

Abstract

Objective: Given that drug addiction is not merely related to a specific individual or group and few studies have investigated the role of anger in the development of drug addiction, this study was done to investigate the role of the components of anger in predicting addiction potential.

Method: A descriptive-correlation research design was used for the conduct of this study. To this end, the number of 309 medical students in Kermanshah city was selected using stratified cluster sampling; and completed Spielberger's State-Trait Anger Scale (STAS) and Zargar's Addiction Potential Questionnaire.

Results: The results showed that state anger, trait anger, anger expression-out (AXO), anger expression-in (AXI), the overall index for the expression of anger were significantly associated with addiction potential. Similarly, anger control-out (ACO), anger control-in (ACI) were correlated with addiction potential. In addition, the regression analysis results indicated that state anger and anger expression-in (AXI) together can predict 35% of changes related to addiction potential. **Conclusion:** State anger and anger expression-in (AXI) as subjective components of anger have a significant role in predicting addiction potential among medical students. Anger management programs for medical students, as the most important segment of the society in the field of public health, are recommended to assign more credit to these two components.

Keywords: Anger, State Anger, Anger Expression-In (AXI), Addiction Potential, Medical Students

The Investigation of Drug Addiction Potential among Medical Students: Role of Subjective Components of Anger

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**Research on Addiction
Quarterly Journal of Drug
Abuse**

Presidency of the I. R. of Iran
Drug Control Headquarters
Department for Research and Education

Vol. 9, No. 35, Autumn 2015
<http://www.etiadpajohi.ir/>

Introduction

Addiction is considered as one of the quadruple crises of the twenty-first century and as one of the major health, psychological, and social problems, as well as the main cause of high-risk behaviors (Farnam, 2013; cited in Soheili, Dehshiri & Mousavi, 2015). It is noteworthy that addiction has involved 2.5 percent of students due to various psychological and social problems (Bahadori Khosroshahi & Khanjani, 2003; Sarrami, 2012, cited in Soheili, Dehshiri & Mousavi, 2015). According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (2014), American Psychiatric Association defines substance use disorder as a set of cognitive, behavioral, and physiological symptoms that show the person continues drug use despite significant problems associated with drugs. Drug dependence can be seen in all professions, educational levels, and socioeconomic classes and it is not as merely limited to an individual or a specific group (Mostafaei, Hosseini & Jenaabadi, 2014).

As per the estimates of the United Nations Office on Drugs and Crime, 3.4 percent of the world's population or 4.7 percent of the world's population over 15 years are suffering from substance abuse (Matinnejad, Mousavi & Shams Efsandabad, 2009). The history of phenomenon in Iran also goes back to a few hundred years ago (Yassini, Ardakani, Banaei-Boroujeni & Dastjerdi, 2013). To date, numerous studies have been carried out about the dangers of addiction, the factors effective in its incidence, and secondary prevention. Moreover, some theories have been raised in the primary prevention that examine risk factors in the emergence of addiction. Similarly, addiction potential theory states that some people, in case of the availability of the conditions, are prone to addiction while others are not (Gendreau & Gendreau, 1970). Newcomp & Richardson (2000) introduced social-cultural environment, biological factors, interpersonal factors, and psycho-behavioral factors as predictor variables of addiction. In the meantime, psycho-behavioral factors entail a wide range of variables, including anger and aggression. Anger is defined as a type of emotion that can be stimulated in different ways and may affect different aspects of physical and mental health. Study of this emotion raises awareness and perception of people's feelings and helps them more effectively recognize and overcome their emotions (Spielberger & Reheiser, 2009). According to Spielberger's view (1999; cited in Lapa, Aksoy, Certel, Özçelik & Çelik, 2013), anger experience can be categorized in two main components, namely state and trait anger. State anger is a psychobiological state that contains one's subjective feelings of turns, while trait anger is defined as an individual difference that emerges in a range of situations in case of failure. Based on the results of the studies done by Giancola (2000); Hoaken & Pihl (2000); and Sharma, Suman, Murthy & Marimuthu (2011), strong anger is generally associated with lower quality of life and incidence of risky behaviors, such as drug addiction and alcohol abuse. In drug users, the emergence of anger can be the consequence of various factors, such as

the toxic effects of drugs on the central nervous system, pathological changes in the brain, mental and behavioral disorders, and changes in the hierarchy of individual values (Ilyuk, Gromyco, Kiselev, Torban & Krupitsky, 2013). The studies done by Giancola et al. (2002); Hoaken & Stewart (2003); and Ilgen & Kleinberg (2011) consider anger as one of the consequences of addiction. Previous studies have addressed the role of anger in the incidence of addiction in the general population and generally have focused on secondary prevention. This is so while it seems that the general population, especially the student population are at risk of addiction potential. Medical students will constitute the main elements of the medical staff of health centers in the near future. This population is considered one of the most important populations and, thereby, the incidence of long-term trauma, including addiction in this population can even endanger the health of a wide range of the general population. Hence, it is obvious that the identification of addictability risk factors in this group is of importance. Thus, the high rates of addiction prevalence and its associated health problems have made it inevitable to study risk factors in different groups, especially in students (Mostafaei, et al., 2014). Accordingly, the present study aimed to investigate the predictive role of anger components in addiction potential.

Method

Population, sample, and sampling method

A descriptive-correlation research design was used for the conduct of this study. The statistical population of the study consisted of all the bachelor's students or medical students of Kermanshah University of Medical Sciences in the academic year 2014-15. This population consisted of 2500 female students and 1000 male students. Random cluster sampling was used for the selection of the participants. In this regard, the required proportion of each gender for inclusion in the sample was first calculated due to the heterogeneous distribution of male and female students. In other words, according to Cochran's sample size formula, 225 female and 95 male students (total of 320 participants) were selected as the sample. Then, depending on the sample size required of any gender, four faculties were selected out of the seven faculties and 16 classrooms were randomly selected across all academic disciplines and classrooms of the faculties. Among the selected participants, five female and five male students were excluded because of unwillingness to participate in the research and the questionnaires of the study were handed in to the other students. The researcher administered the questionnaires after providing the necessary explanations about how to answer the questions and providing the necessary guarantee of the confidentiality of the responses. It should be noted that the questionnaires in the study were given to the students and they were requested to carefully answer all the questions. Due to the distortion of one of the completed questionnaires, the

number of 309 questionnaires (220 questionnaires filled by female students and 89 questionnaires filled by male students) was finally analyzed. The criteria for the inclusion of the participants in the sample were as follows: aged from 18 to 35 years, no history of failure in higher education, and a desire to participate in the study. In addition, the delivery of flawed or incomplete questionnaires was the criterion for the exclusion of participants from the study. For the conduct of this study, the approval from the university ethics committee was also received.

Instrument

1. Spielberger's State-Trait Anger Expression Inventory (STAXI-2): This questionnaire contains 57 items, which are placed in six scales, five subscales, and one anger expression index - overall index for the expression and control of anger. In the second version of the questionnaire that was used in this study, three scales of trait anger, anger expression-out, and anger expression-in have been left unchanged from the first version. This inventory has been made up of three parts, including state anger (questions 1-15: feelings of anger, a desire for verbal expression of anger, desire for physical expression of anger), trait anger (Questions 16-25: mood angry and angry reactions), and the incidence and control of anger (questions 26-57: anger expression-out, anger expression-in, anger control-out, anger control-in). Each of the statements of this questionnaire is graded using a four-point Likert scale. It is noteworthy that the statements of the first part of the test are graded using one of the four alternatives, not at all, somewhat, moderately so, and very much so. However, the statements of the second and third parts are responded using these alternatives: almost never, sometimes, often, and almost always. It takes participants 12 to 15 minutes to complete the questionnaire. Khodayarifard, Spielberger, Lavasani & Zardkhaneh (2013) calculated the reliability and validity of this questionnaire in Iran and reported Cronbach's alpha coefficients between .60 and .93 for all the subscales. In addition, test-retest reliability of the questionnaire was obtained within the range of .58 to .93. Content validity of the scale was assessed against the subscales of NEO-Five Personality Factor test and was reported between .48 and .68, which is suitable.

2. Addiction Potential Questionnaire: This scale was constructed by Weed & Butcher in 1992. Iranian version of the scale was constructed by Zargar, Najarian & Na'ami (2008) with respect to the psychosocial status of Iranian society. Active addictability and passive addictability constitute the factors of this scale. It contains 41 items, among which five items are lie detector. Each question is scored on a continuum from zero (strongly disagree) to three (totally agree). Construct validity (correlation coefficient of .45 with scale SCL-25) and the criterion validity of the scale have been reported appropriate. Cronbach's alpha coefficient of the questionnaire was also obtained equal to .90 (Zargar et al., 2008).

Results

The mean and standard deviation pertaining to the age of the sample group were 20.7 and 2.60 years, respectively.

Table 1. Descriptive statistics of the variables and correlation coefficients of anger components with addiction potential

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>Addiction Potential</i>	
			<i>r</i>	<i>Sig.</i>
State Anger	22.88	6.93	.569	.0005
Trait Anger	20.49	5.63	.383	.0005
Anger expression-out	14.68	3.42	.368	.0005
Anger expression-in	16.33	3.33	.317	.0005
Anger control-out	22.15	4.47	-.149	.005
Anger control-in	22.40	5.24	-.175	.001
Overall index for the expression of anger	34.47	11.44	.340	.0005
Addiction Potential	10.09	8.45	1	-

As it can be observed in the above table, state anger, trait anger, anger expression-out, anger expression-in, and overall index for the expression of anger are positively correlated with addiction potential. On the other hand, anger control-out and anger control-in are negatively associated with addiction potential. Stepwise regression analysis was used to predict the addiction potential based on anger components. The results of this analysis are presented in Table 2. In the first step, state anger entered the equation and, then, anger expression-in was added to it in the second step, which totally accounted for 35% of the variance in addiction potential. Regression coefficients of the final step are presented in the table below.

Table 2: Regression coefficients of addiction potential based on anger components in the final step

<i>Predictors</i>	<i>B</i>	<i>β</i>	<i>t</i>	<i>Sig.</i>
State anger	.70	.57	11.98	.0005
Anger expression-in	.39	.15	3.07	.002

Discussion and Conclusion

The present study was done with the aim of examining the predictive role of the components of anger in addiction potential. The results showed the existence of a significant relationship between all components of anger and addiction potential. This finding is consistent with those of the studies done by Mostafaei et al. (2014) and Hajihassani, Shafiabadi, Pirsaghi & Kianpour (2012). According to the findings of the studies done by Giancola (2000), Hoaken & Pihl (2000), Ilgen & Kleinberg (2011), Sharma et al. (2011), Ilyuk et al. (2013), Stewart, Levin-Silton, Sass, Heller & Miller (2008), and Kelly, Stout, Tonigan, Magill & Pagano (2010), anger as one of the negative emotion components is correlated

with school dropout, delinquency and criminal behavior, psychopathology, public health problems, and a wide range of psychiatric disorders. On the other hand, addiction and addiction potential are also significantly associated with psychiatric disorders (Quinn, Rollock & Vrana, 2014). High degree of anger can be associated with perceived social support and weaker self-concept (Quinn et al., 2014), suicide attempts (Daniel, Goldston, Erkanli, Franklin & Mayfield, 2009), and substance abuse (Cecen, 2006). Park et al (2013) argue that anger is more common in people with lower socio-economic status because they are more likely to experience failure during their lifetime. This failure may result in many unpleasant consequences such as anger and violence, delinquency, and homicide (Cecen, 2006). Such anti-social behaviors, which include a wide range, can underlie the emergence of drug addiction in any population. People with these characteristics are generally weak in metacognition and this component also has a significant impact on addiction potential (Hajloo, Sadeghi, Babayi Nadinloei & Habibi, 2014).

The results also showed that state anger and anger expression-in could be effective dramatically in anticipation of addiction potential. State anger is a psychological state that encompasses a person's subjective feelings (Lapa et al., 2013) and anger expression-in refers to the suppression of anger expression and inner feelings. According to Gray's theory, behavioral inhibition system, which is responsible for restrained behavior in response to threat and punishment (negative affect), affects one's sensitivity to punishment and causes the person to be sensitive to the potential punishment and avoid it (Erdle & Rushton, 2010). Similarly, anger as a negative emotion can occasion unfortunate social consequences. In such situations, the presence of state anger or anger expression-in in the form of behavioral inhibition system can solve this problem. This situation well explains why only these two components can predict addiction potential among all the components. Another issue is how state anger and anger expression-in can predict addiction potential. As Spielberger asserts, both of these are regarded as subjective components of anger (Lapa et al., 2013). Anger expression-in is strongly influenced by social norms such that the category of social norms that disappoints one from the full expression of anger can dramatically affect the situational expression of anger. Consequently, this situation and actual inhibition of anger facilitate the emergence or the aggravation of physical disorders (Brosschot & Thayer, 1998). Burns, Quartana & Bruehl (2011) argue that those people with high levels of anger who have to somehow suppress and prevent thoughts and emotions associated with their anger may show more vulnerability against future detrimental stimulations. This vulnerability and tendency to develop the disease can receive physical and mental aspect. In the meantime, the availability of drug addiction potential and emergence of addiction actually seem probable.

One of the limitations of this study was the age of the sample since the first-year students were selected as the sample, but students in higher years were not

selected. It is recommended that all medical students be evaluated in future studies. In addition, in this study, samples were taken only from medical students; therefore, the generalization of the results to other non-medical students should be made with caution. Hence, it is recommended that some studies be conducted in the field of anger management skills training on medical students as the most important segment of society in the field of public health.

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