
	Nursing	77	29/2
	surgery room	38	13/4
Total		284	100

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Demographic characteristics of the subjects are presented in Table 2. As observed, mean self-efficacy, as well as addiction potential and acceptance scores were 61.62, 17.49 and 5.38, respectively.

Table 2: Descriptive indexes of research variables

Row	Variable	Minimum	Maximum	Mean	Std. Deviation	Variance
1	Efficacy	34	71	62/61	53/9	89/90
2	Addictive talent	9	36	49/17	34/4	88/18
3	Accept addiction	2	13	38/5	64/1	69/2

According to Table 3, a significant relationship was observed between self-efficacy of subjects and addiction potential (r=-0.281, P=0.001) and acceptance (r=-0.316, P=0.001).

Table 3: Pearson correlation test for independent and dependent variables

Variable predictor	variables criterion	correlation coefficient	Significance level
Public self-efficacy	Addictive talent	-0/281	0/001
	Accept addiction	-0/316	0/001

As observed in Table 4, self-efficacy significantly predicted addiction potential and acceptance, in a way that 28% and 30% of addiction potential and acceptance were predicted by self-efficacy of students, respectively.

Table 4: Multiple regression for predictor and criterion variables

Variable predictor	Variables criterion	B	Beta coeff	T-value	Sig
Public self-efficacy	Addictive talent	-0/13	-0/281	-4/91	0/001
	Accept addiction	0/089	0/3	-5/282	0/001

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Discussion

This study aimed to determine the relationship between general self-efficacy and addiction potential and acceptance among students of Zanjan University of Medical Sciences. Two primary hypotheses were assessed in the current research. The first hypothesis involved the proving of the relationship between self-efficacy and addiction potential, whereas the association between self-efficacy and addiction acceptance was the topic of the second hypothesis. Given the normal distribution of the data, Pearson's correlation coefficient was used in the first hypothesis in order to determine the association between the mentioned variables. According to the results, a significant relationship was observed between self-efficacy and addiction potential of students of Zanjan University of Medical Sciences. Therefore, this association is approved. On the other hand, given the fact that the correlation coefficient was negative, it could be concluded that this association was reverse, meaning that increase in a variable led to decrease in the other factor. Moreover, results of linear regression model demonstrated the prediction of 28% of addiction potential by self-efficacy. While high self-efficacy score was indicative of favorable self-efficacy, a high score in addiction potential was interpreted as high potential for addiction, which was not favorable. The general meaning of self-efficacy is the belief of a person in his own abilities in the organization of incentives, cognition sources and control of a specific event. One of the essential aspects of self-efficacy is having the belief that the person can affect the outcomes of life events by controlling them, especially when faced with stressful phenomena. Having a sense of control over the situation is an important factor for compatibility in various situations. Self-efficacy is judgement about individual capabilities for organizing and implementing the necessary operational steps to manage effective life situations. On the other hand, addiction potential is extremely higher in those who are extrovert, adrenaline junkie and vulnerable. Moreover, these individuals have self-doubt, self-alienation and pessimistic attitudes toward others. Therefore, putting these two categories of features in front of each other could lead to a negative and reverse relationship between these two variables.

Our findings are somehow in line with the results obtained by Zamvalt, Lopez et al., Dolan et al., McClare et al., Sterling et al.,

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Abolghasemi et al., and Eskandari (6-9, 15, 12, 16). In the mentioned studies, a significant association was observed between self-efficacy or relevant factors and a tendency toward drug abuse. In a research by Sterling et al., a significant relationship was found between self-efficacy and smoking. On the other hand, preconceived notions and disruption of socialization were among the factors related to self-efficacy that had an impact on the tendency of young individuals in Tehran toward addiction. It should be restated that in the mentioned studies, there was a higher emphasis on the relationship between the use or lack of use of substance and self-efficacy and their statistical population included drug, alcohol or addicts and/or smokers. Meanwhile, the variables that are in fact the background of the tendency of students toward drug use were evaluated in the current research. Moreover, the statistical population of the mentioned studies included substance abusers, young individuals and school students, and the relationship among these variables and self-efficacy in students was not assessed.

In terms of the second hypothesis of the research, it could be stated that the relationship between self-efficacy and addiction acceptance was significant. Therefore, the association between self-efficacy and addiction acceptance of students is confirmed. On the other hand, with regard to reverse negative correlation coefficient between the two variables, an increase of one variable would lead to a decrease of the other variable. Furthermore, results of the linear regression test demonstrated that self-efficacy could predict addiction acceptance, in a way that 30% of the variance of addiction acceptance was predicted in students. Addiction acceptance is, in fact, the attitude of a person toward addiction. The more this attitude is pessimistic and conservative, the less is the possibility of addiction. Confirmation of this hypothesis led to the conclusion that individuals with high self-efficacy had more negative and pessimistic perspective toward addiction and this was based on the characteristics of efficient people. In this regard, our findings are consistent with the results obtained by Abolghasemi et al. (12). In the mentioned research, a significant and negative relationship was observed between self-efficacy and addiction acceptance.

Conclusion

According to the results of the current research, self-efficacy can predict addiction

potential and acceptance in students, in a way that about 30% of the total variance of the two variables is predicted by self-efficacy. Therefore, addiction potential and acceptance of students could be predicted by evaluation and determining their self-efficacy level.

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