On the Effectiveness of Social Problem-Solving in Self-Control, Self-Efficacy and Impulsivity among Students with Addiction Potential

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Abstract

Objective: The present study aims to evaluate the effectiveness of social problem-solving in self-control, self-efficacy and impulsivity in students with addiction potential. **Method:** An experimental research design with pretest-posttest control group was employed for the conduct of this study. For this purpose, 50 high school students with addiction potential were identified from Meshkinshar high schools through Addiction Potential Scale and were randomly divided into control and experimental groups. Self-control, self-efficacy, and impulsivity scales were completed by students before and after social problem-solving training. The experimental group received eight training sessions of social problem-solving and the control group received no intervention. **Results:** The results showed that social problem-solving training leads to the increase of self-control and self-efficacy and the reduction of impulsivity in students with addiction potential. **Conclusion:** These results suggest the effectiveness of social problem-solving training in psychological variables among the individuals with addiction potential. Therefore, it is recommended that this training be used to prevent addiction in schools.

Keywords: social problem-solving, addiction potential, self-control, self-efficacy, and impulsivity

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Introduction

Adolescence is an important developmental period that is associated with the process of identity formation. Some part of this developmental process is risk-taking that is manifested in the form of unhealthy sexual behavior, alcohol consumption, smoking, and the use of other drugs. Epidemiological studies suggest that cigarette smoking, alcoholic beverages, and other substances have increased dramatically in recent decades among adolescents in different societies (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2014). The related studies conducted among Iranian adolescents also indicate an increase in their tendency to use drugs. In a research conducted on high school students in Karaj, the most frequently used substances for all students during their lifetime were respectively: a) Light substances, including hookah (53%), cigarette (24.8%), liquor (13.6%); b) heavy substances, including ecstasy (2%), opium (2%), cannabis (1.1%), crystal (0.4%), crack (0.4%), and heroin (0.2%). The relative mean value of all groups and their distribution were significantly higher in males (Alayi, Kadivar, Mohamadkhani, Sarrami & Alaei, 2011).

Self-control is one of the psychological variables that is related to drug use. Griffin, Scheire, Bianca, Grenard, & Botvin (2012) showed that self-control in adolescents has a supportive effect on risky behaviors and reduced alcohol consumption; and low self-control has a significant relationship with negative outcomes, such as drug abuse, depression, and obesity (Otten, Barker, Maughan, Arseneault, & Engels, 2010). Self-efficacy is another variable that is associated with the tendency to drug use. Control of drug use is associated with increased self-efficacy, which appears as the ability to withstand drug use in high-risk conditions (Connor, Gullo, Feeney, Kavanagh, & Young, 2013). Ibrahim, Kumar, & Bahaman (2011) found that self-efficacy leads to the elimination of addictive behaviors and reduces the relapse into substance abuse, and results in a complete recovery of the effects of substance use.

Impulsivity has a critical role in the development and progress of substance abuse. Dependence on drugs plays an important role in impulsive responses as a predictor of risk factors for substance abuse disorder (Voon et al., 2014). Verdejo-García, Lawrence, & Clark (2008) showed that impulsivity is positively associated with vulnerability to addiction. Pourkord (2009) conducted a research on high school students and showed that there was a significant relationship between impulsivity and tendency to substance use. Various coping approaches have been widely used to prevent and improve the mental health of these individuals. One of these approaches is the problem-solving training approach that can be effective in the increased mental health of sufferers and treatment of some psychiatric disorders. Social problem-solving training nurtures natural systems for controlling social and emotional behaviors (Barbey et al., 2014). D'Zurilla (2004; cited in Gullo, & Dawe, 2008) defined social issues as a cognitive-behavioral process for the identification of effective solutions to the specific problems that people encounter in everyday life. This process makes

available a variety of potentially effective responses to cope with problematic situations and increases the chance of choosing the most effective response from these alternative solutions. According to D'Zurilla's model, problem-solving outcomes in the real world are largely determined by two relatively independent processes, namely tendency to problem and problem-solving. Many scholars believe that improper patterns in the processing of social information, social decision-making strategies, and social reasoning play a major role in the formation of non-compromise (Becker-Weidman, Jacobs, Reinecke, Silva, & March, 2010). The use of social problem-solving training can lead to the management of critical needs, communicative skills and conflict resolution, increased social and communication skills, increased self-efficacy, self-management, and impulsivity. Social problem-solving training in people with difficulty in self-control is an effective method in the management of their problems (Jean, & Lachance, 2015). Social problem-solving training increases self-efficacy in individuals (Koolhaas, Groothoff, Boer, Klink, & Brouwer, 2015). In addition, the defect in response Inhibition creates some problems in problem-solving, and inefficient social problem-solving methods can increase risk behaviors (Williams, Daros, Graves, MC Main, Links, & Ruocco, 2015). Therefore, this research seeks to answer the basic question of whether social problem-solving training affects students' attitude towards drugs, self-control, self-efficacy, and impulsivity of the students with addiction potential.

Method

Population, sample, and sampling method

The research method used in this study was an interventional and experimental type of pre-test/post-test with control group. The male high school students (first and second grades) of Meshkinshahr in the academic year of 2012-13 constituted the statistical population of this study (approximately 2000 people). The research sample consisted of 5 high schools of Meshkinshahr that equaled a total of 500 people who were selected by cluster sampling method. At first, several classes were selected randomly and the Addiction Potential Scale was administered to the students of selected classes. Then, 50 students were selected from among the ones with a high addiction potential score (the cut-off score was 50 and above) and were randomly assigned to two groups, i.e. experimental group and control group (each group included 25 participants).

Procedure

The social problem-solving skills were taught to the experimental group while the control group did not receive any training. The experimental group regularly participated in the training course for eight 75-minute sessions. Within a one-week interval, both the experimental and control groups filled out the three questionnaires pertaining to self-control, self-efficacy, and impulsivity again. A brief summary of the sessions is presented in Table 1.

Table 1: Summary of group problem-solving training sessions

Objectives	Activities
First session First objective: understanding the goals of the group, creating communication and empathy; second objective: providing guidance for members' participation and conducting the pre-test	Introduction of the program, group leader, his/her education, and received degrees; specification of the goals and procedure of the group sessions; placement of emphasis on group rules and active participation in the sessions; and pre-test implementation
Second session Objective: getting familiar with the problem-solving skill and its stages	Definition of problem-solving; definition of coping and its varieties; group discussion on the members' coping methods; and practical assignment
Third session Objective: problem definition and formulation	Provision of a hypothetical example; familiarity with the definition of problem-solving methods; familiarity with the precise and objective definition of the problem; and practical assignment
Fourth session Objective: creating and producing multiple solutions	Familiarity with brainstorming technique; familiarity with the non-judgmental solutions; and practical assignment
Fifth session Objectives: Evaluating the profits, losses, advantages, and disadvantages of solutions and choosing one solution among them	Teaching how to recognize the applicable solutions from the non-applicable ones; teaching the two-column technique; checking the profit and loss of solutions, and choosing the best solution
Sixth session Objectives: evaluating the effects and consequences of the solution and determining the effectiveness of the chosen solution	Implementation of the selected solution either through role play or implementation between two sessions; review and evaluation of the effects of the implemented strategy; provision of feedback and correction of the selected strategy if needed
Seventh session Objectives: Practicing problem-solving steps	Provision of an example by the therapist or members; identification and definition of the problem; provision of solutions; review of the benefits and losses of the solution; selection of the most appropriate option; and provision of feedback and correcting the solutions if necessary
Eighth session Objectives: Practicing problem-solving steps	Provision of an example by the therapist or members; identification and definition of the problem; provision of solutions; review of the benefits and losses of the solution; selection of the most appropriate alternative; and provision of feedback and correcting the solutions if necessary

Instruments

1. Addiction Potential Scale: The subscale of addiction potential from Weed, Butcher, McKenna, & Ben-Porath's questionnaire (1992) was used to measure addiction potential. This questionnaire has been extracted from the revised version of the Minnesota Multiphasic Personality Inventory and has also been standardized in Iran. (Minouee & Salehi, 2003). The original version of the Addiction Potential Scale contains 39 questions. Weed et al. (1992) reported that

there is a high common variance between Addiction Acknowledgment Scale and Addiction Potential Scale and their correlation was equal to 0.57. Bahadori Khosroshahi & Khanjani (2013) have reported the Cronbach's alpha of this scale to be equal to 0.78. In addition, Graham (2000) reported the retest reliability of this questionnaire equal to 0.89 and 0.84 for male and female samples, respectively.

2. Self-Controlling Revised Scale: This scale has been developed by Grasmick, Tittle, Bursik, & Arneklev (1993). It contains 24 items that are used to measure individual self-control status. The respondent responds to the items on a 7-point Likert Scale (1 = strongly agree, 7 = strongly disagree). Spencer (2005) reported the coefficient of internal consistency of this scale equal to 0.92 using Cronbach's Alpha method, and Piquero, Gibson, & Tibbetts (2002) reported this coefficient equal to 0.84. Allahverdi, Heidarinia, Kazemnejad, Shafiee, Azad Fallah et al. (2005) reported the alpha coefficient of 0.80 for this scale by conducting a research on high school students in Tehran.

3. Self-efficacy Questionnaire: This questionnaire was developed by Sherer, Maddux, Mercandate, Dunn, Jacobs, & Rogers (1982) and consists of 17 items that determine the different levels of individuals' public self-efficacy. Each item is scored on a five-point scale from 1 to 5. Sherer et al. (1982) reported a relatively high reliability coefficient for this scale. Cronbach's alpha for the self-efficacy scale has been reported equal to 0.86. Keramati (2001) obtained the value of 0.85 for the Cronbach's alpha of this tool. Asgharnejad, Ahmadi, Farzad & Khodapanahi (2006) reported the reliability of 0.64 to 0.76 for the dimensions of the scale and 0.83 for the whole scale.

4. Barratt Impulsiveness Scale (Edition. 11): This questionnaire has been constructed by Barratt, Stanford, Kent, & Felthous (2004). This questionnaire has a high correlation with Eysenck's Impulsivity Inventory, and the structure of the collected items in it is indicative of the dimensions of accelerated decision-making and the lack of reflection. The questionnaire has 30 items, which are responded to based on a 4-point scale. In Iran, Ekhtiari, Rezvanfard & Mokri (2008) reported the reliability of the scale using the internal consistency (Cronbach's alpha method) to be equal to 0.84 for the whole scale and to range from 0.43 to 0.78 for its subscales. In terms of validity, the correlation of this scale was calculated with Zuckerman Sensation-Seeking Scale and Eysenck's Impulsivity Inventory where the results were reported to range from 0.40 to 0.60.

Results

In demographic statistics, 8% of the students in the experimental group through family, 4% and 4% of families through one of the friends were familiar with drugs or alcohol.

In the control group, 8% through family, through the neighborhood of 4% and 28% through friends are familiar with drugs or alcohol. 8% of students

participating in the research were willing to experiment with drugs or alcohol, while 92% had no such desire.

Table 2. Descriptive statistics of variables to separate the groups and types of tests

Variables		*Control group*		*Experimental Group*	
		Mean	*SD*	*Mean*	*SD*
Self-control	Pretest	59.75	6.02	63.64	4.34
	Posttest	59.84	4.66	67.16	4.06
Impulsivity	Pretest	85.24	8.04	87.92	12.99
	Posttest	82.64	12.63	70.64	10.94
Self-Efficacy	Pretest	69.52	8.98	76.04	9.05
	Posttest	67.92	14.28	93.28	4.1

To examine differences between groups for increasing self-control, self-efficacy and decrease impulsivity by Solving Training should be used univariate analysis of covariance. Results of Levene's test for equality of variances showed that all variables studied, there was equality of variances ($P<0.05$). Covariance analysis results are presented in the table below.

Table 3: Results of univariate analysis of covariance to determine effectiveness of training social problem solving on studied variables

Variables	*Some of Square*	*F statistic*	*Sig.*	*Eta*	*Statistical power*
Self-control	588.08	28.57	0.0005	0.37	0.99
Self-Efficacy	6962.77	61.73	0.0005	0.56	1
Impulsivity	1698.15	11.98	0.0005	0.20	0.92

As can be seen in the above table, there is significant differences in all variables. In other words, self-solving training can increase self-control of experimental participants. The impact of this intervention on increasing of self-control is 0.37.It means 37% of the variance in scores related to the impact of the intervention .Statistical power of 99% also showed high statistical accuracy. The effect of this intervention on increasing the efficacy is 56%. Statistical power 1 indicates high statistical accuracy. And the effect of this intervention on reducing impulsivity is 20%. Statistical power of 92% showed high statistical accuracy.

Discussion and Conclusion

The aim of this study was to investigate the effectiveness of social problem-solving in self-control, self-efficacy and impulsivity among students with addiction potential. The findings of this study showed that social problem-solving training leads to increased self-control. In other words, social problem-solving training has significantly increased self-control in the experimental group compared with the control group. This finding is in line with other research findings (Jean, & Lachance, 2015; Dehghani & Dehghani, 2014; Koolhof, Loeber, Pardini, & D'Escury, 2007). To interpret this result, one can argue that social problem-solving training leads to an increase in self-control through the following measures: increasing the efficiency of effective changes in important therapeutic courses in comparison with alternative programs,

combining behavioral-cognitive techniques in the lifespan, facilitating motivational and coping skills in order to make continuous changes in life, replacing basic skills patterns, training new ways of coping with failure and of using supportive systems, and increasing commitment to therapeutic programs (Rang & Marlat , 2008). The program of life skills training is a multi-component preventive intervention that focuses on the psychosocial empowerment approach and emphasizes the training of resistance skills and self-control skills in the face of substance use and problem-solving within the framework of individual and social skills training model. Social problem-solving training improves self-control and, consequently, leads to the betterment of the psychological compatibility, the promotion of interpersonal relationships, and high performance in academic assignments (Botvin & Griffin, 2010). Self-governed metacognitive strategies in the area of social problem-solving enable students to take control and dominate the issues and problems to a larger degree and to evaluate events as challenging. When they encounter unpleasant events, they think carefully about how to cope with them, how to be more aware of different solutions, and how to evaluate them. They should adapt themselves to issues and adjust and modify their social issues in accordance with their goals and needs (Arabzadeh, Kadivar, and Delavar, 2014).

The results also showed that social problem-solving training has led to the increased self-efficacy. This finding is consistent with other research findings (Koolhaas et al., 2015; Giovazolias, & Themeli, 2014; Ebrahim et al., 2011). To explain this finding, one can say that people with addiction potential have low levels of self-efficacy, self-esteem, and assertiveness. Therefore, social problem-solving skills enable them to increase their self-efficacy and self-esteem and reduce their drug use tendency. Social problem-solving training leads to an increase in addicts' self-efficacy through appropriate social approvals, increased self-esteem, the resolution of problems in the right way, and the increase of personal efficiency by proving their ability, and production of success pathways (Shank & Gan, 2006). People with low levels of self-efficacy decrease their effort and endeavor when faced with difficulty, and they soon turn to lousy solutions. Moreover, the direct relationship between self-efficacy and problem-solving assessment shows that students with self-reliant abilities use deep and complex metacognitive strategies to learn the content of the lesson, and this is why they enjoy getting engaged in challenging topics. The feeling of self-efficacy is characterized by emotional coping strategies, such as denial, neglect, self-reliance, reappraisal, and reconciliation coping strategies; on the other hand, high self-efficacy is often associated with problem-oriented coping strategies (Nasri, Saleh Sedghpour & Cheraghian Radi, 2014).

Furthermore, the results of this study showed that social problem-solving training can lead to the reduction of impulsivity. This finding is also consistent with other research findings (Williams et al., 2015; Storebo, Skoog, Dammd, Thomsen, Simonsen, & Gluud, 2011; Ryb, Dischinger, Kufera, & Read, 2006).

This finding can be accounted for by the fact that social problem-solving training improves individual experiences and problem-solving, as well as the effective, communicates with other substance abusers among the addicted individuals. Impulsivity is related to the information processing style. Researchers believe that impulsive individuals have a fast processing information style and experience difficulty in response inhibition. Additionally, some scholars argue that impulsivity may be a barrier to learning in the early years of transformation (Kertzman, Kagan, Vainder, Lapidus, & Weizman, 2013). Therefore, social problem-solving training can reduce cognitive-social deviations and inadequate problem-solving skills and can accurately predict the consequences of behaviors. This training also leads individuals not to look for hostile signs in the social stimuli and not to consider the signs of fear in interpreting the meaning of other people's behavior. In addition, such individuals do not relate the others' behaviors in ambiguous situations to hostile intentions and come to a true understanding of their own aggression level. Impulsive people embark on taking immediate actions regardless of their effects. These people have difficulty in controlling their own responses and prefer immediate rewards to delayed outcomes (Alvi, Tanvir, Wars, Muzaffar, & Marium, 2013). Therefore, problem-solving training teaches these people to reflect on their behavior before taking action; in other words, problem-solving training helps them slow down the speed of their mental processing in interpersonal relationships and life issues compared to the pre-training. Based on the causal model of drug use in the adolescents who are exposed to risks; self-efficacy and self-control skills (the adolescent's ability to solve, decide, and manage stress), and social skills, such as assertiveness mediate the relationship between self-concept and substance use. Therefore, the students with a positive self-concept can better use their personal and social abilities to cope with problems and avoid using drugs. Thus, they turn to alcohol consumption, smoking, and the use of other substances to a lesser degree. Being equipped with problem-solving skills and effective decision-making and their training to susceptible adolescents, stress control skills, and assertiveness skills have an inverse relationship with alcohol consumption, cigarette smoking, and the consumption of other drugs. As these individual and social capabilities are stronger, individuals will have a lower level of tendency to use drugs. The inclusion of solely male students in the research sample, the conduct of training by the researcher, and the lack of any follow-up after training were among the limitations of this study. Based on the results of this study, social problem-solving training can be used to promote self-control and self-efficacy, reduce students' impulsivity reduction, and prevent addiction. Therefore, it is suggested that other psychological variables also be investigated.

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