

## Effectiveness of Cognitive Emotional Training on Psychological Capitals in the Students with Oppositional Defiant Disorder

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### ABSTRACT

**Background:** The present study was conducted aiming to determine the effectiveness of Cognitive Emotional Training on psychological capitals in the students with Oppositional Defiant Disorder (ODD).

**Method:** It was an experimental study with pretest, posttest and control group. The statistical population included adolescent with ODD studying at first high schools in the city of Tehran in academic year 2017-18. The samples included 30 adolescents with ODD who were selected through multi-stage clustered random sampling method and control groups (each group of 15). The experimental group received Cognitive Emotional Training during nine months while the control groups didn't receive any intervention. Psychological capital and children and adolescents mental health questionnaires were used. The data analysis was conducted via SPSS 23 through ANCOVA (Due to separation of effect of pre-test scores) at the 0.05 error level.

**Results:** The results showed that Cognitive Emotional Training has significantly influenced psychological capitals of the students with ODD ( $p < 0.001$ ). Furthermore, the results showed that this therapy was able to significantly maintain its effect in time ( $p < 0.001$ ). This training has been able to improve the psychological capital of students with ODD.

**Conclusion:** According to the findings of the present study it can be concluded that Cognitive Emotional Training using social and emotional techniques can influence psychological capitals of the students with ODD. Therefore Cognitive Emotional Training can be applied as an effective therapy in order to psychological capitals of the students with ODD

**Key words:** Oppositional defiant disorder, Cognitive Emotional Training, psychological capitals

## Introduction

Oppositional defiant disorder (ODD) is one of the most common psychological disorders among children and adolescents in preschool, elementary, and adolescence having a wide range of effects on the cognitive, metacognitive, emotional, and communication processes of students. The children and adolescents with this disorder are essentially deficient in relationships with parents, teachers, and peers, and are at a lower level compared to their peers in terms of social skills and academic competence (Skoulos & Tryon, 2007). Accordingly, ODD is a gradual and chronic disorder which always interferes with interpersonal relationships and academic performance (Szentiványi & Balázs, 2018; Burke & Romano-Verthelyi, 2018). Oppositional defiant disorder has been classified by the American psychiatric association (APA) (2013) in the fifth edition of the Diagnostic and statistical manual of mental disorders fifth revised edition (DSM-V) in the category of disruptive, impulsive-control, and conduct disorder. ODD refers to a pattern of inappropriate and recurrent levels of negativity, opposition, rebellion, and aggressive behavior toward authorities (Ganji, 2014).

Children and adolescents with ODD have vulnerable mental health and emotions (Muratori et al., 2017). Accordingly, it can be expected that they have vulnerable psychological capital. In terms of concept, psychological capital is a positive state of individual psychology in the field of growth and development, having at least four identifiable characteristics: Self-efficacy (confidence in one's ability and required effort for succeed in challenging tasks), hope (perseverance in achieving goals and changing direction towards success if needed), optimism (positive attribution to success in present and future), and resiliency which includes the concept of flexibility in achieving success and goals when faced with difficulties (Avey et al., 2010). In terms of nature, psychological capital has a positive implication and human potentials and abilities are considered from a completely positive point of view (Avey et al., 2010). Based on the results of different

studies, psychosocial capital has significant effects on the performance of the individual, family, and society (Bahadori Khosroshahi, et al., 2015).

Different therapeutic and educational methods were used for improving the psychological components of the adolescents with ODD. One of the types of these therapies is the cognitive emotion regulation. Numerous studies indicated the effective consequences of this method on different psychological components. Based on the results of the studies by Amiri, Viskarmi and Sepahvandi (2018); Bohlmeijer et al., (2010); Meule et al. (2013); Haynos et al., (2016); and Benfer et al., (2018), teaching cognitive emotion regulation affects the improvement of psychological components such as anxiety and depression, emotion regulation, self-efficacy, destructive behaviors, and emotional problems. By learning how to regulate emotion, individuals recognize what and also how and when they express emotions (Jiang et al., 2016). Emotion regulation may play a role in triggering, increasing, preserving, or reducing positive and negative emotions in response to environmental events because it affects physiological, behavioral, and experimental processes (Heimberg, 2018). Thus, emotion regulation can be defined as the physiological, behavioral, and cognitive processes which enable individuals to regulate their experiences and expression of emotions (Ghasemzadeh & Mahmoud Aliilo, 2019; Bell & Wolfe, 2004). Meanwhile, teaching emotion regulation was used in the field of children and adolescents. As the results of the studies by Rezaei Dehnavi et al. (2019) and Bashirpour et al., (2016) indicated, the effect of teaching emotion regulation can lead to the improvement of social skills, happiness, self-esteem, and reduced frustration among children and adolescents.

Regarding the necessity to conduct the present study, it should be noted that given the adverse consequences of ODD and its extensive effects on the individual and social life of children and adolescents, it can ruin the future life and cause



psychological, emotional, and academic harms, it is necessary to take the necessary and basic measures for treating the students with this disorder and prevent the development of this disorder as much as possible and to turn it into a conduct disorder. Due to the vulnerability of the adolescents with psychological disorders such as ODD in different psychological, cognitive, and metacognitive components and due to the lack of similar studies in the field of students with ODD, the researcher aimed to study the effect of teaching cognitive emotion regulation of emotion on the psychological capital of the students with ODD to reduce the psychological components which are harmful to such students. Thus, the question of the present study is “whether teaching cognitive emotion regulation has an effect on the psychological capital of the students with ODD?”

### Methods

The research method was of experimental with pre-test-post-test type with a control group. The independent variable was teaching cognitive emotion regulation and the dependent variable was the psychological capital of the students with ODD. In this study, the statistical population included the male students with ODD who were studying in the first year of high school in Tehran during the academic year 2017-2018. In this study, the multi-stage cluster random method was used. First, District 2 of education in Tehran was randomly selected by referring to the education department of Tehran from. Then, five middle schools for were selected randomly among the schools in the selected district. Then, the teachers and counselors were asked to introduce the students with the symptoms of ODD such as getting angry, arguing with teachers, actively disobeying or not cooperating with school authorities, intentionally upsetting others, blaming others for their mistakes and misconduct, irritability, anger, and resentment, and revenge. In the first stage, a number of 49 students were introduced from the selected schools. After introducing these students, their parents were

invited and the child and adolescent mental health assessment questionnaire was presented to them in order to ensure the presence of ODD in these adolescents. In the next step, a number of 39 students received an ODD diagnosis. Then, 30 of these students were randomly selected and randomly divided into the experimental and control groups (15 students in the experimental group and 15 students in the control group). Inclusion criteria of the study included having ODD (introduced by the teacher and conducting child and adolescent mental health assessment questionnaire), having the age of 12-16 years, attending the first year of high school, having the consent of students and parents to participate in the study and not having another acute or chronic physical and psychological disease (according to their health records and counseling). In addition, exclusion criteria included: absence in two training sessions, lack of cooperation, and failure to perform the tasks specified in the educational course. In order to adhere to ethics in the study, the consent of students was gained to participate in the intervention program and was informed of all steps of the intervention. In addition, the control group was assured that they would receive the intervention after the research process. Finally, attention was paid to the intervention of the experimental group based on Table 1, while the control group was taught in the same way.

In the present study, the following research tools were used:

#### *Child and adolescent mental health assessment questionnaire for age of 6 - 16 years*

Child and adolescent mental health assessment questionnaire for age of 6 - 16 years is a behavioral grading scale developed by Sprafkin in 1984 to screen for behavioral and emotional disorders among the children aged 6-16 years. The last edition of this questionnaire was published after several editions in 1994 (Quoted from Gadow & Sprafkin, 1997). This questionnaire has two forms of teacher and parent. In this study, the teacher form was used. The scoring questionnaire of this questionnaire is

answered on a four-point Likert scale of never, sometimes, often, and most often (scores one to four). The questions 19 to 26 of the questionnaire are related to ODD and these seven questions were studied. The range of scores on this scale is 7-28. In a study conducted by Grayson & Carlson (1991) on the initial form of the on child and adolescent mental health assessment questionnaire, its sensitivity to ODD, conduct disorder, and attention deficit hyperactivity disorder was reported 0.93, 0.93, and 0.77, respectively. In a study conducted by Gadow and Sprafkin (1997), the retest validity of the child and adolescent mental health assessment questionnaire was examined. Ammerman et al. (1997) studied the construct validity of the child and adolescent mental health assessment questionnaire among a group of children and adolescents. The results of their study indicated that the scores of the child and adolescent mental health assessment questionnaire had a positive correlation with the child behavioral form and the children personality questionnaire. These results confirmed the construct validity of the child and adolescent mental health assessment questionnaire. Tavakoli (1996, Quoted from Shokri & Osmani, 2019) examined the sensitivity of this test for the first time in Iran. The results of his study were such that for attention deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder, reliability was obtained as 0.75, 0.89 and 0.89, respectively. In addition, the content validity of this questionnaire was reported in this study. In this study, Cronbach's alpha coefficient of this questionnaire was calculated as 0.90. This questionnaire was used for the diagnosis of the students with ODD.

#### ***Luhans' Psychological Capital Questionnaires (PCQ)***

The 24-item questionnaire of psychological capital was prepared by Luhans and Olivier in 2007 and included four subscales of self-efficacy (questions 1 to 6), hope (questions 7 to 12), resiliency (questions 13 to 18), and optimism (questions 19 to 24). Each subscale of this

questionnaire has six items and the respondent answers each item based on a six-point Likert scale (I strongly disagree to strongly agree: a score of one to six). In order to calculate the score of psychological capital, first the score of each subscale is calculated separately and then the total score forms the total score of psychological capital. The minimum score of this questionnaire is 24 and the maximum score is 144. The construct validity of this questionnaire was confirmed through the confirmatory factor analysis. A study by Forouhar et al. (2012) after two experimental implementations and the opinions of experts, confirmed the face and content validity of this questionnaire and its validity coefficient was reported through Cronbach's alpha of 0.87. Farrokhi and Sabzi (2016) used the correlation of the score of each dimension with the total score in order to determine the validity of their study. Based on the results of the study, the coefficients of self-efficacy, hope, resiliency, and optimism dimensions were obtained as 0.84, 0.78, 0.66, 0.65, respectively, and for the whole scale, 0.89 was obtained indicating the optimal validity of this scale.

#### ***Implementation method***

After selecting the sample size, the pre-test step was implemented on the individuals present in the study. Then, the individuals were randomly assigned to the experimental and control groups (15 adolescents in the experimental group and 15 adolescents in the control group). Then, the individuals of the experimental group received cognitive emotion regulation intervention in groups of five during eight 90-minute training sessions as one session per week, while the control group could not receive the above-mentioned intervention during the research process. The present study was registered under the code of ethics IR.AHAR.REC.1398.211. After the intervention sessions, the individuals in both groups were subject to post-test in order to determine the effect of teaching cognitive emotion regulation on the psychological capital of the adolescents with oppositional defiant disorder in the experimental



group. It should be noted that in the present study, emotion regulation teaching protocol (Gross, 2007) was used as the studies by Rezaei Dehnavi et al. (2019) and Bashirpour et al. (2016) in Iran and for the statistical population of children and adolescents and its validity was confirmed.

In this study, descriptive and inferential statistics were used for data analysis. In the descriptive statistics, the mean and standard deviation and in the inferential statistics, the Kolmogorov-Smirnov test were used for evaluating the normal distribution of variables, Levin test was used for examining the equivalence of variances, and regression analysis was used for examining the slope of the regression line. Eventually, the analysis of covariance test (due to the separation of the effect of pre-test scores) was used for evaluating the effectiveness of teaching cognitive emotion regulation on the psychological capital of the students with oppositional defiant disorder. Statistical results were analyzed using SPSS 23 statistical software.

## Results

The findings obtained from demographic data indicated that the subjects in the study were in the age range of 12-16 years, where the age range of 15 years had the highest frequency (36.66 %). On the other hand, these individuals were studying in the first year of high school and the highest frequency was related to the ninth grade (33.33%). Here is the evaluation of the descriptive findings of the study.

Before presenting the results of the analysis of covariance test, the pre-assumptions of parametric tests were tested. Accordingly, the results of the Shapiro Wilk test indicated that the pre-assumption of the normality of data sample distribution was established in terms of psychological capital in the experimental and control groups in the pre-test, post-test, and follow-up stages ( $p > 0.05$ ). In addition, the pre-assumption of variance

homogeneity was tested by Levine's test the results of which were not significant indicating that variance homogeneity was observed ( $p > 0.05$ ). On the other hand, the results of t-test revealed that the difference between the mean scores of pre-test in the experimental and control groups in the dependent variable (psychological capital) was not significant ( $p > 0.05$ ). Furthermore, evaluating the pre-assumption of the equality of variance-covariance matrix ( $p > 0.05$ ) and the pre-assumption of homogeneity in the regression line slope by examining the interaction of the pretest with the grouping variable in the psychological capital indicated that these two tests were insignificant. Thus, these two pre-assumptions were observed ( $p > 0.05$ ). Analysis of covariance was used for evaluating the teaching of cognitive emotion regulation on the psychological capital of the students with oppositional defiant disorder.

Based on the results of Table 3, teaching the independent variable (training cognitive emotion regulation) could cause a significant difference in the mean scores of the dependent variable (psychological capital of the students with oppositional defiant disorder) in the post-test phase at 0.05 error level. Thus, it is concluded that the mean score of the psychological capital of the students with oppositional defiant disorder improved through teaching cognitive emotion regulation by controlling the pre-test variable. The effect of teaching cognitive emotion regulation on the psychological capital of the students with oppositional defiant disorder was 0.81. In other words, 81% of the psychological capital of the students with oppositional defiant disorder is explained by group membership (teaching cognitive emotion regulation).

As can be observed in Table 4, the modified mean scores of psychological capital in the experimental group are higher than those of the control group.

**Table 1.** Summary of sessions on teaching cognitive emotion regulation

Session	Description
First session	Running pre-test, introducing the research samples to each other, expressing the necessity of familiarity and using cognitive emotion regulation in life. In addition, explaining the role of teaching emotion regulation in preventing communication, social, psychological and especially family problems.
Second session	Defining emotion, identifying emotions, and explaining about the biological process of creating emotion and affecting daily function, identifying positive and negative emotions in individuals and highlighting their role in family interactions, homework and writing a variety of emotions experienced by group members until the next session.
Third session	Teaching techniques for increasing positive experiences, teaching awareness of positive experiences, creating positive experiences through mental visualization of happy scenes and neglecting worries,
Fourth session	Teaching techniques to reduce negative emotions, teaching awareness on negative experiences and reducing negative emotions through enough sleep, trying to control life, sufficient nutrition, and exercise, taking care of oneself timely by referring to doctor, and avoiding drugs and alcohol.
Fifth session	Paying conscious attention to current emotions, full attention to one's positive and negative emotions, accepting it without judgment, expressing emotion correctly, improving mindfulness and paying attention to the present, gaining awareness on cognitive processing and monitoring these processes instead of interacting with them.
Sixth session	Teaching re-evaluation and expressing positive and negative emotions, training how to evaluate emotions, and paying attention to the consequences of each emotion, as well as trying to express emotions appropriately and preventing the inappropriate expression of emotions.
Seventh session	Teaching how to change negative emotions through action contrary to experienced emotions such as fear, anger, and stress, trying to better recognize emotions, and not confusing negative emotions to prevent negative emotions and destructive behaviors.
Eighth session	Summarizing the educational materials of previous sessions and running the post-test.

**Table 2.** Mean and standard deviation of psychological capital in the experimental and control groups

components	Groups	Pre-test		Post-test	
		Mean	Standard deviation	Mean	Standard deviation
Psychological capital	Experimental group	75.05	7.13	98.28	5.79
	Control group	77	9.04	78.75	9.49

**Table 3.** Analysis of covariance in the effect of teaching cognitive emotion regulation on the psychological capital of the students with oppositional defiant disorder

Variables	Statistical indicators of variables	Sum of squares	Degrees of freedom	Average squares	F	Significance level	Effect size	Test power
Psychological capital	Pre-test	1041.65	1	1041.65	37.69	0.0001	0.58	1
	Group membership	3235.16	1	3235.16	117.05	0.0001	0.81	1
	error	746.20	27	27.63				
	Total	236254	30					

**Table 4.** Modified mean scores in the psychological capital of the students with oppositional defiant disorder

variables	groups	mean	Standard error
Psychological capital	Experimental group	98.28	8.79
	Control group	78.75	9.49

## Discussion

The present study was aimed to determine the effect of teaching cognitive emotion regulation on the psychological capital of students with ODD. The results indicated that teaching cognitive emotion regulation had a significant effect on the psychological capital of the students with ODD. This finding is consistent with the results of the studies by Bohlmeijer et al., (2010); Meule et al. (2013); Haynos et al. (2016) and Benfer et al. (2018). The researchers indicated that teaching cognitive emotion regulation can improve the mental health of individuals by reducing anxiety, depression, destructive behaviors, and emotional problems, as well as improving emotion regulation and self-efficacy.

In justifying this finding, it can be stated that emotions are socially beneficial and can be effective in transferring emotions to others, causing social interaction, and building, creating, preserving, and not communicating with others (Benfer et al., 2018); Modifying and regulating them through teaching emotion regulation can play a critical role in mental health and its associated variables because emotions act as some solutions for dealing with the challenges, stresses and problems of life. In other words, since emotions play a significant role in life and emotion regulation, as a therapeutic method in emotion regulation, is related to self-esteem and positive social interactions, it causes effective meditation with stressful situations (Dryman & Heimberg, 2018) and increased activity in responding to stressful situations. Therefore, teaching cognitive emotion regulation can play an important role in the psychological well-being of adolescents by informing the adolescents with oppositional defiant disorder of positive and negative emotions, acceptance, and reactions timely and this process

can improve their psychological capital.

In another explanation, it can be stated that teaching emotion cognition, along with the techniques and skills such as mindfulness, distress tolerance, interpersonal relationships, and presentation of new solutions, as well as modification of distressing conditions, can help the individual to better cope with the present situation and its related emotions (Dryman & Heimberg, 2018). Using cognitive emotion regulation skills helps the adolescents with oppositional defiant disorder to more accurately recognize their emotions and then evaluate each emotion with the goal of modulating emotions without a responsive and destructive behavior. The ability of being aware of emotions, identifying and naming emotions, accepting negative emotions when required, and facing them instead of avoiding them are among the emotion cognitive skills which improve psychological capital.

In addition, it can be argued that teaching emotion cognitive regulation, along with the techniques such as identifying dysfunctional beliefs and reconstructing them, teaches the adolescents with oppositional defiant disorder to evaluate their status and its consequences with different perspectives. In addition, they can change the intensity of their emotional reactions, feel adequate about controlling their emotions, experience less discomfort and stress and this process will lead to the improvement of communicative and interactive skills, self-acceptance, purposefulness in life, and thus psychological capital.

The present study, like any other study, faced some limitations like limited results to specific groups, gender, and geographical area (male adolescents with oppositional defiant disorder in Tehran), the lack of control on the variables such

as intelligence status, social and economic status of adolescents, and the lack of follow-up stage. Thus, similar studies are suggested to be conducted in another statistical population, other genders, and other geographical areas by controlling the influential variables and holding the follow-up stage to increase the generalizations.

### Conclusion

Based on the findings of this study, this treatment is suggested to be used in psychological clinics, counseling centers, and psychological services of education departments. In addition, it is suggested that counselors of different levels in in-service and workshop courses become familiar with this treatment method and its use in improving the psychological capital of the students with oppositional defiant disorder. Based on the results of the present study, implying a significant effect of teaching cognitive emotion regulation on the psychological capital of the students with oppositional defiant disorder, it can be concluded that teaching cognitive emotion regulation can be used for improving the psychological capital of such students.

### Conflict of interest

In this study, no conflict of interest was reported by the authors in this study.

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### Authors' Contribution

Conceptualization, M.A.; Methodology, M.F.; Writing, Review & Editing: M.F.; Validation, M.A.; Investigation, M.F.

The authors approved the final manuscript and are responsible about any questions related to the article.

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