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# Effectiveness of Metacognitive Therapy on the Symptom Reduction in Student with Oppositional Defiant Disorder

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**Abstract.** The present study aims to explore the effectiveness of Metacognitive Therapy on reducing the symptoms of student with Oppositional Defiant Disorder (ODD). Having a quasi-experimental nature with pre-test and post-test, the methodology consists of a two-month follow-up period and a control group. The statistical population includes all male secondary school students with Oppositional Defiant Disorder studying at 7th and 8th grades in Tehran during the educational year 2013- 2014. Using multi-stage cluster sampling method, a total of 30 subjects were selected and randomly assigned in the two experimental and control groups. The Child Behavior Check List was used to evaluate the rate of Oppositional Defiant Disorder in students. To analyze the statistical data, a covariance method was applied as a result of which a meaningful reduction ($p>0.001$) was observed in the post-test and follow-up intensity of ODD symptoms for the experimental group in comparison to the control one. Moreover, Metacognitive therapy proved to be an effective intervention in reducing the symptoms of ODD.

**Keywords**: Metacognitive Therapy, Oppositional Defiant Disorder, Intervention Method

## 1. INTRODUCTION

Oppositional Defiant Disorder (ODD) is a relatively new disorder in children without all the signs of conduct disorder. The disorder was suggested for the first time in 1980 as a behavior disorder (Helfinger and Humphreys, 2008) which causes children to have main problems with the educational, occupational, and social issues, in addition to such basic problems as persistent pattern of negativistic, hostile, and defiant behavior (Greene, 2002).

According to studies, ODD usually appears by the age of 6 and people with the disorder are in the high risk of other disorders including conduct disorder, attention deficit disorder/ hyperactivity disorder, mood disorders, anxiety, substance abuse, antisocial personality disorder and criminal behaviors during maturity and adulthood. ODD is one of the most common clinical disorders in children and adolescents, and given the evaluation and diagnostic criteria, its frequency has been reported to be between 2 and 16% in preschool or early school-age in early stages before adolescence. It is also considered a destructive behavior disorder since many children with ODD show some cognitive and social deficits as well as behavior disorders, just in the same way as other types of behavioral problems. Furthermore, ODD is one of the most common psychiatric disorders at clinical centers (Whitman, 2006; Keenan, 2012).

DSM-5 defines ODD as a pattern of angry/irritable mood, argumentative/defiant behavior, or vindictiveness lasting at least six months during which the social functions are disrupted. The symptoms are often part of a disrupted interactional behavior toward others. Moreover, the children with ODD do not care about their defiant and aggressive behaviors, assuming them a justification for their irrational desires and terms. ODD symptoms may be only limited to one

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area and be seen frequently at home. However, in most cases, the symptoms of the disorder can be observed in several areas. ODD is most common in families where the parents or caregivers are not responsible or not serious in their childcare (American Psychological Association, 2013).

ODD symptoms may be only limited to one area and be seen frequently at home. However, in most cases, the symptoms of the disorder can be observed in several areas (American Academy of Child and Adolescent Psychiatry, 2007).

The prognosis of the disorder is undesirable and leads to failure at school and family. This may result in the academic failure and expulsion from school, delinquent behavior and substance abuse, causing some long adverse consequences (Richard et al., 2002). Children with ODD are at risk of such disorders as conduct disorder, antisocial behavior, mood disorder, and anxiety (Loeber, Burke and Pardini, 2009, Nock et al., 2007).

There is no separate and systematic study on the etiology of ODD. The best data are from the studies that have been done in relation to the conduct disorders. Most experts believe that rather than a single cause, several factors contribute to the risk of the disorder including genetic or biological characteristics and orientations of the child, ineffective parenting, and environmental conditions (Sanders et al., 2004).

The most effective intervention strategies for people with ODD are behavioral-cognitive strategies and multiple target levels, often being the children and their parents and sometimes family, peers and school (Loeber et al., 2009). One of the most important advances in the second half of the twentieth century is the development of the theories emphasizing the role of higher processes affecting the control and guidance of cognitive processes. These higher processes are named for the first time as "metacognition" by Flavell (1976). Metacognition is a multifaceted concept encompassing knowledge, processes and strategies to recognize, evaluate, supervise or control the cognition (Wells, 2004; Wells, 2009). Flavell (1976) defined metacognition as the awareness of cognition and cognitive processes and active controlling, regulating, and reviewing the cognition. The term metacognition refers to our knowledge of our own cognitive processes and how to use them optimally in order to achieve the learning objectives.

Effectiveness of metacognitive therapy for reading disability, depression, OCD, social anxiety, impulse control and addiction has been confirmed (Ghara'ee, 2004; Camahalan, 2006; Wells, 2009; Meyer, Beck and Ride, 2009; Kashefi, 2013). According to the findings of the various concerned studies, the main question of the present study is whether the metacognitive therapy contributes to the severity of symptoms of ODD in the students.

## 2. METHODOLOGY

The present study is of semi-experimental nature with pre-test and post-test with control group.

**Population, Sample, and Sampling Method**: The study population consisted of all the first grade high school students with ODD and studying in schools of Tehran during the academic year 1393-94. In the present study, a multi-stage cluster random sampling method was used. To do so, among the 15 educational areas of Tehran, one was randomly selected and among the schools in the area, one was chosen randomly as well. A Child Behavior Checklist (CBCL) scale was used in the study. The checklist was completed by the parents or the person having custody of the child. Respondents completed initially some questions measuring the child's

competence as well as some open-response questions related to the child's diseases and disabilities.

### 2.1. Achenbach Test

To collect data, Achenbach test (system of empirically-based assessment) was used. The system, being a multi-axis model providing a framework to organize and integrate experimental data from various data sources. The system uses three different sources to collect data: parents, teachers, and children themselves and different behavior grading scales: child behavior checklist, a self-report questionnaire, and teacher report form. The main scale of the system is to identify people with emotional and behavioral disorders (Achenbach and Rescorella, 2001).

Mina'ee (1384) has adapted and standardized the child behavior checklist, a self-report questionnaire and teacher report form for 3417 male and female elementary and high school students, and has reached the conclusion that the internal consistency coefficients of scales ranges from 63% to 95%. Thus, all the three forms of Achenbach enjoy the desired high reliability and validity and can be used to assess emotional-behavioral disorders in children and adolescents 6 to 18. Respondents, initially completed the questions measuring the child's competence as well as some open-response questions related to child's diseases and disabilities. In this form, they ranked the child's emotional, behavioral and social problems. There are totally 112 questions and the respondents ranked the questions based on the child's status in the last 6 months as 0 (false), 1 (somehow or sometimes true), and 2 (always or often true).

### 2.2. Intervention sessions and metacognitive therapy

In the first session, the purpose of metacognitive therapy and its importance was set out after the initial relations had been established.

In the second session after the first one had been reviewed and the clients were provided with some feedback, they were instructed as to wear the white hat. With this strategy, people began to identify concerns and their mental impressions, without having to interpret them.

In the third session the strategy to postpone teaching action was taught. To postpone concern and action, people put themselves in silent mode their mobile phone in order to be indifferent to the threatening situations.

In the fourth session how to use the Red Hat was taught. Using Red Hat, People could express emotions and feelings, and at the same time tried not think of their cause or effect.

In the fifth session how to use the Yellow Hat was taught. Yellow Hat thinking was positive and constructive. The Yellow Hat answers the question of what opportunities, advantages and capabilities you will have if all barriers to overcome conflict and anger are removed.

In the sixth session how to use the Black Hat was taught. Using the Black Hat, people learned to identify barriers to achieving the objective.

In the seventh session how to use the Green Hat was taught. Using the Green Hat, people learned to create new solutions to deal with distressing and threatening situations.

In the eighth session once again the previous sessions' discussions were briefly reviewed and the learned course of actions were emphasized.

In this research project, the software SPSS 16 has been used to analyze the data. For the descriptive statistics, such indicators as standard deviation (SD) and mean and for inferential statistics, covariance analysis have been applied.

## 3. RESULTS

The descriptive statistics indicators concerning the ODD scores have been provided separately for each group. Table 1. Presents the relevant descriptive data.

**Table 1.** ODD Mean and SD for the groups during the test stages.

| Group | Stage | Mean | SD |
|---|---|---|---|
| Experimental | Pre-test | 16.66 | 5.36 |
| | Post-test | 12.25 | 2.93 |
| | Follow-up | 11.10 | 2.26 |
| Control | Pre-test | 16.40 | 4.40 |
| | Post-test | 17.10 | 4.27 |
| | Follow-up | 16.90 | 3.80 |

Based on the Table 1. No meaningful difference seems to exist between the groups regarding the mean during the pre-test stage. The results also showed that in the post-test and follow-up, the mean symptoms of ODD is less in the experimental group compared with the control group. Thus, the covariance analysis was applied to analyze in more detail the difference and determine if it is statistically significant, and also to control the effect of the mean effect whose results have been represented in Table 2.

**Table 2.** Test of difference covariance analysis results in the two control and experimental groups for ODD symptoms.

| Status | Change Source | SS | df | MS | F | P | Size |
|---|---|---|---|---|---|---|---|
| Post-test | Pre-test | 44.95 | 1 | 44.95 | 10.12 | 0.001 | 0.20 |
| | Group | 125.18 | 1 | 124.18 | 28.51 | 0.001 | 0.63 |
| | Error | 112.38 | 27 | 4.11 | | | |
| Follow-up | Pre-test | 38.95 | 1 | 38.95 | 9.12 | 0.001 | 0.20 |
| | Group | 120.18 | 1 | 120.18 | 27.98 | 0.001 | 0.63 |
| | Error | 107.38 | 27 | 4.02 | | | |

Table 2. Shows that given the pre-test scores as covariate (Auxiliary), metacognitive therapy has resulted in a significant difference between control and experimental groups ($p < 0.001$). The effect size has been 64%, i.e. 64% of the post-test variance was related to metacognitive therapy. In other words, 64% of the difference between control and experimental groups is due to the independent variable.

## 4. DISCUSSION AND CONCLUSION

The present study revealed that metacognitive therapy has significantly reduced the ODD symptoms in high school students in the first grade during the post-test. It is then consistent with the studies by Onghai, 1999; Palencia, 2003; Peres, 2007, Jannatian et al., 2008; Safari, Faramarzi and Abedi, 2012.

In explaining the effectiveness of reality therapy in reducing symptoms of ODD one must refer to a few basic characteristics of the disorder. Recent research has suggested some defects in the cognitive and social skills of those having ODD. These defects are often obvious in performance functions, emotion regulation, language processing, social information processing, problem solving and adaptability (Hashemi et al., 1388). Children having ODD usually have problems regarding social relationship with parents, teachers and peers. Studies have shown that many of them are lacking in social skills and are rarely accepted by their peers. In addition, they

are deficient in identifying problems and applying problem-solving strategies to address them and also use less positive solutions in comparison with their peers. Such defects can cause them problems in school, in developing and maintaining positive relationships with peers and attracting other children's attention and may predict antisocial behavior in adolescence and adulthood (Schaefer, 2009). The therapy makes the students with ODD do problem-solving. Among the study constraints was the lack of relevant research (concerning ODD) leading the researcher to compare the results with other behavioral disorders, especially attention deficit hyperactivity disorder (ADHD).

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