The Effect of Training Problem-Solving on Maladapted Behavior of Pre-School Children

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Abstract

**Purpose**: The purpose of this study was to investigate the effect of problem solving on preschool children’s maladaptive behavior.

**Methodology**: The method of this study was practical and quasi-experimental with pretest-posttest design with control group. The statistical population of this study was preschool children of Kermanshah kindergartens. Twenty-four of these eligible volunteer children were selected using available sampling method and were assigned to experimental and control groups. Gresham & Elliott (1990) Social Skills Rating Scale was used to collect the data. Pre-test was administered to both groups, then the experimental group received 16 sessions of problem-solving skills training Intervention sessions were held 3 times a week with the presence of a trainer and an assistant for 45 minutes. The control group did not receive targeted intervention. Then, post-test was performed on both groups. After four months, follow-up tests were performed for both groups to evaluate the reliability of the results over time. Data analysis was performed using multivariate analysis of covariance at the significant level 0.05 and Spss24 software.

**Findings**: The results showed that there was a significant difference between preschool children in maladaptive behavior (internal and external behavior) (P<0.01).

**Conclusion**: Maladaptive behavior in preschool age is a normal behavior and a developmental characteristic that many parents consider this behavioral model to be age-appropriate and thus does not form a cycle of maladaptive behaviors in parents and children.

1. Introduction

For many children, attending preschool is an opportunity to interact with their peers in their first out-of-family presence in the community, which positively interacts with teachers and develops their social skills, which in turn enhances their ability Participation and empathy (Yoleri, 2014). But it should be noted that this presence can be accompanied by behavioral problems, an emotion that is one of the most common psychological issues in childhood and adolescence. Such behavioral problems are referred to as situations in which emotional and behavioral responses differ with cultural, age, and ethnic norms, such as on individual performance, self-care, social relationships, personal adjustment, classroom behavior, and adjustment. It has a negative impact on the environment (Kakabaracee & Moradi, 2017).

The emergence of behavioral problems during the early years of childhood is more likely to place children on inappropriate developmental pathways. This is especially true with regard to externalizing behavioral problems, which will lead children to continue to have problems as well as poor academic achievement. If the initial behavioral problems do not diminish, they will open their way to future problems (including mental health problems, substance use and even delinquency). Children who develop behavioral problems in their early years of life are more likely to face developmental challenges such as antisocial behavior, learning problems and the risk of emotional behavior disorders in school and adulthood (Sutherland & et al., 2018). In this regard, according to the latest classification in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, children with externalizing behavior problems have difficulty controlling their behavior and emotions and exhibit behaviors such as coping disobedience and impulsive disorder. These children at home and school exhibit common behaviors such as inattention, maladaptation, disobedience, stubbornness, emotional immaturity, impulsivity, aggression, or internalized maladaptive behaviors such as anxiety, loneliness, and depression (Ganji, 2018).

Since one of the characteristics of maladaptive individuals is problem solving skills, many researchers believe that understanding and applying problem solving skills is an important aspect of life and even a prerequisite for mental health and behavioral adjustment (Holin, 2004, quoting Shokohi Yekta, Akbari Zardkhaneh & Sohrabpour, 2013). In the field of Cognitive-Behavioral Therapy a variety of therapeutic approaches have been proposed to deal with these behavioral maladaptive disorders. Accordingly, one of the therapeutic approaches in this field is problem-solving training that provides a variety of alternative and potential responses to problematic situations and enables the selection of the best and most effective answers. Increases the alternative (Gellis & Kenaley, 2008, quoted by Keshavarz & Kakavand, 1986). Given that problem-solving has gained widespread public interest as an important component of today's modern world. In fact, upgrading children's problem solving skills is one of the biggest challenges in educational psychology and is one of the main goals and demands of the education system (Greiff & Holt & Funke, 2013). Problem solving is one of the most important thinking processes that helps people to cope effectively with life's challenges and challenges and plays an important role in their mental and social health (Keshavarz & Kakavand, 2017).

Problem-solving skills include the ability to plan, organize, act, evaluate, make decisions, and summarize. This skill has a significant impact on success in life (Erozkan, 2013). Every day, there are some types of interpersonal problems between children, the child and the teacher or the child and other people. Some children are able to tolerate such problems well; others are significantly less able to tend to think correctly. However, all children can benefit from the systematic benefits and application of problem solving skills when dealing with problems between them and others in daily life (Shure, 2005; Habibi, 2014).

Various studies have shown the effectiveness of problem solving training in reducing maladaptive behavior and behavioral problems. Bakhshayesh & Dehghan Zardini (2013) in their research found that teaching problem-solving skills to students helps them develop the social and behavioral skills they need.
The ability to be effective, overcome the problem, increase the ability to plan and behave in a targeted and proportionate manner. In their research, Jobe-Shields et al. (2015) found that increasing problem-solving skills in parents and their use in relation to their children reinforces emotional bonds and that children in social environments have less behavioral problems. Sutherland et al. (2018) in their study examined the effect of teacher-child interactions and communication on reducing preschool children’s behavioral problems and how to resolve these problems. The results showed that if some of the teacher-child interactions and relationships were based on problem-solving skills and increased positive interactions between them, it would lead to reduced behavioral problems in children.

Shokohi Yekta et al (2014) examined the effectiveness of interpersonal problem solving training on increasing social skills and reducing behavioral problems in first grade elementary school students and found that intervention program to increase social skills and reduce problems Behavior was effective in terms of ratings of mothers and teachers, and the difference in means was statistically significant. The results of observing problematic behaviors also showed that the mean difference in the three stages of observation was significant and education led to a decrease in these behaviors. In their research, Kakabarae et al. (2017) examined the impact of problem-solving instruction on students' behavioral problems. The results showed that there were significant differences between the pre-test and post-test scores in the subscales of behavioral problems, according to the parents, teachers and students, but there was a significant difference between the post-test scores and the follow-up in the subscales of behavioral problems. There was no significant difference. Therefore, family / school problem solving education is effective on students' behavioral problems.

There have also been studies reporting different results. Shokohi Yekta et al (2015), in a study entitled Effectiveness of Thinking Child Workshop on Parental Parenting Styles and Behavioral Problems of Preschool Children, found that the intervention had no significant effect on children's behavioral problems. Is. Also, Khoshkam, Malekpooor, and Molavi (2008), in their research on students with visual impairments, found that the effectiveness of group problem solving training reduces exogenous behavior problems, but in reducing problems Endogenous behavior had no effect. The process of simultaneous thinking of "what should I do now" and "the consequence of that action" seems to have become apparent at about the age of five. Research results suggest that problem-solving education should begin with adolescence, although preschool age is also a good start (Shure, Shokohi Yekta, translation, 2014). It is noteworthy that 13 to 18 percent of preschool children experience severe behavioral problems transiently and sometimes with long-term negative consequences. Among these children, those who engage in abnormal behavior at an earlier age are more likely to develop problematic stabilized behaviors (internal or external maladaptive behavior) in the future (Schell et al., 2015). Admittedly, children with behavioral problems will experience higher levels of risk aversion than their peers, indicating the importance of intervention time as well as the type of intervention (Fauth & Platt & Parsons, 2017). This study aimed to determine the effect of problem solving education on preschool children's maladaptive behavior.
2. Methodology

This study is a quasi-experimental one with pre-test-post-test design with control group. In this study, problem solving training was considered as an independent variable and maladaptive behavior (internalizing behavior, externalizing behavior) as the dependent variable. All the boys and girls of preschool in Kermanshah kindergartens were the statistical population of this study. To select the subjects, the Gresham and Elliott Social Skills Questionnaire was made available to all parents and educators of the preschool children of the three preschools that were selected to be available, according to the standardized research tool, Children with Skills Poor social behaviors and maladaptive behavior were separated from other children. Then, 32 children were selected from these children who met the inclusion criteria: informed parental consent to participate in the study; having at least a diploma for one parent; living with parents (not divorced); They were frequently at home; parents aged 25-50 years; and no psychiatric drug use. Finally, due to falling, 24 subjects remained in the study and were assigned to two experimental and control groups. Covariance analysis was used to analyze the data.

Gresham and Elliott (1990) Social Skills Rating Scale consists of two forms of parenting (49 items) and teachers (40 items) in preschool and consists of two parts: social skills and behavioral problems. This scale includes the Social Skills section on the subscales of collaboration, assertiveness, responsibility, and self-control in the parent form, and the subscales of Collaboration, Assertiveness, and Self-control on the Teacher Form, and Behavioral Problems. Includes subscales of external and internal behavior in both parent and teacher forms. Rating forms based on a three-point scale from zero to 3 evaluate the frequency of social skills and behavioral problems from the perspective of the trainer and parent. By summing the constituent scores of each subscale, the total score of the subscale is obtained. Gresham and Elliott (1990) reported for parent form that the reliability coefficient (alpha) for social skills factor 0.90, problem behaviors factor 0.73, and co-factor 0.81, assertiveness 0.76, Responsibility was 0.75, self-control 0.83, external behaviors 0.71, and internal behaviors 0.57.

Shahim (1998) reported internal consistency and test-retest as a measure of reliability of scale and construct validity and simultaneously this scale was desirable. Also, Gresham and Elliott (1990) reported for teachers' form that the reliability coefficient (alpha) for social skills factor 0.94, problem behaviors factor 0.82, and cooperative subscale 0.90, assertiveness 0.90, Self-control, externalizing behaviors, and internalizing behaviors were 0.91, 0.85, and 0.74, respectively. Shahim (1998) reported internal consistency and test-retest as a measure of reliability of scale and construct validity and simultaneously this scale was desirable. Because of the multidisciplinary approach and evaluation of several ratings and the possibility of intervention, this scale has been considered by many researchers (Ferlang & Karen, 1995). Has been introduced as one of the very good scales for measuring social skills and behavioral problems (Shokohi Yekta et al, 2014).

The intervention method in the present study was that the experimental group received 16 sessions of problem solving skills training (based on Mirna Sher's instruction "I can solve the problem"). Intervention sessions were held 3 times a week with the presence of a trainer and an assistant for 45 minutes. The program focuses on teaching the child basic verbal problem solving concepts and then engaging them in social interaction with other children, helping them to understand different and similar emotions, using storytelling, performing plays, and playing targeted games with the child. And finally, the search is for a third way that satisfies both parties. Targeted group games with children and their impact are in line with the findings of Hossein HosseinKhanzadeh (2017) research on the effectiveness of play therapy on improving interpersonal and self-efficacy interactions. Table 1 summarizes the content of the intervention sessions.
### Table 1. Summary of Problem Solving Training Intervention Sessions

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Purpose</th>
<th>Concept</th>
</tr>
</thead>
</table>
| 1        | - Learn to use words to express desires  
- Understand the relationship between concepts and words | - Teaching concepts such as "is"; "not"; "some" and "all" |
| 2        | - Introduction to basic concepts of problem solving  
- Classification training begins | - Teaching the concepts of "different"; "similar";  
- Grouping of animals, seasons and time |
| 3        | - Teaching children to identify emotions | - Learning and recognizing emotions such as happy, sad, angry, in yourself and others |
| 4        | - Encourage the child to listen and pay attention  
- Recognizing the feelings of others | - Increase the child's concentration  
- The importance of understanding sadness, happiness and anger in another |
| 5        | - Learning to recognize individual differences | - Concepts of "why"; "because", "reasoning" |
| 6        | - Training to wait  
- Teaching fair and unfair concepts | - Use the train seat game  
- Use story and drama |
| 7-8      | - Understand the nature of the problem and generate a large number  
- Possible solutions | - Identify the problem  
- Find alternative and similar alternative solutions  
- Use the story of the ugly duckling |
| 9-10     | - Understand cause-and-effect relationships as precondition for thinking | - If you go under the rain you get wet  
- If you run fast you will sweat |
| 11-12    | - Investigate the possible consequences of each situation and thinking about that | - You get sick when you don't eat  
- You burn when you turn on the hot stove  
- What happens when you don't brush? |
| 13-14    | - The relationship between the solution and its consequences | - Does the child do the right thing when locked in the room?  
- What might happen?  
- How will it feel if that happens?  
- What to do that is appropriate? |
| 15-16    | - Give the child practice and accompany the child  
- Finding the right solutions | - What could happen if you pushed your friend?  
- Using fictional imagery to illustrate the problem and find alternative ways |

Participants were assigned to two experimental and control groups. Pre-test was administered to both groups, then the experimental group received 16 sessions of problem solving skills training (based on Mirna Sher's "I Can Solve the Problem" instruction). Intervention sessions were held 3 times a week with the presence of a trainer and an assistant for 45 minutes. Also, the parents of the children in the experimental group were trained in problem solving skills based on the existing instructions in 6 sessions. The control group did not receive targeted intervention. Then, post-test was performed on both groups. After four months, the follow-up period was also performed for the groups to evaluate the reliability of the results over time and finally the data were statistically analyzed. For data analysis, SPSS software and descriptive statistics (mean and standard deviation) and inferential statistics (Shapiro-Wilk test and multivariate analysis of covariance) were used at the significant level of 0.05. Spss24 software was used.
3. Findings

Table 2. Descriptive variables of maladaptive behavior in experimental and control groups in three stages of pre-test, post-test and follow-up

<table>
<thead>
<tr>
<th>Components</th>
<th>examination Group</th>
<th>control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>The standard deviation</td>
</tr>
<tr>
<td></td>
<td>pre-test</td>
<td>post-test</td>
</tr>
<tr>
<td>Parental report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal behavior</td>
<td>2/08</td>
<td>1/31</td>
</tr>
<tr>
<td>External behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score of maladaptive behavior</td>
<td>5/50</td>
<td>1/56</td>
</tr>
<tr>
<td>Teachers report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal behavior</td>
<td>2/91</td>
<td>2/87</td>
</tr>
<tr>
<td>Exterior behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score of maladaptive behavior</td>
<td>5/16</td>
<td>1/74</td>
</tr>
</tbody>
</table>

As can be seen in Table 2, in the descriptive mean index, the decrease in the scores of the parents based on the parent and teacher reports was significant in the post-test. Also, the normality of the data was analyzed by Shapiro-Wilk test. The results showed that the significance level of this test for all data was higher than 0.05 (P≤0.05). At 95% confidence level, they were normal. Prior to using multivariate analysis of covariance, the assumptions of this test (the M-box test and the Levin test) were examined. In order to investigate the assumption of homogeneity of the covariance, the M-box test was used and the results showed that according to the reports of parents (BOX = 3.35; F = 1.08; P = 0.38) and teachers (P = 0.42; BOX = 0.92; F = 0.092), the value of this test is not significant and as a result there is a difference between the covariance by default. Levin test results also showed that according to parent and teacher reports, the level of F statistic for the components of internalizing behavior (parenting report P = 0.17 and teacher reporting P = 0.25) and externalizing behavior (parenting report P = 0.74 And the teacher report P = 0.33) was not significant (P>0.05), indicating that the variance of the variable error of maladaptive behavior was not different between the subjects and the variances were equal.

Table 3. Results of Multivariate Analysis of Covariance

<table>
<thead>
<tr>
<th>Source</th>
<th>Name of Test</th>
<th>Value</th>
<th>F</th>
<th>df</th>
<th>df Error</th>
<th>Sig</th>
<th>Squared Eta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents Group</td>
<td>Pillai’s Trace</td>
<td>0/892</td>
<td>86/85</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/892</td>
</tr>
<tr>
<td></td>
<td>Wilks Lambda</td>
<td>0/108</td>
<td>86/85</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/892</td>
</tr>
<tr>
<td></td>
<td>Hotelling’s Trace</td>
<td>8/272</td>
<td>86/85</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/892</td>
</tr>
<tr>
<td></td>
<td>Roy’s Largest Root</td>
<td>8/272</td>
<td>86/85</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/892</td>
</tr>
<tr>
<td>Teachers Group</td>
<td>Pillai’s Trace</td>
<td>0/569</td>
<td>13/87</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/569</td>
</tr>
<tr>
<td></td>
<td>Wilks Lambda</td>
<td>0/431</td>
<td>13/87</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/569</td>
</tr>
<tr>
<td></td>
<td>Hotelling’s Trace</td>
<td>1/321</td>
<td>13/87</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/569</td>
</tr>
<tr>
<td></td>
<td>Roy’s Largest Root</td>
<td>1/321</td>
<td>13/87</td>
<td>2/00</td>
<td></td>
<td>0/000</td>
<td>0/569</td>
</tr>
</tbody>
</table>

Table 3 shows that the effect of problem solving training was 0.89, which means that 0.89 of the variance of the post-test scores of maladaptive behavior variable was associated with group membership. Statistical power of 1 and probability level close to zero indicate adequacy of sample size. Significant levels
of pre-test for all tests indicate that, from the parents' point of view, there is a significant difference between the children of the experimental and control groups in at least one of the subtypes of maladaptive behavior. Also, according to the teachers' report, the effect of problem solving training was 0.56, which means that 0.56 variance of the post-test scores of the variable of maladaptive behavior was related to group membership. Statistical power of 1 and probability level close to zero indicate adequacy of sample size. While pre-test significance levels of all tests indicate that, from the teachers' point of view, there is a significant difference between the children of the experimental and control groups, at least in one of the variable subscales of maladaptive behavior. The results of the ANCOVA covariance analysis test in the MANCOVA context are presented in Table 4.

Table 4. Results of ANCOVA analysis in MANCOVA text on the mean of post-test scores and follow-up of subscales of maladaptive behavior.

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Step</th>
<th>df</th>
<th>F</th>
<th>Sig</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>Internal behavior</td>
<td>post-test</td>
<td>1</td>
<td>38/05</td>
<td>0/000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>follow-up</td>
<td>1</td>
<td>57/87</td>
<td>0/000</td>
</tr>
<tr>
<td></td>
<td>Exterior behavior</td>
<td>post-test</td>
<td>1</td>
<td>119/67</td>
<td>0/000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>follow-up</td>
<td>1</td>
<td>156/58</td>
<td>0/000</td>
</tr>
<tr>
<td>Teachers</td>
<td>Internal behavior</td>
<td>post-test</td>
<td>1</td>
<td>13/34</td>
<td>0/000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>follow-up</td>
<td>1</td>
<td>14/34</td>
<td>0/000</td>
</tr>
<tr>
<td></td>
<td>Exterior behavior</td>
<td>post-test</td>
<td>1</td>
<td>28/07</td>
<td>0/000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>follow-up</td>
<td>1</td>
<td>37/09</td>
<td>0/000</td>
</tr>
</tbody>
</table>

According to Table 4, it is observed that according to the parent report, problem solving training was effective on the subscales of internalizing behavior, extrinsic behavior and total score of maladaptive behavior in the post-test phase and this effect is in the follow-up phase. Therefore, the mean post-test scores and follow-up of the experimental group were significantly different in problem solving than the control group. Also, according to the teachers, problem solving training was effective on the subscales of internalizing behavior, extrinsic behavior, and total score of maladaptive behavior in the post-test phase, and this effect was maintained at the follow-up stage. Therefore, the mean post-test scores and follow-up of the experimental group were significantly different in problem solving than the control group. In general, it can be said that problem solving training significantly reduces maladaptive behavior in the post-test and follow-up stages in preschool children from the parents' and teachers' point of view and has the necessary reliability and validity.
4. Discussion

The purpose of this study was to investigate the effect of problem solving education on maladaptive behaviors of preschool children. Results of multivariate analysis of covariance showed that there was a significant difference between preschool children in experimental group and control group in maladaptive behavior. In other words, the mean of maladaptive behavior in the experimental group after problem solving skill training was different, so that problem solving skill training reduced the maladaptive behavior of preschool children. This finding is in line with the research findings of Kakabarace and Moradi (2017); Shokohi Yekta et al (2014); Bakhshayesh & Dehghan Zardini (2013); Problem-solving skills training is based on maladaptive behavior.

In explaining the effectiveness of problem solving education on maladaptive behavior, it can be said that social interaction training and problem solving intervention are effective in reducing maladaptive behaviors of children and improving their performance (Erozkan, 2013). As children learn to use problem-solving thinking, their social well-being improves, with significant reductions in their anger, emotional breakdown, and social isolation. Children are better able to wait, share, take turns and work with others. Children, regardless of mood, become more loving and more aware and even really concerned about others' emotions.

Fauth et al (2017) Since self-centeredness is one of the growth characteristics of childhood, it means that the child is centered on the world and seeking to adjust to his or her own point of view, focusing on problem-solving learning. The world is in another (empathy) view of finding a middle solution or a third solution, when the child discovers an existing toy, it can neither belong to him nor to his rival playmate but to the means. It is a place to satisfy the need for fun, curiosity, entertainment and discovering the world around both of them, as well as tools for learning how to interact with the other; Modify, modify, and modify behaviors to take possession of the device, based on peer acceptance, collaboration and empathy.

One can also look at the issue from a different perspective: being a preschooler is considered a normal behavior and a developmental characteristic that many parents are unaware of and consider it to be inappropriate (rather than natural) behavior. In their parenting problem solving and parenting skills, in other words, empathy (which also includes parenting problem solving), they find that their child's temperament is age-appropriate. And thus do not resist or counteract it, and thus do not form a cycle of maladaptive behaviors in parents and children. (Ganji, 2018). However, considering the limitations of the present study can be helpful in explaining its findings and shaping new horizons for interested researchers. First, the guidelines used in this study were those of Mirna. He did all his research on a "multi-year basis", but the present study did not allow for such a time span. In addition, the research tool based on Mirna Sher's theory did not find that the absence of such a tool could provide an opportunity for interested researchers to design and standardize such a tool. The second limitation was that as a result of falling subjects during the intervention sessions, the number of people in each group decreased from 16 to 12, and no new subjects were available.

Boys and girls tend to exhibit different problem-solving behaviors; boys in this domain exhibit higher levels of externalization problems and girls exhibit more internalization problems (Greiff & et al, 2013). Therefore, it is suggested that the number of male and female subjects in the statistical groups be the same in order to increase the validity of the research findings. According to the findings of this study, it is recommended that problem solving education for parents and preschool children as part of a training program or work unit be implemented in educational centers and be addressed by relevant authorities. Parents are also encouraged to incorporate and practice problem solving in the family environment, on a continuous basis, with the title of parenting skills, to internalize this important skill for their children.
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