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The Effectiveness of Problem-Solving Education on Perceived Stress of Mothers with Children with Special Learning Disabilities

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1. Abstract

Objectives: The purpose of this study was to determine the effectiveness of problem-solving education on perceived stress of mothers with children with specific learning disabilities in Tehran in 2019.

Methods: The method of this study was quasi-experimental with pretest-posttest design with control group. The statistical population of the study was all mothers with children with specific learning disabilities in Tehran. Using convenience sampling method, 40 mothers (20 for each group) were selected from mothers of children with special learning disabilities in Tehran and were randomly divided into experimental and control groups. The experimental group received 7 60-minute sessions of problem-solving training and the control group remained on the waiting list. Data were collected using Cohen's Perceived Stress Questionnaire (1983).

Results: Data analysis was done by SPSS 20 software in two parts: descriptive and inferential (covariance analysis). The results showed that the mean of experimental group decreased in perceived stress of mothers with children with specific learning disabilities compared to control group.

Conclusion: It can be said that problem solving training has been effective on the perceived stress of mothers of children with specific learning disabilities, so the results represent new horizons in clinical interventions and can be used as an effective intervention method.

2. Keywords: Problem solving; Perceived stress; Learning disability

3. Introduction

Specific learning disability is a neurodevelopmental disorder with biological origin that is the basis of disorders at the cognitive level and is associated with behavioral symptoms. Problems with learning are characterized by one of the following symptoms: 1) incorrect reading of words; difficulty in understanding meanings, spelling problems, difficulty in writing, difficulty in computing numbers and difficulty in understanding mathematics; 2) impairment in abilities affected by the person's chronological age, interfering with their academic, occupational, or daily activities; 3) These problems began during the school year; and 4) must not be interfered with intellectual disabilities, visual or hearing impairments and Other mental or neurodegenerative disorders, lack of proficiency in language teaching and psychological distress [1]. In a specific learning disorder, learning deficits in reading,

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writing and mathematics in DSM5 are identified as characteristics [2]. These disorders are usually caused by lesions of the central nervous system and have different manifestations depending on the lesion region [3]. According to this definition, learning disorder is defined as a neurological failure and also represents cognitive dysfunctions, such as comprehension, reading, writing and mathematics [4]. The negative effects of having a child with learning disabilities cause stress on family members, especially the mother, because the mother is the first person to be directly associated with the child. Feelings such as guilt, frustration and deprivation caused by the child's abnormality can cause the mother to be isolated and disinterested in communicating with the environment, as well as to increase stress and feelings of worthlessness and unhappiness in the mother. Stress is a serious threat that can lead to mental or physical illnesses or may have significant negative effects on a person's performance [5]. The perceived stress construct is derived from the concept of Lazarus and Folkman stress as a person's cognitive assessment of negative life events. Perceived stress is defined as the degree to which situations are assessed in the life of a stressor [6]. According to researchers, although some stress is good for relieving fatigue and low motivation, the persistence of stress-related symptoms may lead to impaired mental and physical health as well as reduced work and learning efficacy [7].

Stress is a specific relationship between the individual and the environment, in which case the individual assesses the environment beyond his or her own resources or endangering his or her health [8]. Stress can enter a person's life in various ways and is considered a neurological and physiological response and high levels of depression and anxiety are associated with a high level of vulnerability to stress [9]. In the field of treatment and health education, methods such as emotion regulation, response normalization and training in natural psychological responses to mothers of children with learning disabilities have all had significant effects. One of the less well-known interventions, especially regarding its impact on the target population of mothers of children with learning disabilities, is problem solving education. Problems arise when the barrier disadvantages our current state of affairs and problem-solving skill is to find a solution that removes the barrier and reaches the target [10]. In other words, the problem is finding the right way to achieve a goal that is not yet achievable [11]. The problem-solving method is actually an active learning method and consists of five stages: problem identification and definition, information gathering, preliminary conclusions, results testing, evaluation and decision making [12]. In fact, problem solving is a vital skill for living in the present age, requiring specific and purposeful strategies by which one defines problems, decides to adopt solutions and uses problem solving strategies and monitors them [13]. According to research of Fontanari, problem solving is an innovative cognitive-behavioral process by which one identifies or devises effective and adaptive strategies to deal with everyday problems [14]. Research has been done in this area, such as Van Aken in a study of the effect of problem solving on stress and showed that problem solving skills training especially in sensitive and important situations can be helpful in reducing stress [15].

Vorontsova et al. examined the effectiveness of problem-solving skills on mental health and depression and showed that this training method was effective in reducing depression and increasing mental health [16]. They also did research on the effectiveness of problem-solving training on anxiety, depression and distress [17].

The results showed that problem solving training can improve anxiety, depression and distress in individuals.

The present study can be fundamental and applicable. It will fundamentally clarify the fundamentals of

problem-solving training and its role in causing problems and conflicts and its impact on reducing perceived stress. Practically it is expected to reveal useful information to education practitioners, psychologists, counselors and other educators by revealing the impact of problem-solving education on perceived stress and improving family interactions. Therefore, given the importance of stress of mothers with children with learning disabilities and the effective role of problem solving on it and the lack of any intervention research into the relationship or impact of problem solving intervention therapy on the mentioned variables in the target community and the lack of research in this field, so the purpose of this study was to investigate the effect of problem solving training on perceived stress of mothers with children with special learning disabilities in Tehran and are going to find the effects of problem solving training on perceived stress of mothers with children with special learning disabilities.

4. Methods

The present study was an interventional study using pre-test and post-test design with control group and random assignment. The statistical population of the study was all mothers with children with specific learning disabilities who referred to counseling and treatment centers in Tehran in 2019. A sample of 40 individuals was selected by available and purposeful sampling method, 20 of which were in the experimental group and 20 in the control group. Inclusion criteria: having at least one child with a specific learning disability, selected from clients of counseling centers in Tehran, having at least 25 years of age. Exclusion criteria: No children with specific learning disabilities, selection of people other than clients of counseling centers in Tehran, under 25 years of age. The experimental group received 7 60-minute sessions of problem-solving training and the control group remained on the waiting list. The contents of the problem-solving training program sessions are presented in Table 1.

Table 1: Structure of problem-solving training sessions.

Sessions	Goals
First session	Familiarity with people and explanation of educational goals and definition of important variables and pre-tests.
Second session	Definition of simple problem solving and the importance and application of problem-solving skills in different situations to better understand individuals. Provide examples of the need for problem solving and its impact on life.
Third session	Adopt a problem-solving attitude and define the problem in terms of individuals, identifying the problem and prioritizing it. Determining one's role in problem solving and explaining problem solving attitude.
Fourth Session	Learn how to deal with problems, various ways of dealing with emotion-focused or problem-focused with example, defining the problem and having the confidence to solve it, choosing the right solution from the solutions, and evaluating the results of the solution.
Fifth meeting	Brainstorming, role-playing and generating feedback of individual from problem solving and brainstorming and then choosing the right solution and evaluating the results.
Sixth Session	Decision making and its methods for selecting the solution in a step-by-step manner and answering the questions posed by the individual considerations and also the conclusion.

Seventh Session	Examine the variety of offered solutions and choosing of a problem by each individual and provide the appropriate solutions and summarize the best solution for the problem. Practicing a variety of problem-solving techniques and summarizing and performing the best solution. Practicing variety of methods of solving problems and summarizing the post-tests.

Data analysis was performed by SPSS20 software in two descriptive and inferential parts (covariance analysis).

Table 2: Descriptive information of perceived stress by phase of measurement in groups.

Variable	Factors	Statistical index	pre-exam	Post-test
Perceived Stress	Examination Group	Mean	33.94	26.45
		Standard deviation	4.64	4.29
		Median	35	27.50
		Mode	35	28
	Control group	mean	32.95	33.10
		Standard deviation	4.61	4.35
		median	33	32.5
		mode	33	32

Table 3: Covariance analysis test for the first hypothesis.

Statistical index of variables	SS	df	MS	F	sig	Ita coefficient
pre-exam	160.35	1.00	160.35	10.82	0.002	0.23
Group	494.63	1.00	494.63	33.37	0.001	0.47
Error	548.40	37.00	14.82			
Total	1150.98	39.00				

Cohen's Perceived Stress (1983): This questionnaire was prepared by Sheldon Cohen in 1983 and has 3 versions of 4, 10 and 14 items used to measure general perceived stress over the past month. The 14-item form assesses thoughts and feelings about stressful events, controlling, overcoming, coping with stress and experiencing stress through examining responses. Each question is awarded a score of never (0), almost never (1), sometimes (2), sometimes (3), most often (4) on a five-point Likert scale. Questions 4, 5, 6, 7, 9, 10 and 13 are reversed (never = 4 to most times = 0). A cut-off score of 21.8 and a higher score indicate greater perceived stress. Cronbach's alpha for this scale was obtained at 0.84, 0.85 and 0.86, respectively [17]. Reliability was calculated 0.81 using Cronbach's alpha coefficient.

5. Results

In this section, a statistical description of the data is provided, then the possible differences of the groups in the variables at different stages of the evaluation are examined. Descriptive information of the perceived stress scale is presented in Table 2 in the pre-test and post-test in the experimental and control groups.

As can be seen, the mean of the experimental group in the post-test phase decreased compared to the pre-test. Based on the results presented in Table 2, it can be concluded that implementation of problem-solving training has reduced perceived stress in mothers of children with specific learning disabilities. Table 3 shows the covariance analysis test for the research hypothesis.

The results in Table 3 show that by eliminating the effect of the pre-test variable and calculated coefficient F, it is observed that there is a significant difference (P <0.05) between the adjusted mean scores of participants' perceived stress scores according to group membership in the "test and control" group at the post-test stage. Therefore, according to the modified averages in the results of Table 3, it is concluded that problem solving training in the experimental group had more effect on the perceived stress of mothers of children with specific disabilities compared to the control group. The magnitude of this effect of "practical meaningfulness" was 0.47, meaning that 47% of the total variance or individual differences in perceived stress of mothers of children with specific learning disability concerned with solving problems.

6. Discussion

The results showed that there was a significant difference between the adjusted averages of the participants' perceived stress scores according to the "test and control" group membership in the post-test. The results of this research is in line with researches performed by Black [17], Van Aken and Flynn [18]. Van Aken examined the impact of problem solving on stress and showed that training problem solving skills, especially in sensitive and important situations, can be helpful in reducing stress. The results of research showed that problem solving skills training and emotion management were significantly effective in reducing anxiety and aggression in students. Black showed that problem solving training can decrease anxiety, depression and distress in patients. Flynn in a study showed that problem solving training reduces anxiety and depression in individuals.

In explaining this finding, it should be said that in therapeutic sessions it was attempted to convey the concept that when a person encounters a problem or impediment, normal reactions that result from associations of meaning or conditional reflection cannot help the person to solve the problem. In this case, one should use his own past experiences and make his information to solve a problem. In other words, remember and review what you have learned in the past, identify information, skills and habits in the field of the project and clarify how they relate to each other and to the problem being discussed, thereby extracting appropriate solutions from them and attempting to solve the problem. Therefore, problem solving sessions have also affected mothers with children with specific learning disabilities. Stress management training and problem solving have been effective in reducing the stress of mothers with disabled children. The experimental group, which benefited from problem solving training, showed a decrease in stress compared to the control group. Also, this type of training has been effective in reducing stress and anxiety and increasing motivation in students.

Another factor to illustrate the above findings and mentioned in the meetings is that there is a difference between cases when a person finds a solution to a problem and decides to implement it and when it fails to do when one is not approached for fear of execution problems and is thought to be in vain. One of the most important reasons for this misconception is that executive problems themselves require separate thinking and decision-making and when we begin to engage with them, we find that as we previously thought, they are inaccessible. They are not solvable and we just need to spend more time to solving them, which has all reduced stress. Every research has its own limitations and our research also is not an exception. Although the quality of life and stress of mothers with children with specific learning disabilities can also affect sociological variables of social class and cultural issues, all demographic factors could not be controllable doe to sampling constraints. Measuring the follow-up phase after the post-test was not possible due to time constraints, which is another limitation of this study. Therefore, based on the findings of the study and doe to the

results of the statistical analysis as well as the effectiveness of mothers with children with specific learning disabilities, it is suggested that psychotherapists use problem-solving group training to improve attitudes to reduce psychotic disorder, disappointment and stress in mothers with children with specific learning disabilities.

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