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Original Article

The effectiveness of planned behavior training on tendency to addiction, self-restraint and risk-taking of university students

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Abstract

Introduction: This study aimed to assess the effectiveness of planned behavior training on tendency to addiction, self-restraint, and risk-taking of university students.

Materials and Methods: The statistical population of this study concluded all undergraduate student teachers in Mashhad city in the academic year 2019-2020. Among them, 24 cases were selected by simple random sampling and were assigned in two groups of planned behavior training (12 cases) and control group (12 cases). The data collected using the Readiness Scale for Drug Abuse (Zargar, 2007), Mohammadi et al. Risk-Taking Questionnaire (2007), and Weinberger and Schwartz Self-Restraint Questionnaire (1990). Data analyzed using SPSS 22 software, repeated measures analysis of variance, and Bon-Ferroni post hoc test.

Results: The results showed that planned behavior training ($P< 0.01$) had significant effects on tendency to addiction, self-restraint and risk-taking of students. These effects were permanent in two-month follow-up.

Conclusion: Based on the findings, it seems that planned behavior training is effective in preventing addiction in youth population.

Keywords: Addiction, Planned behavior, Risk-taking, Self-restraint

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Introduction

Substance addiction is a disease that is referred to as a social disease that affects individuals' physical and mental health and its materials and spiritual losses are not less than war. This issue has become a social issue in all countries for many years, and in recent years both in our country and globally, it has reached alarming proportions (1). Based on available findings, addiction is one of the four global crises, and it is the primary social crisis in Iran that is closely related to other aspects of economic, cultural, etc. (2). Kandahari and Dehghani (3) in their research showed the prevalence of addictive Substances among students of Shahid Sadoughi University of Yazd, respectively including hookah 15.9%,

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Cigar 14.4%, opium 2.8%, alcohol 2.8%, cannabis 1.1%, psychedelic pills 1.2%, and heroine 0.8%. Also, the motivation for the tendency to use Substances in most cases of recreation and entertainment (47.4%) and the most essential factor of the tendency to it (42.98%) is unemployment. Presently, the prevalence rate of narcotics among school students is 2.1% and among university students is 4.1% (anti-narcotics headquarters, 2019). Early prevention of addiction and high-risk behaviors such as alcohol, smoking, and other illicit Substances is one of the most important health challenges and psychosocial harms many societies face (4). According to this trend, the results of the studies show that the university and school are the best places to provide preventive innervations and psychosocial empowerment of students. In recent years several school-based and university-based privations programs have been designed and implemented, and its effectiveness in preventing Substance abuse has been scientifically evaluated (2). Students are among those affected by prevailing socio-cultural and economic conditions in society. In many cases do not have the necessary ability to deal with problems and challenges, and they are exposed to much harm and moral and behavioral abnormalities (1). Prevention requires understanding the nature of addiction and the characteristics of people who have a strong desire to use Substances.

Addiction is a biological, psychological, and social disease. Research has shown that personality traits are essential cognitive factors in addiction and tendency to Substances (1,3). Substance dependence disorder is a set of cognitive-behavioral and psychological symptoms that has a pattern with recurrence and occurrence of tolerance withdrawal and forced actions (5). Substance addiction can be considered a brain injury associated with cognitive deficits (6). One of the significant cognitive deficits involved in addiction can be considered deficiencies in decision-making processes, especially risky decision-making in Substance users (7). Decision-making disorder (especially risky decision making) can be considered one of the most fundamental mechanisms underlying obsessive behaviors, the impulsivity of addiction (8). In recent years, various models have been proposed in the etiology, prevention, and treatment of Substance abuse. These models have explored a wide range of genetic, psychological, familial, and social underlying Factors (1). It is fundamentally believed that social and environmental factors play an essential role in the first experience of consumption, while psychological and biological factors play a more critical role in addiction disorders (9). Although the results of the meta-analytical study of Safarieta1 (10) indicate a more prominent role of environmental factors compared to individual and family factors in the context of addiction, Asghari et al. (11) research points to the critical role of the family system and self-restraint. Self-restraint indicates the degree to which a person can distinguish between intellectual and emotional processes. In other words, achieving a degree of emotional independence allows one to make autonomous and rational decisions in emotional situations without being whelmed by the emotional atmosphere of those situations (12). Students are exposed to addiction due to their emotional age, and three categories of addiction, self-restraint, and risky decision-making as the three psychological categories of Substance addiction or reluctance can be examined in more depth (6,10).

One of the essential activities in educational strategy is informing different people in the community about the causes of substance abuse, the effect of Substances, and the physical and psychological risk of Substance use. The best place to do such preventative programs is in educational centers such as schools and universities. Psychological education is one of the essential tools and methods to prevent addiction problems. The most effective curricula are based on theory-based approaches and studies rooted in behavior change patterns (12). Among the various theories, the theory of planned behavior is one of the most widely used and influential theories. This theory assumes that the intention to perform a behavior is influenced by attitudes toward behavior, abstract norms, and perceived behavioral control. According to this theory, abstract norms, attitudes, and behavioral control are apparent characteristics of prominent beliefs (beliefs that have recently taken root in mind). According to the theory of planned

behavior, these norms will affect a person's intention to perform a behavior. Attitude is the psychological evaluation of behavior for good or bad, safe or unsafe, and so on. Attitude directly affects a person's intention to perform a behavior. In addition to these two constructs (attitudes and abnormal norms), conceived behavioral control (reflects the individuals' perception of the degree of control they have over the target behavior) is related not only to intention but the actual performance of target behavior. Behavior is the direct emergence of intention; which expresses a person's desire or plans to perform the intended behavior (13). Research and interventions using the theory of planned behavior in addiction and Substance abuse have a long history. Tavousi et al. (14), using this theory to predict Substance abuse behavior in adolescents, showed that the model constructs describe28% of the behavior variance and 36% of the variance of intention. The application of this theory by Mirzaei Alavijeh et al. (15) could also explain the 17.9% variance of fathers' behavior in preventing their children's Substance addiction. In order to predict Substance abuse in adolescents, Bashirian et al. (16) also used the theory of planned behavior and showed that attitude, abstract norms, and behavioral control are strong predictors of Substance use intention. Huang et al. (17) demonstrated by using the theory of planning behavior in the form of a protest prevention program in first-year high school students in Taiwan, Life skills, attitudes, abstract norms, and perceived behavioral control of students receiving the intervention program improved significantly after the implementation of theory-based training.

The three personality variables of addiction, risky decision-making (risk-taking), and self-restraint are among the important personality variables in psychological well-being, the tendency to use Substances, and impulsive behavior (14). Therefore the importance of paying attention to the category of prevention in youth (18), the existence of dangers in the university environment, and the need for prevention courses in the student period (1) the importance of three personality variables addiction, risky decision making (risk-taking) and self-restraint in impulsive behavior (14) and the effectiveness of cognitive-behavioral therapies (In this study, the planned behavior of Eisen and Shiffin (3)), persuaded us to choose this topic:

"Evaluation of the effectiveness of planned behavior training on addiction, risk-taking, and self-restraint".

Materials and Methods

The statistical population of this study included male students of Farhangian University of Mashhad during 2019-2020. To determine the research sample size using Cohen's formula (1986) with an effect size of 0.1 and a statistical power of 0.7, the minimum volume for quasi-experimental research was obtained for each group of 12 people. In this study, 30 people were selected through convenient sampling. Then the participants were divided into two groups randomly. After performing the pre-test, the experimental group was affected by the independent variable (planned behavior training). Then post-test was performed in both groups. Also, in order to evaluate the reliability of the treatment, two months after the end of the sessions, addiction, self-restraint, and risk-taking tests were retaken from all groups. Finally, analysis of variance with repeated measures was used to compare the results of the experimental group and control group. This research has been registered in Bojnourd Azad University with the code of ethics (IR. IAU.BOJNOURD.REC.1399.01). Inclusion criteria; Being a student at Farhangian University, high score of addiction and risk-taking and low self-restraint from the cut line in research questionnaires, no history of Substance use or withdrawal, no psychological problems and disorders, commitment to participation until the end of the research and exit criteria the study considered reluctance to participate in intervention session for specific reasons such as illness in this study. In this study, ethical considerations such as respect for human rights, human dignity, and diversity of beliefs and opinions, avoidance of any discrimination, responsibility for professional duties satisfaction of all participants, the confidentiality of information obtained from the student-teachers, the names of individuals were not mentioned in any of the research documents, and the use of all groups of research interventions was observed

after the completion of the research process. Exclusion criteria; Absence from attending more than two consecutive sessions, Substance use or Substance addiction, and disease were among the criteria for exclusion from the study. Also, in this study, there is no conflict of interest in any field of data collection, interpretation, and dissemination.

Research instruments

A) The Readiness Scale for Substance Abuse (Zargar, 2007): Weed et a1. (1992) developed the addiction readiness scale. This questionnaire is the Iranian scale of addiction readiness standardized by Zargar (2006) according to the psychosocial conditions of Iranian society (19). This questionnaire assists with two factors and has 36 items plus five lie detector items. First, the construct validity of the scale was calculated to be 0.45 by correlating it with the 25-item scale of the clinical list of clinical signs, which is significant. The validity of the scale was calculated by Cronbach's alpha method of 0.90, which is optimal (20). Of course, each question is scored on a continuum from zero (completely disagree) to 3 (completely agree). This scoring method will be reversed in questions 12, 15, 21, and 33. This questionnaire has a lie detector factor that includes questions 12, 15, 21, and 33. To obtain the total score of the questionnaire, the whole scores of each question (except the lie scale) must be added together. This score will range from 0 to 108. Higher scores indicate that the respondent is more prepared for addiction and vice versa.

B) Mohammadi Risk-Taking Questionnaire (2007): The Iranian risk scale (21) was used to assess the risk-taking. In this scale, 38 items were used to measure vulnerability to high-risk behaviors such as violence, smoking, Substance use, alcohol consumption, sexual intercourse and behavior, and heterosexual orientation. Respondents agree or disagree with these statements on a five-point scale from strongly agree (=5) to strongly disagree (=1). The Validity of the Iranian Risk Scale (IARS), KMO test equal to 0.949 and was at a very desirable and satisfactory level, and Bartlett Sphericity test was statistically significant(X2=16789/044, df=703, P= 0.001). Also, the validity of IARS and its subscales was at an appropriate level, so that Cronbach's alpha for the overall scale was 0.938, smoking0.931, Substance use 0.906, alcohol consumption 0.907, relationships and sexual behaviors were 0.856, and heterosexual orientation was 0.809.

C) Self-restraint Questionnaire: The self-restraint scale is a 30-item questionnaire that assesses the level of emotional inhibition and the ability to suppress anger. This test was developed by Weinberger &Schwartz in 1990 and is one of the scales of the Weinberger compatibility Questionnaire (22). The self-restraint scale has a broad scale and four subscales. The subscales of this test, which are similar but distinct structures, are: Anger suppression (questions 30, 28, 22, 20, 10, 6), impulse control (questions 27, 24, 18, 15, 12, 8, 3, and 2) consideration of other (questions 26, 19, 16, 11, 7, 5, and 1) and responsibility (questions 29,23,21,14,13,9,4). Subjects on a 5-point Likert scale express their agreement or disagreement with each of the statements, and the subject's score is calculated by adding the points of the statements for each subscale (20). In each of the subscales, the highest score (35 for the two subscales: anger suppression and obedience to others and 40 for the two subscales: impulse control &responsibility) indicates the high level of the subscale and the ability subject to suppress his anger. Also, the lowest score (7 or 8) indicates the low level of the desired subscale and the inability of the subject to control his anger (21). The highest score in this test is150 and indicates severe emotional inhibition, and the lowest score is 30, which indicates weak emotional inhibition. Weinberger (1991) reported the correlation coefficient of this scale in a sample of 386 urban students as 0.91. Reliability of their testing at a two-week interval (n=49), 0.89, and in a seven-month interval (n= 337), reported 0.76 (21). Rostami (22) mentioned the content and visual validity of this questionnaire as 0.82 and its reliability by retesting among 35 people as 0.86.

Procedure

First, addiction, self-restraint, and risk-taking tests were taken from Farhangian University students, and among the people who achieved the highest score, they were randomly selected from a list of 30 people and replaced in two groups (15 people), entirely randomly. The experimental groups used 11 One-hour schema therapy sessions. At the end of the training sessions,

addiction, self-restraint, and risk-taking tests were retaken from all three groups. The intervention program of this research is taken from the program of intervention behavior of Eisen and Schaffen (2013). According to this intervention method, a person's intention is determined by three factors: the person's attitude to behavior, mental norms, and perceived behavioral control. One's attitude toward a behavior is influenced by behavioral beliefs that refer to one's desired attitude toward that behavior. The second predictor, or subjective norms, refers to perceived social pressure to perform a behavior determined by what is important to others. The third predicate refers to the degree of perceived behavioral control, easily or difficultly perceived during the behavior. The treatment protocol for the sessions is as follows:

Table 1. Summary of Planned Behavior Sessions (Eisen and Scheffen, 2013)

Sessions	Goals	Content of sessions
1st session	Introduction and introduction of the program	Say the goals of the classes, set the time and date of the meetings
2nd session	General concepts	Includes definition of addiction, familiarity with different types of substances, reasons for drug addiction, body physiology and brain and mental dependence on substances
3rd session	Beliefs, family	Topics of misconceptions about the physiological-psychological-social effects of substances, social and individual costs, the definition of a healthy person and the views of the family, society and social groups
4th session	Situation	Identifying high-risk situations and skills in dealing with high-risk situations of transformational roots and their domains
5th session	life skills	Life skills and courage learning
6th session	Emotional self-awareness	Identify and deal with negative moods, replace logical and positive thoughts with negative thoughts and moods, deal with stress and increase self-confidence
7th session	Self assessment	Identify weaknesses, fears, communication problems, past positive and negative experiences along with providing opportunities for collective encouragement and appropriate feedback
6th session	Execution of the questionnaire	Take a post-test

Results

The subjects included 24 male student-teachers, who were assigned to two groups of 12 (group schema therapy and control group). Comparison of groups according to the age of the subjects showed that 34.4% were 20-18 years old, 25.6% were 20-22 years old, and 40% were over 22 years old. The Chi-square test results showed that the groups were homogeneous in terms of age (c2=0.95, *P*> 0.05).

The mean age of the subjects in the planned behavior group is higher than the control group. However, to a minimal extent (0.02), the one-way analysis of variance showed no significant difference between the group in terms of age (*P*= 0.71), and the groups were homogeneous in terms of age. Descriptive indicators of addiction, self-restraint, and risk-taking scores obtained in three pre-tests, post-test, and follow up are presented in Table 2.

Table 2. Descriptive indicators of addiction, self-restraint and risk-taking in three stages

Research stage	Variable	Group	Average	Standard deviation	Min	Max
Addiction	Pre-test	Planned behavior	90.17	3.380	85	95
		witness	88.92	3.630	83	94
	Post-post	Planned behavior	52.33	5.015	43	60
		witness	89.25	3.137	84	96
	Follow-up	Planned behavior	51.92	4.757	44	60
		witness	89.67	2.570	86	96
Self-restraint	Pre-test	Planned behavior	40.75	2.832	36	46
		witness	39.75	2.633	34	43
	Post-post	Planned behavior	78.58	2.811	73	83
		witness	40.33	2.348	36	43
	Follow-up	Planned behavior	77.75	2.050	74	80
		witness	37.41	3.627	35	45
Risk-taking	Pre-test	Planned behavior	167.75	5.529	156	178
		witness	166.67	5.314	157	177
	Post-post	Planned behavior	104.00	5.240	99	115
		witness	167.17	5.952	157	176
	Follow-up	Planned behavior	102.92	5.282	98	114
		witness	167.00	5.427	159	175

To answer these research hypotheses, repeated measures analysis of variance was used between the subjects of the planned behavior training group and the control group. The hypotheses were examined before performing the analysis. The results of homogeneity analysis of variances by test stages (P> 0.01) and also the assumption of Mauchly sphericity in the model of comparison of addiction, self-restraint, and risk-taking in the experimental and control groups were achieved (P> 0.01).

Table 3. Investigating between-groups differences in addiction, between schema therapy group and control group

	Source of changes	Total squares	df	Mean squares	F	P	Curve ETA square
Analysis of variance with repeated measures	Test	612.45	2	366.74	68.67	0.0001	0.87
	Group membership	156.74	2	78.37	14.67	0.001	0.49
	Test ×member ship	75.13	4	22.11	4.41	0.004	0.33
Bonferroni post-hoc test	Group	Pre-test – post-test		Pre-test – follow up		Post-test– follow up	Curve ETA square
		Mean difference	P	Mean difference	P	Mean difference	P
	Planned behavior	39.54	0.0001	40.01	0.0001	-0.31	0.17	0.88
	Witness	-0.25	0.25	-0.5	0.71	-0.25	0.99	0.09

The results of Table 3 show a significant difference between the planned behavior group and control group on addiction in terms of test, group membership, and the interactive effect of test and group membership (P< 0.01). The magnitude of the effect of change sources in creating differences is 0.87, 0.49, and 0.33. In addition, the result of the Bonferroni post-hoc test to compare the means according to the test steps in the planned behavior group and control group are given in Table 3. Based on the above, the first hypothesis of the research is confirmed. This means that planned behavioral training affects addiction and this effect of planned behavior persisted until two months after treatment.

Table 4. Investigating between-groups differences in self-restraint, between schema therapy group and control group

	Source of changes	Total squares	df	Mean squares	F	Significance level	Curve ETA square
Analysis of variance with repeated measures	Test	946.34	2	473.17	69.23	0.000	0.96
	Group membership	346.23	2	173.115	25.08	0.000	0.67
	Test ×member ship	98.25	4	24.56	3.57	0.007	0.41

		Pre-test – post-test		Pre-test – follow up		Post-test– follow up		
	Group	Mean difference	Significant level	Mean difference	P	Mean difference	P	Curve ETA square
Bonferroni post-hoc test	Planned behavior	-28.22	0.000	-32.30	0.000	-0.2	0.32	0.81
	Witness	0.08	0.99	-0.17	0.99	-0.23	0.97	0.03

The results of Table 4 show a significant difference between the planned behavior group and control group in self-restraint in terms of test, group membership, and the interactive effect of test and group membership ($P< 0.01$). The magnitude of the effect of change sources in creating differences is 0.96, 0.67, and 0.41. In addition, the result of the Bonferroni post-hoc test to compare the means according to the test steps in the planned behavior group and control group are given in Table 4. Based on the above, the second hypothesis of the research is confirmed. This means that planned behavior training affects self-restraint and this effect of planned behavior persisted until two months after treatment.

Table 5. Investigating between-groups differences in risk-taking, between schema therapy group and control group

	Source of changes	Total squares	df	Mean squares	F	Significance level	Curve ETA square
Analysis of variance with repeated measures	test	786.98	2	393.49	75.23	0.000	0.97
	Group membership	165.23	2	82.615	15.79	0.001	0.66
	Test ×member ship	87.32	4	21.83	4.12	0.006	0.34

		Pre-test – post-test		Pre-test – follow up		Post-test– follow up		
	Group	Mean difference	Significant level	Mean difference	Significance level	Mean difference	Significance level	Curve ETA square
Bonferroni post-hoc test	Planned behavior	27.49	0.000	28.3	0.000	0.34	0.22	0.76
	Witness	-0.32	0.14	-0.76	0.45	-0.34	0.28	0.08

The results of Table 5 show a significant difference between the planned behavior group and control group in risk-taking in terms of test, group membership, and the interactive effect of test and group membership ($P< 0.01$). The magnitude of the effect of change sources in creating differences is 0.97, 0.66, and 0.34. The result of the Bonferroni post-hoc test to compare the means according to the test steps in the planned behavior group and control group are given in table 5. Based on the above, the third hypothesis of the research is confirmed. This means that planned behavior training affects risk-taking and this effect of planned behavior persisted until two months after treatment.

Discussion

The present study investigated the effectiveness of planned behavior training on addiction, self-restraint, and risk-taking. The research hypothesis was "the effect of teaching planned behavior training on student-teachers addiction, self-restraint and risk-taking". The results showed that in the post-test and follow-up, the difference between the planned behavior training group and control group on addiction, self-restraint risk-taking were significant. The results of this research are in line with the results of Roholamin (23), Sarzehi et al. (24), Bahador et al. (6), Mohammadi Zaidi and Pakpor Hagi Agha (18), Madden et al. (25), and Katharsis et al. (26).

At the end of the study, each planned behavior training positively affected reducing students' risky behaviors. Madden et al. (25) showed that neuropsychological and psychological interventions are effective for addiction decision-making. For this purpose, they used cognitive therapies and psychological and behavioral therapy (emergency management and planned behavior). Their research showed that planned behavior training, emergency management, and cognitive behavioral therapy could change decisions in addicts. The problem of addiction is the result of a process in which several factors are affected (6).

Bashirian et al. (16) state that we use self-restraint theory to understand addictive behaviors. Self-restraint and volition depend on a limited resource, and when that resource is depleted, self-restraint is prone to failure. Researchers have shown that an essential subset of people who use Substances exhibit contradictory behaviors associated with a lack of behavioral inhibition, including high levels of anger and aggression (9).Also, people's anger with low self-esteem seems to be related to their risk-taking and addiction readiness. In general, it has been found that people with low self-restraint have optimistic risk estimates and express and prefer risky choices (10).

This study was an attempt to introduce a preventive method of planned behavior to prevent Substance abuse after changing attitudes (schema therapy) and behavior (due to changing schemas). Given that this study was performed only on boys, caution should be generalizing findings to other groups. However, due to the success of this method, it can be suggested that each of these methods be used more in preventive interventions. Also, considering the target community (youth and students), who are exposed to a variety of risk factors for Substance addiction, this method of preventive intervention in high schools and universities can prevent an increase in the tendency to use Substances in this group. Therefore, it is suggested that this research be carried out on a larger scale, including in other universities and higher education centers. It is also suggested that the theory presented in this study can be used in other organizations that work to prevent addiction in future research. Moreover, the reasons for its effectiveness should be examined. One of the limitations of this study is the use of the statistical population of male students, and also, considering that the sampling of this study is available and unlikely, a little caution should be exercised in generalizing the results. This research is considered cross-sectional research in terms of time horizon compared to continuous research has less or more predictive power.

Conclusion

Based on the findings, it seems that planned behavior training is effective in preventing addiction in youth population.

Acknowledgments

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