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THE EFFECT OF PROBLEM-SOLVING TRAINING ON STUDENT'S ALEXITHYMIA IN DORMITORY

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ABSTRACT

Students with alexithymia pick too difficult in identify and describe feelings. So, seems that the use of strategies to improve cognitive skills are effective in improving on alexithymia. The aim of this study is to determine the effect of problem-solving skills on students' alexithymia
Materials and Methods: 60students in a dormitory on the University of Iranshahr were enrolled on research population in experimental pretest-posttest study. They were randomly assigned between 2. Toronto Alexithymia Scale was used as data gathering scale, at start point, after 2nd session and 1 month after that. Intervention was four session for 8 hours with 1 weak interval (in a month), including problem-solving training.
Findings: based on our result problem solving caused to decrease alexithymia series (50/8 ± 11/4 in pretest to 45/9 ±8/3 in posttest and 43/6 ±8/2at endpoint). The average of alexithymia score in the control group in posttest and endpoint don't have significantly change than pretest post (p>0/005)
Conclusion: Since the problem-solving skills is effective, inexpensive manner to improve students' dormitories alexithymia, it is proposed to managers for enhance be addressed to enhance student health.

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Introduction

Alexithymia is one of the risk factors for different types of psychiatric disorders such as psychotic disorders that one of the most important consequences of it is lack of mental health [1]. Alexithymia is a construct that was proposed for the first time by Sifneos, and it involves inability for cognitive processing of emotional information and regulating the emotions. Alexithymia has three main characteristics of difficulty in identifying feelings, describing feelings, external orientation of thinking styles [2, 3 and 4]. In fact, alexithymia is associated with disorder of emotion regulation with early defenses,

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maladaptive coping styles, vulnerability against stress and psychological and physical symptoms [5, 6 and 7]. Without doubt, these consequences increase the vulnerability of people causing that the person cannot play his normal role in interpersonal and social systems [8]. In this regard, one of the groups that their health has an important role in society is students. One of the important functions of this period is to achieve independence and autonomy emerging in the form of the ability to decide independently and performing the tasks of life without relying on others [9]. However, students are faced with problems and stressors such as changing relations with family and friends, living in the dormitories, to cope with roommates, and new lifestyle. Problems caused by these factors could have a negative impact on personal and social coping resources and they can cause cognitive and emotional problems acts such as alexithymia for them [10]. The results show that about 19 percent of girls and 13 percent of boys are faced with emotional problems after entering the university [11] and the mean score of alexithymia among students has been reported 51.72 ± 9.54 (out of 100) and this mean in nursing students is 42± 11 that is worrying [12 and 13]. Since people with alexithymia use inefficient emotional strategies [4] and they are faced with difficulty in identifying and describing feelings [14] and emotions [4], it seems that using the strategies that improve the cognitive skills of people and help them in effective coping with stressful issues of life to be effective in improving alexithymia [15]. One of the interventions that help human in solving the internal and external problems is training the problem-solving skills [16]. Problem solving is a cognitive process, by which a person tries to provide a solution for a problem [17]. Problem-solving training is an intervention focuses on teaching problem-solving skills and attitudes. It involves five stages of 1-problem statement 2-collecting information 3. Development of hypotheses 4- testing the hypotheses 5. Final assessment and evaluation. The objective of using this method is to reduce and prevent mental pathology and to enhance health by assistance of people in better coping with all stressful issues in life. In fact, by using this approach, an individual learns to make use of a set of his effective cognitive skills to cope with problematic situations [18]. In addition, problem-solving training leads to reduced ineffective communication pattern and it strengthens communication patterns .Since the process of problem-solving is thoughtful cognitive-behavioral process guided by the person that helps him to identify his emotion in facing with problems and to choose the best solution among various solutions [19] and as alexithymia is a disorder in recognizing the emotions [3], it seems that training the problem-solving skills to leave impact on alexithymia of the students. Despite the importance of this issue, in an extensive study, no indexed study was found to assess the impact of training the problem-solving skills on alexithymia. Therefore, given the importance of problem-solving skills training to students who are main groups of specialists and managers in various scientific, technical and artistic areas in each country and due to absence of adverse effects and the cost-effectiveness of these methods, researchers of this study aim to find out if training the problem-solving skills has impact on alexithymia of dormitory students.

Methods and materials

The two-group experimental study was conducted with pretest-posttest design in June 2014 among dormitory students of Iranshahr University of Medical Sciences. The inclusion criteria of this study included willingness to participate in the study, living in one of the dormitories of the University of Iranshahr, lack of taking the drugs that affect the mind. The exclusion criteria of the study included unwillingness to continue participation in the study, participating in more than 10% of workshop times, participating in other workshops of problem-solving skills and transfer to other universities. After obtaining the approval of the Ethics Committee of the University and receiving the introduction letter from the School of Nursing and Midwifery and presenting it to authorities of the dormitory, the researcher collected the data. Subjects of the study included male and female students living in dormitories of Iranshahr University of Medical Sciences, who were randomly assigned into control and experimental groups based on registration number in the list (number of student, intervention group and control group) in both intervention and control groups were divided. The sample size of this study was obtained 21 people using the ratios formula and reliability coefficient of 95% and test power of 80%. Considering the possibility of subjects drop out of the study, 30 people in each group (60 people in total) were considered. Data were collected in three stages of pre-intervention, post-intervention, and one month after the intervention for control and intervention groups simultaneously. The tools used to collect the data in this research included demographic profile questionnaire and alexithymia scale of Toronto. Demographic profile questionnaire contains 12 questions about the academic and personal characteristics, which it was developed with respect to the objectives of the study and the study of the newest resources and related articles and consulting with supervisors and advisers. Alexithymia scale of Toronto is a test containing 20 items assessing the alexithymia of people in three subscales of difficulty in identifying feelings (7 items), difficulty in describing the feelings (5 items) and objective thinking (8 items). This scale is scored based on 5-point Likert from 1 (completely disagree) to 5 (completely agree). The lowest score obtained from this questionnaire is 20 and the highest score is 100. The higher score of this questionnaire indicates high alexithymia. Reliability and validity of Persian version of alexithymia scale of Toronto-20 have been confirmed by Besharat (2007) [20].Concurrent validity based on correlation (Pearson correlation coefficient) between total alexithymia and emotional intelligence scales (P <0/001, r = -0/78), psychological well-being (P <0/001, r = - 0.80), and psychological distress (r = 0/44, P <0/001,) were confirmed. In this study, content validity of the questionnaire was confirmed by 10 professors and CVR=0.81 and CVI=0.86 were obtained .The reliability of this scale was examined by Besharat (2007) using the test- retest method in a sample of 67 people in two turns in four-week interval, which correlation coefficients of its areas were obtained r=0.80 and r=0.87 indicating the reliability of the tool [21]. In this study, to determine the reliability of the tool, internal consistency was used that Cronbach's alpha coefficient was obtained 0.853. In the stage of pre-intervention, questionnaires were completed by

control and intervention groups. Then, the intervention was conducted according to the stages of the problem-solving skills in 4 sessions (1.5 h) at interval of one week in one of the school's classes by clinical psychologist for the intervention group in the form of lectures, group discussions and using the educational aids of boards and PowerPoint for the intervention group. Subjects of the study were divided into three groups (each containing 10) for intervention in the form of group discussion. In the first session, the educational method of problem-solving was explained simply for students and they were asked to state the issues that they are faced with them in dormitory life. This stage was performed using brainstorming and finally all the raised issues were classified in three psychological, interpersonal, and family areas and students were asked to determine the most important issues in priority. At the end of the first session, educational pamphlets related to dormitory life and educational method of problem solving was given for students to provide recommendations to solve their problems to participate in the second session. In the second session, subjects of the study were asked to state the best and the most appropriate solution to solve the problems in the psychological area. In the third session, in addition to keeping track of the status of solving the mental problems, research subjects were asked to express the best and the most appropriate solution to solve interpersonal problems. In the fourth session, in addition to keeping track of family issues of the students, the implemented solutions were followed up. Subjects of study were followed up one month after the intervention, and during this period, researcher contacted every two weeks by telephone with the participants in the intervention group and followed-up them regarding the educational program. After one month, the questionnaires were completed by subjects in both groups. To reduce the publication of information, test group was asked to avoid publishing the information until the end of study and the control group was ensured that CD of problem solving skills workshop will be given for them at the end of study. For data analysis, SPSS version 11.5 was used. The results of Kolmogorov-Smirnov test showed that quantitative variables of the study are distributed normally. For quantitative variables, mean and standard deviation were calculated. Comparing the pre-intervention and post-intervention in control and intervention groups (intragroup) was performed in terms of alexithymia by using analysis of variance with repeated values, and independent t-test was used to compare alexithymia between the two groups (intergroup).

Findings

The mean age of study subjects was 21.1 ± 1.7 years and their age was 18 to 26 years. Majority of subjects were male (53.2%) and single (98.3%). The mean number of their sisters and brothers was 5 and in terms of birth rank, 28.3% of the study subjects were the third child of the family. In addition, 91.7% of the subjects were studying at bachelor degree and rest of them was studying at associate degree and the majority of participants (20%) were in the second semester. The mean average of them was 16.4 ± 1.2. In terms of academic field of study, 66.7% of subjects were studying in the field of nursing, 25% of them were studying in midwifery, and 8.3% of them were studying in medical emergency fields. In terms of all background variables, significant difference was not found between the two groups (Table 1). The mean score of alexithymia in the intervention group reduced from 50.8± 11.4 in pre-intervention stage to 45.9 ± 8.3 in the post-intervention stage and 43.6 ± 8.2 in the stage of follow-up after one month that these changes were significant (p=0.000). In the control group, the mean alexithymia changed from 52.9± 12.2 in the pre-intervention stage to 55.4 ± 13.4 in post-intervention group and 53.9±10.9 in the stage of follow-up after one month that these changes were not significant ($p < 0.05$). Mean alexithymia scores in the stages of pre-intervention in two groups of control (P = 0.450), while this difference in the stage of post-intervention and follow-up after one month was significant (p=0.000). In addition, comparing the mean alexithymia in the pre-intervention stage and post-intervention stage and follow-up one month later in the intervention group (intragroup comparison) by analysis of variance with repeated measures showed significant differences among three stages (p =0.000). This test showed difference between pre-intervention stage and post-intervention stage, pre-intervention stage and follow up one month later stage and post-intervention stage and follow up one month later stage that it was descending ($p <0.05$). In the control group, the results of analysis of variance with repeated measures (intergroup comparison) showed that the mean alexithymia in the stages of pre-intervention and post-intervention and follow-up one month later was significantly different (p =0.355) (table 2). In the intervention group, the mean scores of the difficulty in identifying feelings, difficulty in describing feelings and thoughts with external orientation changed respectively from 17.3 ± 5.7, 12.8 ± 3.8, 20.8 ± 3.8 in the pre-intervention stage to 14.6 ± 4.2, 11.6 ± 3.7, and 19.8 ± 3.2 in the post-intervention stage and 13.5 ± 41, 10.5 ± 4.6, and 19.3 ± 2.1 in the follow-up stage that it was descending trend. These changes in identifying feelings in the stage of pre-intervention with post-intervention stage and pre-intervention stage with follow up one month later stage were significant. These changes were also significant for dimension of difficulty in describing feelings in the pre-intervention with follow-up one month later stage and post-intervention stage with follow-up one month later stage (p=0.000). In the control group, the mean scores in dimension of difficulty in identifying feelings, difficulty in describing feelings, and thoughts with the external changed respectively from 18.9 ± 6.5, 13.4 ± 4.0, 20.9 ± 4.4 in pre-intervention stage to 19.1 ± 6.1, 13.6 ± 4.0, 22.7 ± 8.3 in post-intervention stage and 19.1 ± 6.0, 13.9 ± 4.1, and 20.9 ± 4.5 in the follow-up one month stage that these changes were not significant ($p <0.05$). The findings of this study also showed that the mean scores for different dimensions of alexithymia in the pre-intervention stage were significantly different between intervention and control groups. However, these changes in the dimensions of difficulty in identifying feelings and difficulty in describing feelings were significant in post-intervention stage and follow-up after one month stage (table 3). The results of two-way ANOVA test showed that the change in alexithymia score in the pre-intervention stage and follow up after one month stage in the two groups was not significant in terms of background variables studied in this research ($p<0.05$).

Table 1. Comparison of background variables in problem solving and control group

Background variables		Groups		Test result
		Intervention	Control	
		N (%)	n (%)	
Gender	Male	14 (46.7)	18 (60.0)	Chi-square test 0.063=p
	Female	16 (53.3)	12 (40.0)	
Age (Mean±SD)		1±21/8	35/4 ± 6/45	Independent t-test 0.567=p
Marital status	Single	30 (100/0)	29 (96/7)	Fisher's exact test =0/688p
	Married	0 (0/0)	1 (3/3)	
Academic semester	1	8 (28/7)	2 (6/7)	Fisher's exact test =0/574p
	2	6 (20/0)	6 (20/0)	
	3	5 (16/7)	3 (10/0)	
	4	4 (13/3)	17 (10/0)	
	6	5 (16/7)	12 (40)	
	8	2 (6/7)	2 (6/7)	
Average (Mean±SD)		16/1±7/3	5/2 ± 4/65	Independent t-test =0/816p

Table 2. Comparison of mean alexithymia in dormitory students in two problem solving and control groups in the stages of pre-intervention, post-intervention, follow-up after one month

Stage	Group				Independent t-test results
	Control		problem solving skill		
	SD±mean	n	SD±mean	n	
pre-intervention	52/12±9/2	30	50/11±8/4	30	=0/709t =0/481p
post-intervention	55 /13±4/4	30	45/8±9/3	30	=3/28t =0/002p
follow-up after one month	53/10±9/9	30	43/8±6/2	30	=4/07t =0/000p
Test result	Analysis of variance with repeated measures p=0.355		Analysis of variance with repeated measures p=0.005		

Table 3. Mean scores of alexithymia in stage of pre-test, post-test, and follow-up in problem solving and control group

Variables	Groups)n=30(	time			Comparing the different stages in terms of t-Independent test results
		Pre-test	Post-test	Follow-up	
		mean ± SD	mean ± SD	SD ± mean	
Difficulty in identifying feelings	Problem solving skill	17/3±5/7	14/6±4/2	13/5±4/1	b, c
	Control	18/9±6/5	19/1±6/1	19/1±6/0	
Difficulty in describing feelings	Problem solving skill	12/8±3/8	11/6±3/7	10/5±4/6	b, c
	Problem solving skill	13/4±4/0	13/6±4/0	13/9±4/1	
Thinking with external orientation	Problem solving skill	20/8±3/8	19/8±3/2	19/3±2/1	-
	Control	20/9±4/4	22/7±8/3	20/9±4/5	

In the pre-test stage a=p<0.05 in post-test stage b=p<0.05 and in follow-up one month later stage c=p<0.05

Discussion

In the present study, the mean score of alexithymia in subjects in pre- intervention in the intervention and control groups was homogeneous, so the alexithymia difference in post-intervention stage and follow up one month later in the two groups can be considered as a result of intervention effect. Results showed that mean alexithymia in post-intervention stage in intervention group was 50.8 ± 11.4, that it was significantly lower compared to control group (55.4 ± 13.4). In addition, in the stage of follow up after one month, the mean alexithymia in intervention group was 43.6 ± 8.2, which it was significantly lower than that in the control group (53.9 ± 10.9). According to the findings of this study, the students' alexithymia was 51.8%. The alexithymia level of students in the study conducted by Makvandi et al. (2012) was 52.4% and it was 51% in the study conducted by Afshari et al (2013) [22 and 23], which they were consistent with the findings of our study. The high prevalence of alexithymia can be explained from cultural perspective. Our educational culture and teachings encourage the control of emotions and it can cause difficulty in expressing the emotions and increase in the score of alexithymia. On the other hand, subjects of this study were students living in the dormitory that factors such as being away from family, being roommate with of students from different cities and change in relationships of friends affect their emotions. The findings of this research showed that the mean score of alexithymia in intervention group significantly in the post-intervention stage reduced to 5% and it reduced to 7% in the stage of follow-up after one month. This reflects the positive impact of problem-solving skills training on alexithymia students living in dormitory. The findings of this study are in line with the findings of Christopher and Moran (Gary Christopher & Mary McMurran) (2008) [24]. Christopher et al examined the relationship between alexithymia, emphatic concern, goal management and problem-solving skills in male prisoners. Based on the findings of the study, those who had high alexithymia had lower problem-solving skills and they were not flexible in adopting new strategies in the face of new issues .In the process of problem solving training, learners are acquainted with their and others' needs and feelings, problematic situations, and different ways of solving them and use them [25]. Isazadeh et al (2011) conducted a study titled "the role of cognitive emotion regulation strategies and health public in alexithymia", which findings of this study showed that the use of s cognitive emotion regulation strategies can reduce alexithymia of individuals [26]. The findings of this study are in line with results of the present study in terms of the effect of cognitive strategies on alexithymia. However, in the our study, problem-solving skills were taught to students that it is a method to regulate the emotions and it reduces alexithymia by helping them in understanding and identifying their emotions and giving appropriate response to these emotions [26]. The findings of Dubey et al (2010), Meganck et al (2009), Connelly and Denney (2007), and Mattila et al (2009) showed that cognitive strategies and improving the quality of life decrease the alexithymia that this result is consistent with our study [27, 28, 29 and 30]. Cognitive disability disturbs the emotional and cognitive organizations of the person and it increases the possibility of using inefficient styles and it increases the negative experiences of the person. Therefore, when people feel that they have lower skill on situation, they interpret it negative and stressful, which it can lead to interpersonal problems such as the cold relationship and avoidance style in expressing the emotion and ultimately alexithymia [28]. However, problem-solving skill training teaches for people to use regular method to overcome their issues and it provides a method to cope with problems properly in future and to have more control feeling on issues and problems. People also by using this approach recognize the sources to cope with problems [31]. The findings of the research conducted by Leahy (2003) showed that those who are unsuccessful in

resolving the issue are more impulsive people and if they cannot find a clear solution immediately, they stop trying. In fact, the first step in all arguments is hesitating and thinking that in fact it refers to kind of control and management of emotions [32]. However, the process of problem solving facilitates coping with life challenges cognitively and emotionally and it improves the mental health level of them. In addition, the findings of the study conducted by Yi, Luo and Zhong showed that when adaptive behaviors of the person is greater, his alexithymia will be less and alexithymia has positive correlation with maladaptive styles of emotion regulation [33]. In fact, problem-solving is a cognitive-behavioral process enables the individual to discover effective strategies to cope or deal with problematic situations in everyday life [34]. In this intervention, finding a specific solution to a specific problem is not considered. It is important that as result of problem solving, an abstract principle or law to be obtained that can be generalized for other positions. Mattila et al (2009), Swart et al (2009), and Mehrabi Zadeh et al. (2010) concluded that people who have high score in alexithymia are faced with a variety of negative consequences since they have difficulties in regulating emotions and capability in emotion regulation is considered as one of the main factors of well-being and it plays an important role in coping with stressful life events. By successful regulation of emotions, problem-solving skills have good outcomes in the health-related behaviors and quality of life [30 , 4 and 35]. This study has limitations, which the most important of them are: 1. the research sample was limited to dormitory students making that the results of this study to be generalized only for this setting. 2-individual differences of students in being trained in problem-solving skill workshop, which tries to make groups homogeneous by randomly allocation of the intervention group and control group, 3-lack of complete control of information exchange between intervention and control groups that in order to reduce the publication of the information test group was asked to avoid publishing the information until end of the study and to provide content of problem-solving skills training workshop after the end of intervention, the control group was ensured so that the exchange of information to be controlled. It is recommended that a study consists of non-dormitory students from different fields of study at various educational levels to be conducted for generalizing the findings.

Conclusion

Since students are important group of each country that plays important role in future of the country and guiding other groups of the community toward perfection and objectives of the country, and as mission of the educational systems is the developing active humans, protecting and improving the health of students seems to be necessary. As findings of this study showed that training the problem-solving skills reduces the alexithymia of dormitory students, it can be used as applied, effective, and cost-effective strategy to promote the health for students.

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