

The Efficiency of Play Therapy Based on Cognitive–Behavioral Approach on Aggression of Preschool Children with Attention Deficit/Hyperactivity Disorder

Afsaneh Jafarabadi*

Department of Educational Psychology, Faculty of Humanities, Islamic Azad University, Saveh Branch, Saveh, Markazi Province, Iran

Abstract— The current study aims to investigate the efficiency of play therapy based on cognitive–behavioral approach on aggression of preschool children with attention deficit/hyperactivity disorder. The research plan is pretest–posttest with control group. The statistical population is including all children of 4–6 years of kindergartens of Saveh during education year of 2010–2015 that among them, 400 children were selected based on multistage random cluster sampling method and child symptom inventory questionnaire was completed for them. Then, 30 children with attention deficit/hyperactivity disorder, by authentication of criteria for entering to research, were randomly placed on two groups (15 people for test and 15 people for control) and were answered to preschool aggression questionnaire proposed. Then, play therapy program based on cognitive–behavioral approach were performed for test group in 10 sessions of 60 minutes, twice per week while control group did not received any learning. After completion of sessions, posttest was conducted. The results of covariance analysis were shown that play therapy learning based on cognitive–behavioral approach is meaningful in mitigating aggression. Therefore, utilizing play therapy based on cognitive–behavioral approach for children with attention deficit/hyperactivity disorder is of special importance.

Index Terms— Play Therapy Based on Cognitive–Behavioral Approach, Aggression, Attention Deficit/Hyperactivity Disorder, Preschool Children, Educational Psychology

1 INTRODUCTION

Attention deficit/hyperactivity disorder is a neuropsychological disorder which initiates during childhood and identifies through some levels of chronic attention deficit disproportionate to age, impulsiveness and hyperactivity, to some extent, and compared to normal people who are in the same level of evolution it happens with more intensity and frequency [1–11]. This disorder is one of the most frequent psychological disorders of children. There are various statistics about privilege rate of this disorder. In the fifth version of diagnostic and statistical guide for psychological disorders, privilege rate of this disorder for adults and children are reported as 2.5 and 5%, respectively (American Psychiatric Association, 2013). However, conservatively, 3 to 7% of children in school age are suffered with this disorder [12–15]. Based on fifth version of diagnostic and statistical guide for psychological disorders, major symptoms of attention deficit/hyperactivity disorder are including five symptoms related to impulsiveness, attention deficit or hyperactivity which should be initiated before 12 and it should be observed at least in two different positions such as kindergarten, school, home and or during psychological assessment. Eighteen symptoms

are presented in fifth version of diagnostic and statistical guide for psychological disorders and it is necessary to observe at least six symptoms of attention deficit/hyperactivity disorder to diagnose this disorder in the people [16, 17]. In other words, minimum number of symptoms for diagnosis of attention deficit/hyperactivity disorder in adults and children is five and six, respectively. Depending on the existed symptoms, people suffered from this disorder can be categorized into three groups: attention deficit type, hyperactivity/impulsiveness type and combined type (American Psychiatric Association, 2013). The average beginning age for hyperactivity/impulsiveness and combined types are 4 and 5, respectively. Hence, most children with hyperactivity/impulsiveness and combined types have suffered from disorder before age of 7. However, the average beginning age of symptoms is after 6 for attention deficit type and in some cases, it is initiated after age of 7. Therefore, the symptoms of attention deficit/hyperactivity disorder initiate before school age in most cases [18, 20, 21, and 23].

Aggression is a behavior which aims to hurt it-self or others. In this definition, willing is important, i.e. hurting behavior is counted as aggression if it conducts intentionally to hurt it-self or others [18–25]. Aggression has devastating effects such as hurting it-self or others, unexpected death and dangerous behavior [26–29]. Aggression may be emerged in different forms. Its verbal and physical form show instrumental or behavioral components. Anger is the emotional form and hostility is the cognitive form of aggression [30]. Some possi-

*Afsaneh Jafarabadi, Corresponding Author, M.A. in Educational Psychology, Department of Educational Psychology, Faculty of Humanities, Islamic Azad University, Saveh Branch, Saveh, Markazi Province, Iran.

ble negative consequences of aggression are including fear, mutual aggression excitement, losing control, feel guilty, being alone and problems in mental health and social life [31, 32].

Regarding the privilege of aggression during childhood and its negative effects on various aspects of life, its treatment is especially interested and various investigations have been performed about various aspects of its treatment [33–35]. These studies range from pharmacotherapy, behavioral therapy and cognitive therapy to a combination of various methods [36–43]. The most important stable treatment of attention deficit/hyperactivity disorder is providing and maintaining an appropriate environment in the form of cognitive-behavioral therapy and pharmacotherapy [44, 45]. The final aim of treatment of attention deficit/hyperactivity disorder is enabling children to encounter with and overcome the problems during their life. It cannot be achieved through pharmacotherapy or forcing children to follow some rules but the only way to perform it is learning some methods of facing with people and some duties which are useful in daily performance of child. Many cognitive-behavioral therapy methods can describe with teaching, tarry-think-act [46–49]. This type of treatment is usually performed by therapists using play therapy [50–55]. Play therapy is a child-oriented technique which is used for treating the problems and disorders of children. Although applications of play therapy for problematic children have been emphasized in various studies, measuring the problematic behaviors, its aim and observation of its changes have not been widely reported. Play therapy is used for treating various disorders of children such as depression, fears, stress-induced behavioral problems, enuresis, nail chewing, lying, aggression, hyperactivity and attention deficit and it was effective in most cases [56, 57].

In evolution process, problems of children are mostly due to inability of adults to understand or to effectively respond to feelings and efforts of children in communication. In order to verbally communicate with children, play is a completely developed tool for explaining which is act for children same as speaking for adults. Play is a tool for children to express their feelings, communicate, describe their experiences, and emerge their dreams and self-actualization [58, 59]. At the other hand, play can be acted as a treatment which helps problematic children to solve their problems through their plays. In this method, children have opportunity to emerge and show their hurting feels and internal problems [60].

Cognitive-behavioral play therapy assumes that perception and interpretation of person from position determines his/her emotional and behavioral response to position. Cognitive therapy based on this approach that mental pathology is resulted from systematic error, falsification in perception and interpretation and events. Theoretically, emphasis is on interaction between person and the environment not on the person or the environment, separately. The interpretation of person from events is of very important role in many mental damages and this interpretation is resulted from interaction between the characteristics of person and identity of events that person encounters with. This treatment is assumed that emotion and behavior of people is mostly determined based on the method that is used to interpret the surrounding world. Based on this

approach, play therapy will be effective if activities have structured and objective and at the same time, brings self-motivation to child [61–69].

Some researchers in a research entitled as the effect of gravel play therapy on aggressive boys, found that play therapy decreased aggression level in test group [70, 71]. In addition, some scientists, through their study entitled as effectiveness of cognitive-behavioral play therapy on mitigating behavioral problems of children, resulted that cognitive-behavioral play therapy leads to decrease in behavioral problems of children [72–77]. Some researchers performed an investigation about the effect of painting therapy in mitigation of aggressive behaviors of students with mental retardation in Saveh. The data analysis indicated the meaningful reduction of aggressive behaviors of students with mental retardation in test group. In another research, performed a study about the efficiency of play therapy based on cognitive-behavioral approach on intensity of symptoms of attention deficit/hyperactivity disorder and found that this is an effective method for children and adolescents with attention deficit/hyperactivity disorder [78–80]. Moreover, some scientists conducted an investigation about the efficiency of cognitive-behavioral play therapy on aggression of children with conduct disorder and found that there is a meaningful difference between two groups regarding the difference of pretests and posttest marks about aggression [81–85].

Barkey (2012) considered the efficiency of cognitive-behavioral therapy on compatible skills and executive functions of hyperactive children and people suffered from learning disabilities which showed a meaningful difference between the investigated groups in variables of compatible skills and executive functions and he concluded that hyperactive children are of more problems than others in this regard. Fintez (2012) concluded that children with attention deficit/hyperactivity disorder without learning are of some problems in their executive functions. He claimed that such children have a high disorder in perception and compatibility with situations. Jansma and Kamb (2009) evaluated the effects of combined painting and play therapy in improving the compatible skills of hyperactive children. Firstly, they determined a specified time in a day during it the behaviors of test group was repeatedly happened and then, performed a suitable program for 1 hour before the specified time. The results indicated that incompatible behaviors decreased while compatible ones increased [86–94].

Regarding the review of research and above mentioned issues, there is a lack of research about the effect of play therapy based on cognitive-behavioral approach on aggression of preschool children with attention deficit/hyperactivity disorder. Further, this research may be a foundation for more future studies in the field of aggression of children with attention deficit/hyperactivity disorder [95–99]. Regarding its application, this research may be an important step towards mitigating and protecting aggressive behaviors in preschool level [100]. We are looking for evaluating the effectiveness of play therapy based on cognitive-behavioral approach on mitigating the aggression of preschool children with attention deficit/hyperactivity disorder [101–105].

2 RESEARCH METHOD

2.1 Research Plan and Participants

The type of experimental research plan was pretest-posttest with control group. The statistical population is including all children of 4–6 years of kindergartens of Saveh during education year of 2010–2015 that among them, 400 children were selected based on multistage random cluster sampling method and child symptom inventory questionnaire was completed for them. Then, 30 children with attention deficit/hyperactivity disorder, by authentication of criteria for entering to research (having attention deficit/hyperactivity disorder, aged between 4 and 6 and having physical and mental health), were randomly placed on two groups (15 people for test and 15 people for control) and were answered to preschool aggression questionnaire proposed.

2.2 Research Tool

(1) *Child symptom inventory questionnaire*: This questionnaire is a screening tool for most privilege psychological disorders. Its terms are based on forth version of diagnostic and statistical guide for psychological disorders. Regarding the importance of various information resources, this questionnaire has two lists of parents and teachers which compared to other comparisons and methods, its efficiency have been shown and it is an appropriate alternative as an accepted interview in psychology which is time saving. The sensitivity of child symptom inventory questionnaire based on the best cutting mark of 4, 5 and 7 for each attention deficit/hyperactivity disorder, mutual disobedience, conduct disorder were 75%, 89% and 89%, respectively, and its characteristic were 92%, 91% and 90%, respectively. In addition, the validity of questionnaire was estimated for parent and teacher forms as 90% and 93%, respectively.

(2) *Preschool aggression scale*: This scale is a questionnaire with 43 questions with Lickert rating scale for assessing physical, relational and reactive-verbal aggression of preschool children. This questionnaire was firstly designed using elementary children aggression questionnaire of aggression questionnaire of Saveh to evaluate various aspects of aggression in preschool children. This questionnaire which is completed by teacher or parents of children is including a general mark and four subscales as verbal-aggressive aggression, physical-aggressive aggression, relational aggression and impulsive anger. Marking in this questionnaire is based on 5 degree Lickert scale (none = 0, rarely = 1, one time per month = 2, one time per week = 3, most days = 4) in which the mark of each subscale is obtained from summation of related questions and the total mark is obtained from summation of all subscales' marks. In addition, the cutting point for selecting aggressive persons in this questionnaire is the summation of average and to times of standard deviation, i.e. 51%. The validity coefficient of Cronbach's alpha is 98% for whole of scale and for subscales of verbal-aggressive aggression, physical-aggressive aggression, relational aggression and impulsive anger are 93%, 92%, 94% and 88%, respectively.

Definition of education program: play therapy program based on cognitive-behavioral approach were performed for

test group in 10 sessions of 60 minutes, twice per week while control group did not received any learning. After completion of sessions, aggression questionnaire was conducted for both groups in same situation. The summary of sessions performed for children are as following:

Session (1): (a) Welcoming, explaining the objectives, review of session structure and main rules; (b) Checking out of parents' satisfaction forms; (c) Allegory baggage for understanding the treatment; (d) Representing some speeches about the importance and necessity and advantages of group working; (e) Introducing the members; (f) Performing pretest.

Session (2): (a) Defining play therapy; (b) Introducing various tools related to anger balloon game; (c) Playing game; (d) Representing practice for next session.

Session (3): (a) Review of previous session's practices; (b) Playing feeling anger scale; (c) Planning for next session.

Session (4): (a) Review of previous session's practices; (b) Playing paper shredding; (c) Planning for next session.

Session (5): (a) Review of previous session's practices; (b) Playing magic carpet; (c) Planning for next session.

Session (6): (a) Review of previous session's practices; (b) Playing clock alarm; (c) The practice for next session is utilizing some tools for children to play with them and ask them to explain their thoughts and feelings about them.

Session (7): (a) Review of previous session's practices; (b) Playing with artificial flower; (c) Planning for next session.

Session (8): (a) Review of previous session's practices; (b) Playing the art of striping; (c) Planning for next session.

Session (9): (a) Review of previous session's practices; (b) Playing the story of scarf.

Session (10): (a) General group discussion about education issues and learned methods; (b) Explaining the viewpoints of group members; (c) Performing posttest and acknowledgment and saying good luck to the group.

3 RESULTS AND DISCUSSION

Statistical indices of aggression pretest and posttest marks in test and control group. In order to examine the research hypothesis, single variable covariance analysis were used. To do this, the assumptions of single variable covariance analysis, namely normal distribution, were evaluated using Kolmogorov-Smirnov test ($P < 0.13$) and homogeneity of slopes ($P < 0.43$, $F = 4.37$ aggression). Hence, the necessary conditions for using single variable covariance analysis were met.

Covariance analysis of posttest mark of aggression variable after pretest adjustment shows that by eliminating the effect of pretest marks, the effect of play therapy based on cognitive-behavioral approach on posttest marks is meaningful ($P < 0.000$, $df = 1.17$, $F = 632.036$). In this regard, when the effect of pretest related to groups is eliminated, difference between groups is meaningful and it can be concluded that play therapy based on cognitive-behavioral approach is effective on mitigating the aggression of preschool children with attention deficit/hyperactivity disorder.

The current study aims to investigate the efficiency of play therapy based on cognitive-behavioral approach on aggression of preschool children with attention deficit/hyperactivity

disorder.

The results related to single variable covariance analysis were shown that play therapy based on cognitive-behavioral approach is effective on mitigating the aggression of preschool children with attention deficit/hyperactivity disorder. In this regard, through their study entitled as effectiveness of cognitive-behavioral play therapy on mitigating behavioral problems of children, resulted that cognitive-behavioral play therapy leads to decrease in behavioral problems of children. In addition, some scientists performed a study about the efficiency of play therapy based on cognitive-behavioral approach on intensity of symptoms of attention deficit/hyperactivity disorder and found that this is an effective method for children and adolescents with attention deficit/hyperactivity disorder. The results obtained by some researchers, who conducted an investigation about the efficiency of cognitive-behavioral play therapy on aggression of children with conduct disorder, were shown that play therapy based on cognitive-behavioral approach is effective on mitigating the aggression of children with conduct disorder. Some scientists evaluated the effects of combined painting and play therapy in improving the compatible skills of hyperactive children. The results indicated that incompatible behaviors decreased while compatible ones increased.

It can be said about the obtained results that regarding the theoretical and practical foundations of aggression and various treatments, aggression is a complex form of human behaviors in the society. Aggression is a reaction to failure and suppression of whims. As hyperactive children are not able to meet their demands, so they face to failure. In this case, they cannot fit with the environmental conditions, regulations and limitations of society, traditions, values and orders and hence, the suffer from incompatibility which leads to aggressive behaviors. Aggression is a form of reaction to obstacles and the reason of threat. When hyperactive child forces to accept environmental phenomena and feels that conditions are not under control, aggressive behaviors will be emerged. In play therapy based on cognitive-behavioral approach, environmental obstacles such as parents are removed and child can easily emerge the aggression. As a result, child emerges his /her accumulated failures in an appropriate medium through aggression, learns how to control it, and makes it internal with appropriate reflection.

The results of the current research are noted the necessity of paying more attention to aggression in children with attention deficit/hyperactivity disorder since it affects not only the familial and social compatibility of such children, but also may be led to more severe behavioral and emotional disorders and endangered the future education of such children if aggression of children with attention deficit/hyperactivity disorder continued and intensified.

4 CONCLUSION

As previously mentioned, it is not easy to ignore aggression of children with attention deficit/hyperactivity disorder. In this regard, play therapy based on cognitive-behavioral approach can be counted as a valuable service. Therefore, it suggests

that psychologists and psychiatrist consider the advantages of this intervention method along with pharmaceutical options. Moreover, using play therapy based on cognitive-behavioral approach is suggested for future studies to mitigate aggressive behaviors of children with mutual disobedience disorder.

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