Title: The Effectiveness of Transactional Analysis on Parent-Child Relationship in Mothers with Child Oppositional Defiant Disorder

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Abstract

**Background**: Oppositional Defiant Disorder (ODD) is one of the behavioral disorders which causes significant clinical disorder in a person's academic, social, and occupational functioning. The purpose of this study was to investigate the effectiveness of transactional behavior analysis training on parent-child relationships in mothers with children suffering from defiant disobedience in Isfahan.

**Materials and Methods**: The design of this study was semi-experimental with a pretest-posttest approach and two experimental and control groups. The statistical population of this study included all mothers with children afflicted with defiant disobedient and their children in Isfahan in 2017. The sampling method was a multi-stage cluster sampling. Thirty students whose scores in the CSI-4 questionnaire were high and had oppositional disobedience symptoms were randomly selected, and 15 individuals were placed in the experimental group and 15 individuals in the control group. Then, the mothers of the experimental group underwent eight sessions of 90 minutes, each week one session, during a group training of transactional analysis, but the control group did not receive any interventions. The research tool was Fine's Parent-Child relationship questionnaire.

**Results**: The results showed that the group transactional behavior analysis training had a significant effect on parent-child relationships and its components (p<0.001), including positive affect (F=22.32, p<0.001), role disturbance (F=11.91, p<0.002), and identity determination (F= 9.87, p<0.001).

**Conclusion**: Considering that the transactional behavior analysis training can increase the extent of interactions, it has critical developmental consequences. Therefore, it seems that in clinical situations, by doing these kinds of interventions and promoting the mental health of the parents, positive and lasting steps can be taken to eliminate or relieve children's behavioral problems.

**Keywords**: child, mothers, transactional analysis, attention deficit and disruptive behavior disorders, parent-child relations.
1. Introduction

Family is a network of communications in which parents and children interact in a two-way process. In this community, the parties can exert tremendous effects on each other. By reflecting on the quality of parent-child relationships and scrutinizing it, one can understand the mother's critical role about the child. In recent decades, psychologists have put much emphasis on the child's relationships with his/her caregivers, and they have cited mutual reactions as the basis for children's emotional and cognitive development. The child's personality development depends on the mother's behavior and character make-up. Opinions taken from the psychoanalytic viewpoint assume that primary interactions between a mother and a child should have a quality that is necessary for the early development of the child (1).

The presence of a child with behavioral problems and disorders, the most important and most prevalent of which is the oppositional defiant disorder, in each family has affected its structure and overwhelmed the mental health of the family, especially the parents. In a family environment, that is, in fact, a limited community, actions, and reactions among members have a significant impact on increasing or reducing the existing problems. A kind of tension accompanies the birth of a child with adjustment problems in each family, and in such a situation although all members of the family and its function may be harmed, but problems about taking care of the child suffering from disorder exposes parents, especially the mother, to the risk of psychological trauma (2). Children suffering from defiant disobedience are generally incompatible and show negative behaviors. These problems have a progressive and chronic nature. Children with the oppositional defiant disorder (ODD) show more positive and adamant behaviors than their peers. The particular behaviors of these children include: defying, irritating, making a scene, disputing, and harassing others (3). These behaviors reduce psychological health and the right parent-child relationship.

Also, the symptoms of oppositional defiant disorder affect the interaction of children with their parents, as well as the way parents respond to these children because these children are very talkative, pessimist and indifferent, and have little involvement and collaboration. These children may refuse to comply with rules and regulations, show extraneous behaviors such as aggression and violation of the law, careless in carrying out their embarked work and also face problems in doing necessary activities and having order in their everyday life (4). Carnes-Holt (4) believes that parent-child interaction is the first reference to the world of child communications and is an essential and vital relationship for the creation of security and love, consisting of a combination of behaviors, emotions, and expectations that are unique to particular parents and a particular child. Regarding its importance, most researchers have concluded that the family factor and especially parents’ behavior during childhood plays a vital role in the appearance of behavioral problems during childhood and adolescence (5). Because the children are the mirror of parents, and the child's behavior is a reaction to environmental factors, and especially to the parent's performance (6).

The transactional relationship analysis provides a systematic theory of personality and social dynamics that is the result of clinical experiences and a genuine and reasonable form of
treatment that is readily understandable and applicable to the overwhelming majority of psychiatric patients (7). In analyzing the transactional relationship, the role of the environment and social communication is of prime importance; however, people are ultimately responsible for their lives and behaviors, and one must accept this responsibility and pay attention to his/her role in life more than any other factor. The interconnection analysis, in its purest form, has the ability to organize complex, confused and distressed thoughts and feelings of a person so that he/she acquires a better understanding of himself by separating and organizing his/her thoughts and feelings, and thereby with further awareness of his/her weaknesses and strengths, adopt healthy and constructive behaviors, which enables one to analyze and solve the problem in crises [8]. The various behaviors, thoughts, feelings, and emotions of man come from different parts of his personality, and the patient is one whose states of ego has been denied or contaminated or he has had transactional conversations with others (9). Transaction analysts believe that people can act in three ways, in the "parent," "adult," and "child" manner. These three modes form the behavioral structure of an individual (10). An essential part in transaction analysis is the "inner child" that was introduced by Berne in the 1960s, and reached its peak of popularity in the 1970s and was regarded as part of the healing movement in 1980. The inner child is the same little child that the person was in the past and wished to be heeded and cared for (11). Considering that the ability of parents to control and regulate emotions can be an essential factor in social functions and though it can also predict the behavioral problems of children. And regarding the role of transactional behavior analysis training in personal developmental changes, and since based on this study no research has been done under this rubric, the purpose of this study was to determine the effectiveness of the transactional behavior analysis training on parent-child relationships, control of anger and anxiety in mothers with a child suffering from oppositional disobedience.

2. Materials and Methods

The research method was semi-experimental with a pre-test and post-test approach and a control group. The statistical population of this study included all of the mothers with children suffering from the oppositional defiant disorder and their children in Isfahan in 2017. The sampling method in this research is a multi-stage cluster type. Because Isfahan has six educational districts, at first two districts were randomly selected, and accordingly, regions 2 and 3 were selected. Then, from these two districts, ten schools from the other three-year primary school and junior high schools were selected and then from these schools, fifty students with the oppositional defiant disorder were identified. Out of these fifty students, thirty students were randomly assigned to two groups, fifteen in the experimental group and fifteen in the control group. The inclusion criteria included the presence of a child with oppositional disobedience and lack of specific psychological illness and are under treatment, and the exit criteria included dissatisfaction with a continuation of collaboration. Transactional analysis was done by Berne in Transactional analysis in psychotherapy: A systematic individual and social psychiatry book (12).

This article is excerpted from the thesis of the first author and has the code of ethics committee IR.IAU.KHSH.REC.1396.14 of Islamic Azad University of Khomeini Branch.
Child Symptom Inventory-4 (oppositional defiant disorder)

This questionnaire was developed by Gadow and Sprafkin (13). This Children Symptom Inventory-4 (CSI-4) is a behavioral rating scale, designed by Sprafkin and Gadow to screen behavioral and emotional disorders in children aged 5 to 12 years. CSI-4 has two-parent and teacher forms as in the previous form. The parent form has 110 questions designed to screen 18 behavioral and emotional disorders, and the teacher's form, which contains information about the educational environment and the child's training staff, contains 77 questions and is designed to screen 13 behavioral and emotional disorders. In the study that Gravision and Carlson (14), has done on CSI-3R, its susceptibility for the oppositional defiant disorder, conduct disorder, and attention deficit hyperactivity disorder (ADHD) were reported 0.93, 0.93, and 0.77, respectively. The content validity of the CSI-4 inventory in Mohammad Esmail's research (15), the reliability of the parents' checklist through pretest, has been reported 0.90.

Parent-child relationship questionnaire

Fine, Moureland, and Schwebel (16) developed the original version of this questionnaire to measure the relationship between parents and their children (17). This questionnaire contains 48 questions (24 questions for a relationship with father and 24 questions for a relationship with mother), which has two forms, one for measuring the relationship between the child and the mother, and the other for measuring the relationship between the child and the father. Both scales are the same except that the words "father" and "mother" are changed. However, various factors are evident in father and mother forms. The total score is the sum of the means of subscales. Esmaeili & Eskandari (18) found that Cronbach's alpha was 0.50 to 0.89 for the subscales of the father, as well as alpha -0.92 and alpha coefficients, 0.66 to 0.82 for maternal subscales and Cronbach's alpha for the whole scale was 0.87. The parent-child interaction scale with Cronbach alpha coefficient from 0.89 to 0.94 for subscales relating to father, and an alpha coefficient ranging from 0.61 to 0.94 for maternal subscales, and 0.94 for total alpha coefficient, has a high internal consistency of questions.

Table 1. Contents of the training sessions of the experimental group

<table>
<thead>
<tr>
<th>Session</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First session</td>
<td>An acquaintance of learners with each other, group rules, goals of the basic definition and initial functional analysis and assignment.</td>
</tr>
<tr>
<td>Second session</td>
<td>Familiarizing the members with the (structural) and (functional) problems of the personality (rejection, pollution, and disturbance), the stabilization of states of ego.</td>
</tr>
<tr>
<td>Third session</td>
<td>Introducing the group to the concept of exchange and interaction, reciprocal exchange, crossover exchange, and its variants.</td>
</tr>
<tr>
<td>Fourth session</td>
<td>Familiarizing learners with the reinforcement of &quot;Mature I,&quot; controlling of &quot;parent I,&quot; and satisfying child I.</td>
</tr>
<tr>
<td>Fifth session</td>
<td>Familiarizing with all kinds of verbal and non-verbal strokes, positive and negative, conditional and unconditional, excellent and lousy stroke, ways of acquiring stroke, self-stroking, assignment</td>
</tr>
</tbody>
</table>
The obtained data using the SPSS-23 Software at two descriptive statistical levels include mean and standard deviation and at the interpretive statistics include analysis of covariance. To use analysis of co-variance, first, the statistical assumptions (Levin, Shapiro-Wilk test) were used.

3. Results

Participants in both of the control and experimental groups were in the age range of 25-55 years that the number of participants in between the age range of 25-35 years was (0.86.8), between 36-45 years was (0.53.2), and between 46-55 years was (0.60). The most frequent age group in the control group was in the age range of 25-35, and also the most frequent age group in the experimental group was in the range of 25-35. In both of these groups, individuals in the age range of 25-35 years had the most frequency regarding age, which was %46 and %40 of the sample volume for the control and experimental groups, respectively. The academic level of participants in these two groups included elementary to university levels. The number of sample members understudies with primary education was (%0), middle school degree (%33.4), diploma (% 46.6), associate diploma (%53.4) and Bachler degree and higher (%66.6). In the sample under study, 13 individuals were housewives (%43), and 17 individuals were employees (%57).

Table 2: The mean and standard deviation for dependent variables in experimental and control groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. D.</td>
</tr>
<tr>
<td>Parent-child relationships</td>
<td>122.20</td>
<td>18.39</td>
</tr>
<tr>
<td>Control</td>
<td>98.06</td>
<td>17.60</td>
</tr>
<tr>
<td>Experimental</td>
<td>32.93</td>
<td>7.61</td>
</tr>
<tr>
<td>Positive affects</td>
<td>22.13</td>
<td>3.48</td>
</tr>
<tr>
<td>Control</td>
<td>7.06</td>
<td>2.08</td>
</tr>
<tr>
<td>Experimental</td>
<td>11.20</td>
<td>1.37</td>
</tr>
<tr>
<td>Role disturbance</td>
<td>14.60</td>
<td>3.11</td>
</tr>
<tr>
<td>Control</td>
<td>9.46</td>
<td>2.97</td>
</tr>
<tr>
<td>Experimental</td>
<td>34.93</td>
<td>6.18</td>
</tr>
<tr>
<td>Identity determination</td>
<td>27.80</td>
<td>4.84</td>
</tr>
</tbody>
</table>

The implementation of covariance analysis on data obtained from research requires several conditions. If one or all of these conditions are not met, covariance analysis cannot be used, and its equivalent nonparametric test should be used to test the hypotheses. The establishment of three conditions for the implementation of the covariance analysis test is considered:
1) The distribution of the trait should be reasonable in the groups: The single-group Shapiro-Wilk test was used, and the results showed that the significance level of this statistic is higher than 0.05. This means that the distribution of the scores of the variables in the control group has no significant difference with normal distribution, so the distribution of the trait is normal. 2) Variance homogeneity of errors of dependent variables in groups: Levin test was used to examine this assumption. Based on the obtained results, the test statistics were not significant at $p \geq 0.05$. Therefore, there is no significant difference between the variance of the errors of the two groups, and the homogeneity condition of the variance of the errors is established. 3) The equation regression slope, according to the obtained results, $F$ test statistic has not been significant at $p \leq 0.05$. Therefore, the assumption of the equation of regression slope has been considered.

Table 3. Results of multivariate analysis of covariance for parent-child relationships

<table>
<thead>
<tr>
<th>Source of changes</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>$F$</th>
<th>Sig. level of $P$</th>
<th>Eta-squared</th>
<th>Statistical power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent-child relationships</td>
<td>Pre-test</td>
<td>1299.452</td>
<td>1</td>
<td>12.82</td>
<td>0.001</td>
<td>0.322</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>2803.654</td>
<td>1</td>
<td>27.67</td>
<td>0.001</td>
<td>0.506</td>
</tr>
<tr>
<td>Positive affects</td>
<td>Pre-test</td>
<td>549.278</td>
<td>1</td>
<td>21.66</td>
<td>0.001</td>
<td>0.445</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>566.008</td>
<td>1</td>
<td>22.32</td>
<td>0.001</td>
<td>0.453</td>
</tr>
<tr>
<td>Role disturbance</td>
<td>Pre-test</td>
<td>44.015</td>
<td>1</td>
<td>13.30</td>
<td>0.001</td>
<td>0.330</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>39.42</td>
<td>1</td>
<td>11.91</td>
<td>0.002</td>
<td>0.306</td>
</tr>
<tr>
<td>Communications</td>
<td>Pre-test</td>
<td>501.024</td>
<td>1</td>
<td>13.39</td>
<td>0.001</td>
<td>0.453</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>937.567</td>
<td>1</td>
<td>41.90</td>
<td>0.001</td>
<td>0.608</td>
</tr>
<tr>
<td>Identity Determination</td>
<td>Pre-test</td>
<td>73.932</td>
<td>1</td>
<td>11.83</td>
<td>0.002</td>
<td>0.305</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>61.705</td>
<td>1</td>
<td>9.87</td>
<td>0.004</td>
<td>0.268</td>
</tr>
</tbody>
</table>

As shown in Table 3, by controlling pre-test, there is significant difference between subjects in the control and experimental groups in terms of the score in parent-child relationships ($F = 27.75$, $p = 0.001$), positive emotions ($F = 22.32$, $p = 0.001$), role disturbance ($F = 11.91$, $p = 0.001$), communications ($F = 41.90$, $P = 0.001$), and identity determination ($F = 9.87$, $p = 0.001$).

4. Discussion

The results showed that the difference in post-test scores of the two control and experimental groups was significant on the scale of the parent-child relationship. Therefore, it can be concluded that the training of interaction behavior analysis has led to the improvement of parent-child relationships. This finding is consistent with the findings of Rinaldi and Howe (19) Morris (20), Barrow (21).

In explaining this finding, it can be said that transactional behavior analysis is one of the theories that focus on interpersonal relationships, life events, and the actions and reactions of individuals in communicational situations. The first goal is for the individual to achieve self-knowledge. That is an insight based on which he/she can explain patterns of his/her action and behavior in different situations of life. Improving communication skills is one of the main results of achieving this insight, which has been confirmed in numerous empirical studies (22, 23). Teaching the concepts of transactional behavior analysis to the mothers with a disobedient
child, in the simplest way, creates insight regarding the communication dynamics between family members, and in particular mother-child. A mother understands herself better and sees how to interact with her disobedient child. Mother gets a better understanding of the content and purpose of any message or behavior, and can better identify and satisfy her child's mental needs. The problem-solving skill of the mother and her level of tolerance increase, and can better exert a mature control on her behaviors and her disobedient child. Utilizing more of "Mature I" capacity in self-awareness manner plays a vital role in reducing mother-child conflicts and mother-father conflicts that may directly or indirectly affect parent/child relationships (24).

Transactional behavior analysis tutorials allow the mother to know at any time in interaction with the disobedient child what role she plays and in which of the states of the "I" she is communicating. Which mental game or which part of the play of life she is implementing? This insight helps the mother to move from the point of view "You are not fine - I am not fine" to the insight of "You are good-I'm good" -though it is incomplete- which ultimately improves communication and improves the efficiency of the role in the family (23). When people enter the game to get caught up in hegemony, they ignore the reality, that is, many choices that as an adult has in order to make positive ways of cuddling. When a child repeatedly shows oppositional defiant disobedience, parents, and in particular mothers, are forced to adopt strategies that temporarily solve the problem of the child's transactional behaviors. These strategies may, in the long run, turn out to be psychological games that the mother benefits from them in the front of their child's disobedience behavior.

The other reasons for the effectiveness of transactional behavior analysis on improving a parent-child relationship are the breakdown of the psychological process game that a mother may pursue about her disobedient child, due to temporary and early benefits. Therefore, breaking the flow of games, as well as failing to enter the game and adult reinforcing as an executive responsible for the personality can cut the defective cycle of problem creation - problem solving-accumulation of the problem (24). Transactional behavior analysis helps mothers to stop these psychological games more effectively and better and based on communication skills adopt more adaptive strategies, and these factors may improve the parent-child relationship. Training of the transactional behavior analysis increases happiness and pleasure and experience of positive emotions and higher satisfaction with life. Accordingly, the correct and better analysis of the disobedient child's behaviors by the mother will cause the parent and child action to interact with the disobedient child – to be under observation and adaptive control. The positive stroke between mother and child increases and the parent-child emotional accompaniment improves (25).

Transactional behavior analysis can lead the mother to recognition, and she understands that it is better to engage with the child with the adult part of her personality, and aggression and anger against the child's disobedient behaviors is a sign of the domination of the child or the blaming parent part of the personality. Therefore, this recognition encourages the mother to strengthen her mature personality and control the signs of the child and the parent and avoiding pollution, rejection, and modification of the crossover relations take a step towards achieving the "I am good, you are good" state (26). Given the fact that positive or negative feelings are
hidden "I child", and children with oppositional defiance use their child's negative emotions to create a tense atmosphere, and bring their parents especially mothers into a series of unhappy and crossover connections that these relationships originate primarily from the "blaming parent" by the mother, so perhaps there may be some training such as the organization of a better time, such as the creation of intimacy and the natural baby like happiness, spending time and recreation with family lead relationships to completeness and non-intersection, and brings about pleasant common feelings. This interactive style gradually improves the family's emotional atmosphere and increases the frequency of positive emotions in the parent-child relationship (27).

Analyzing transactional behavior as a method of interactive treatment, increasing the awareness, and power of individuals is to take new decisions and personal responsibility in order to change the flow of their lives. The person's personality boundaries become clear to each other and manifest the occurred contamination in each person's personality structure. This consciousness makes it possible, as individuals tend to be independent and individuality, to provide a platform for growing the independence and the perception of one's relatives, in this case, the disobedient child. Bern believes that before drafting, all children are in the state of "I am good - you are good", but after the draft of life and getting the contrary and conditional cares the individual is placed in a situation that tries more in every manner to satisfy others, not for his sincere and hearty desire, and this distances himself from the real ego and cause role disturbance in children, and leads to the "I'm not good - you're not good" state in them. By TA training perhaps can bring parents to breeding their mature ego and de-pollution of the adult, and by teaching the non-conditional and positive stroke to stimulate the growth of positive thoughts in them (28).

Therefore, mothers through this training have a better ability to communicate and reduce stress in their children, which leads to more self-esteem in children. While teaching transactional behavior analysis to mothers will enable them to manage parent-child relationships better, provide a more adaptive picture of the parent-adult-child, and establish a more positive emotional relationship with their disobedient child. This causes the parent-child replication to be increased among the children. The child's conscious and unconscious awareness from his role and position improves, and the disobedient child can better fulfill the duties and expectations associated with his or her role. Teaching communication skills to an individual instructs him how to initiate and continue the relationship and actively listen to the words of the party in the relationship, express his/her thoughts and feelings easily, and understand the feelings of the other person. The transactional, behavioral analysis by teaching how to analyze relationships, especially the types of complementary, crossover, and latent relationships, familiarize individuals with how to communicate effectively. In other words, equips individuals with appropriate communication skills so that by recognizing states of his/her "I" and others, in particular concerning verbal and non-verbal clues, be able to establish an appropriate complementary relationship (29).

Individuals with poor communication skills react sharply to others' opinions towards themselves and limitation in gaining profits for in themselves. Moreover, inevitably, aggression is seen as an available strategy for these individuals. Therefore, the training and acquisition of
communication skills, which play an essential role in reducing aggressive behaviors, is an integral part of the activities of transactional behavior analysis sessions. Under the influence of the transactional behavior analysis training and having a systematic look at the relationship, knowing the impact of the type of their relationship on their children, which can be a reason for increasing intimacy or intensifying conflicts, mothers will recognize their contribution to communication and will not recognize their child's behaviors only as a problem, and hence, with better conditions ignores her child's mistake or foul play. The mother will realize that in the stable condition, she is one of the effective actors in shaping the relationship and that she, consciously or unconsciously, has been involved in initiation and continuation of the psychological games that ended in distress between the parent and the child (26). This insight plays a useful role in changing behavior and thus improving the quality of the parent-child relationship. Providing positive stroke, free expression of feelings, complementary, cross-linking and latent relationship analysis, attention to verbal and non-verbal clues regarding the child, parent rejection, avoiding blame and negative caresses, avoiding entrance into psychological games are among skills that help mothers to establish a proper relationship with their children and even their spouses, increase satisfaction and improve the views of individuals towards each other. The mother's "You are not good" or "I am not good" view towards her child suffering from disobedience behaviors that results from the child's behaviors, transits to the "You're good, I'm good" view that is related to the forgiveness of the child's negative behaviors, and emotional relation and proximity of family members with each other and improvement of the parent-child relationship (30).

Among the limitations of the present study are: the uniqueness of the sample under study, the lack of opportunities and the possibility of pursuing at least one month for follow up session, and that the investigator himself has been the facilitator of intervention, and given the nature of interventions that have deep emotional links between Facilitators (researchers) and members, these links may lead to bias in providing responses that are accepted by the researcher. It is suggested to develop a teacher-specific transactional analysis package and a transactional analysis package for students with a classmate with coping disorder behaviors. Also, the intervention on the group of fathers or a combination of the group of mothers and fathers and comparing their results with the present research is suggested. Considering the severity and frequency of coping and coping non-obedience behaviors and child's age in the analysis and repetition in different environments and cultures is one of the other research suggestions of this study.

5. Conclusion

Considering that the transactional behavior analysis training can increase the extent of interactions, it has essential developmental consequences. Therefore, it seems that in clinical situations, by doing these kinds of interventions and promoting the mental health of the parents, positive and lasting steps can be taken to eliminate or relieve children's behavioral problems.

Ethical Considerations

Compliance with ethical guidelines
All ethical principles were considered in this article. The participants were informed about the purpose of the research and its implementation stages and signed the informed consent; they were also assured about the confidentiality of their information; Moreover, they were allowed to leave the study whenever they wish, and if desired, the results of the research would be available to them. This article is excerpted from the thesis of the first author and has the code of ethics committee IR.IAUKHSH.REC.1396.14 of Islamic Azad University of Khomeini Branch.

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**Conflict of interest**

The authors declare that they have no conflict of interests.

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