The efficacy of short-term play therapy for children in reducing symptoms of ADHD

Marzie Hashemi (1)
Shokooh sadat Banijamali (2)
Zohre Khosravi (3)

(1) Ph.D. student of psychology, Alzahra University
(2) Associate professor, Alzahra University
(3) Professor, Alzahra University

Corresponding author:
Marzie Hashemi
Alzahra University
Iran
Email: hashemi@alzahra.ac.ir

Received: February, 1, 2018; Accepted: March 6, 2018; Published: April 1, 2018
Citation: Hashemi M. et al. The efficacy of short-term play therapy for children in reducing symptoms of ADHD. World Family Medicine. 2018; 16(4):76-84. DOI: 10.5742/MEWFM.2018.93370

Abstract

Objective: The purpose of this study was to evaluate the efficacy of short-term play therapy for children in reducing the symptoms of ADHD.

Method: This is a single-subject study in a base single-line method. Six children of 7-10 years old with ADHD were selected through purposive sampling. Participants received short-term play therapy. Every participant received 10 sessions of intervention and the follow-up phase was run after three months. Conners Parent Questionnaire and CBCL were used as the research instrument.

Results: The results showed that short-term play therapy for children is effective in decreasing symptoms of ADHD.

Conclusion: According to the results, short-term play therapy for children can be used as an appropriate intervention in reducing the symptoms of ADHD.

Key words: Short-term play therapy for children, ADHD

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common neurobehavioral disorders diagnosed in children (Barkley, 2012). It is deemed as the most commonly diagnosed mental disorder in children, and about 3% - 5% of children suffer from it around the world (Franck-Briggs, 2013). It usually begins from preschool age and often continues until adulthood (Halperin & Healey, 2011). Although psychiatric drugs are still the common treatment, the use of it to treat ADHD has decreased dramatically so that referring to a psychiatrist has dropped from 15% in 2003 to 6% in 2010 and attention is continuously moving away from psychiatric treatment in order to manage the disorder (Kaduson, 2014).

Many studies have been conducted on the effectiveness of various treatments for ADHD, such as behavioral or cognitive-behavioral therapy. A number of experts also have called for an answer to the question whether therapeutic play could act as an effective intervention for ADHD. Over the past 20 years, the efficiency of play therapy for children with ADHD has been tested clinically and experimentally and is increasingly recognized as a useful treatment tool (Barzegari & Zamini, 2011; Brraton et al. 2013; Ray, Schottelkarb & Tsai, 2007). Alternative play therapy is a suitable psychological treatment for a wide range of psychological problems in children and adolescents aged between 3-16 years (Harris & Landreth, 1997). Play therapy is a method that psychologists and researchers have used for decades to treat a wide range of disorders and problems and have demonstrated its effectiveness (Halperin et al. 2013; Barton, Bankart and Davis, 2005). Play therapy potential such as problem solving, self-regulation, and direct and indirect education (Schafer, 2014) can help children with ADHD to diagnose their problems and to communicate with them through

playing and full participation in treatment (Kaduson, 2014).

To treat ADHD requires involvement of many specialists, including doctors, psychologists, educational experts, social workers and play therapists. For years, each of these specialists treated ADHD by themselves and had their own definitions and ideas for evaluation and treatment. The short-term play therapy is a combination of different clinical strategies tested with a multi-dimensional approach that is used for children of ADHD to help treat them more efficiently. This multidimensional perspective requires parents to be educated on the nature and diagnosis of the disorder as weekly parental training, education on medication therapy if necessary, classroom interventions, social skills training, and individual play therapy (Kaduson, 2006). Therefore, this treatment seems to help lessen the symptoms of ADHD. The present study aims to investigate the effectiveness of short-term play therapy for children in reducing ADHD.

Method

A single subject or single case and A-B design were used to carry out the research. Achenbach Child Behavior checklist (CBCL) was applied three times to determine the baseline before the intervention. Standard questionnaires and parent interviews before the intervention were also used to collect data. In the process of the interventions, Conners parent questionnaire was filled out by the mother every session and CBCL was completed by her at the first, fifth and tenth sessions.

In this research, with the help of public and private schools as well as consultation centers associated with the Ministry of Education, the subjects were selected by purposive sampling out of the children with ADHD between 7- 12 years old. They were selected according to Conners parent rating scale, the DSM- 5 diagnostic criteria and the results of the interview. Exclusion criteria included other psychiatric disorders. The children participated in the therapeutic-research program after receiving family consent. The research sample consisted of 6 subjects.

Individual characteristics questionnaire: This questionnaire was made by the researcher and included personal information.

Conners Parent Rating Scale (CPRS) (Revised): This is the popular scale of ADHD from the parental perspective (Goldstein & Goldstein, 1998). The questionnaire has 26 questions and has a 4-point Likert scale of never, to very high, completed by mothers. It also consists of 4 sub-scales of attention deficits, hyperactivity / impulsivity and oppositional defiant disorder (ODD). The content validity of the scale has been confirmed (Goldstein & Goldstein, 1998). The construct validity of the Conners form has been obtained using factor analysis methods and the differential validity of the questionnaire's ability to differentiate between the normal and clinical groups with ADHD has been strongly confirmed (Zargarinejad &Yazdan Doost, 2008).

Child Behavior Checklist (CBCL): The Child Behavior Checklist is a series of the Achenbach System of Empirically Based Assessment (ASEBA) addressing the problems of children and adolescents based on 8 factors: anxiety / depression, isolation / depression, physical complications, social problems, thinking problems, attention problems, ignoring the rules and aggressive behavior. Two factors of ignoring the rules and aggressive behavior constitute the second-order factor of exogenous problems. The questionnaire assesses emotional-behavioral problems as well as the educational and social competencies of 6-18 years old children from the parents' perspective. It is filled out in 20 to 25 minutes (Minaei, 2005). This checklist is completed by the parents, the person who cares for the child or anyone who treats the child in a family-like environment and fully understands him or her. The respondent first answers questions that measure the child's competencies while s/he responds to open-answer questions that relate to the child's illness, disability, and the main concerns of the respondent about the child and his/her attitudes to the best characteristics of the child. The form is followed by questions on the child's emotional, behavioral, and social problems. The questionnaire consists of 115 questions about the types of behavioral patterns of children. The questions are responded to as a 3-point Likert scale ranging from 0 to 2. The point 0 is assigned to items that are never observed in the child's behavior; the point "1" is given to the states and behaviors that are sometimes observed and the score "2" is given to cases that usually or always are observed in the child's behavior. The overall validity coefficients of CBCLs have been reported as 0.97 via Cronbach's alpha and 0.94 via a retest. Content validity (selection of questions logic and use of first-class analysis of questions), criterion validity (using a psychiatric interview with the child, and correlation with CSI-4 scale) and construct validity (internal relations of scales and group differentiation) of the checklists have been reported desirable (Minaei, 2006).

Short-term play therapy for children derived from Kaduson (2006): A short-term play therapy for children is based on ADHD primary components including attention (focus range), hyperactivity (restlessness, squirm in their seats) and impulsivity (acting without thinking, poor planning ability, low tolerance, etc.). Treatment goals are focused on creating the child's self-concept in various areas of deficit, increasing their ability to stay focused on assignments, encouraging them to express self-control, and educating the child to pay attention to the results of their actions. This treatment plan is a 10-week program that uses new strategies to achieve more success. The protocol includes a 15-minute visit with parents separately and then with the child individually in the play therapy room for 35 to 50 minutes. This program directly trains both parents and children in the ways of managing ADHD.

Findings

To evaluate the effectiveness of short-term play therapy for children in reducing the symptoms of ADHD, participants were weekly measured by the Conners Parent Questionnaire. In this research, a single-subject B-A design was used; A refers to the baseline and B refers to the intervention. Results of each subject are summarized in the following tables.

Table 1: Within/between-condition visual analysis of ADHD variables for Participant No. 1, Amir Mohammad

Variable	Baseline	Within-condition Intervention Line
Sequence of conditions	A	B
Length of conditions	3	8
Median of conditions	3.00	2.73
The range of changes	1.03	1.54
Stability bar	2.40-3.60	2.18-3.27
The percentage of data in the stability bar	100%- Stable	50% - Unstable
First half median	3.06	3.33
Second half median	3.29	2.60
Relative level change	-0.23	0.73
First value of data	2.55	2.84
Last value of data	3.00	2.15
Absolute level change	0.45	0.69
Trend direction	Ascending	Descending
Percentage of points inside the stability range	100%- Stable	100%- Stable

Variable	Between-condition After the intervention (B to A)
Comparison of the conditions	B to A
The number of variables changed between the conditions A and B	1
Changing the trend between the conditions A and B	Descending to ascending
Targeted effect	Positive
Changes in the stability of the process	Stable to stable
Relative level change	(3.33 to 3.29) −0.04
Absolute level change	(2.84 to 3.00) 0.16
Change in the median level	(2.73 to 3.00) 0.27
Change in the average level	(2.77 to 3.04) 0.27
Percentage of non-overlapping data (PND)	25%
Percentage of overlapping data (POD)	75%

Table 2: Within/between-condition visual analysis of ADHD variables for Participant No 2, Zeynab

Variable	Baseline	Within-condition Intervention line
Sequence of conditions	A	B
Length of conditions	3	9
Median of conditions	3.35	1.85
The range of changes	0.27	1.88
Stability bar	2.68-4.02	1.26-1.89
The percentage of data in the stability bar	100%- Stable	56%- Unstable
First half median	3.27	2.50
Second half median	3.23	1.35
Relative level change	-0.06	1.15
First value of data	3.35	3.23
Last value of data	3.46	1.35
Absolute level change	-0.12	1.88
Trend direction	Ascending	Descending
Percentage of points inside the stability range	100%- Stable	67%- Unstable

Variable	Between-condition After the intervention (B to A)
Comparison of the conditions	B to A
The number of variables changed between the conditions A and B	1
Changing the trend between the conditions A and B	Descending to ascending
Targeted effect	Positive
Changes in the stability of the process	Unstable to stable
Relative level change	(2.50 to 3.33) 0.83
Absolute level change	(3.32 to 3.46) 0.23
Change in the median level	(1.58 to 3.35) 1.77
Change in the average level	(1.98 to 3.33) 1.35
Percentage of non-overlapping data (PND)	89%
Percentage of overlapping data (POD)	11%

Table 3: Within/between-condition visual analysis of ADHD variables for Participant No 3, Amir Abbas

Variable	Baseline	Within-condition Intervention line
Sequence of conditions	A	B
Length of conditions	3	9
Median of conditions	2.96	2.42
The range of changes	0.42	1.15
Stability bar	2.37- 3.55	1.94-2.91
The percentage of data in the stability bar	100%- Stable	67%- Unstable
First half median	2.94	2.58
Second half median	3.06	2.00
Relative level change	-0.12	0.58
First value of data	2.73	2.88
Last value of data	2.96	1.77
Absolute level change	-0.23	1.12
Trend direction	Ascending	Descending
Percentage of points inside the stability range	100%- Stable	89%-Stable

Variable	Between-conditions After the intervention (B to A)
Comparison of the conditions	B to A
The number of variables changed between the conditions A and B	1
Changing the trend between the conditions A and B	Descending to ascending
Targeted effect	Positive
Changes in the stability of the process	Stable to stable
Relative level change	(2.56 to 3.06) 0.48
Absolute level change	(2.88 to 2.96) 0.08
Change in the median level	(2.42 to 2.96) 0.54
Change in the average level	(2.27 to 2.95) 0.68
Percentage of non-overlapping data (PND)	89%
Percentage of overlapping data (POD)	11%

Table 4: Within/between-condition visual analysis of ADHD variables for Participant No 4, Mani

Variable	Baseline	Within-condition Intervention line
Sequence of conditions	A	B
Length of conditions	3	9
Median of conditions	3.42	2.15
The range of changes	0.77	1.00
Stability bar	2.74-4.11	1.72-2.58
The percentage of data in the stability bar	100%- Stable	89%- Stable
First half median	3.19	2.31
Second half median	3.35	2.12
Relative level change	-0.15	0.19
First value of data	3.42	2.96
Last value of data	3.73	1.96
Absolute level change	-0.31	1.00
Trend direction	صعودي	نزولي
Percentage of points inside the stability range	100%- Stable	100%- Stable

Variable	Between-condition After the intervention (B to A)
Comparison of the conditions	B to A
The number of variables changed between the conditions A and B	1
Changing the trend between the conditions A and B	Descending to ascending
Targeted effect	Positive
Changes in the stability of the process	Stable to stable
Relative level change	(2.31 to 3.35) 1.04
Absolute level change	(2.96 to 3.73) 0.77
Change in the median level	(2.15 to 3.42) 1.27
Change in the average level	(2.26 to 3.37) 1.11
Percentage of non-overlapping data (PND)	100%
Percentage of overlapping data (POD)	0%

Table 5: Within/between-condition visual analysis of ADHD variables for Participant No 5, Ali

Variable	Baseline	Within-condition Intervention line
Sequence of conditions	A	B
Length of conditions	3	9
Median of conditions	3.04	1.92
The range of changes	0.38	1.50
Stability bar	2.43-3.65	1.54- 2.31
The percentage of data in the stability bar	100%- Stable	33%- Unstable
First half median	2.94	2.42
Second half median	3.13	1.42
Relative level change	-0.19	1.00
First value of data	2.85	2.77
Last value of data	3.23	1.27
Absolute level change	-0.38	1.50
Trend direction	Ascending	Descending
Percentage of points inside the stability range	100%- Stable	100%- Stable

Variable	Between-condition After the intervention (B to A)
Comparison of the conditions	B to A
The number of variables changed between the conditions A and B	1
Changing the trend between the conditions A and B	Descending to ascending
Targeted effect	Positive
Changes in the stability of the process	Stable to stable
Relative level change	(2.42 to 3.13) 0.71
Absolute level change	(2.77 to 3.23) 0.46
Change in the median level	(1.92 to 3.04) 1.12
Change in the average level	(1.95 to 3.04) 1.09
Percentage of non-overlapping data (PND)	100%
Percentage of overlapping data (POD)	0%

Table 6: Within/between-condition visual analysis of ADHD variables for Participant No 6, Mohammad Hossein

Variable	Baseline	Within-condition Intervention line
Sequence of conditions	A	B
Length of conditions	3	9
Median of conditions	2.81	2.23
The range of changes	0.42	1.42
Stability bar	2.25- 3.37	1.78-2.68
The percentage of data in the stability bar	100%- Stable	56%- Unstable
First half median	2.94	2.62
Second half median	2.87	1.77
Relative level change	-0.19	1.00
First value of data	2.81	2.88
Last value of data	2.65	1.46
Absolute level change	0.15	1.42
Trend direction	Stable	Descending
Percentage of points inside the stability range	100%-Stable	100%- Stable

Variable	Between-condition After the intervention (B to A)
Comparison of the conditions	B to A
The number of variables changed between the conditions A and B	1
Changing the trend between the conditions A and B	Descending to stable
Targeted effect	Positive
Changes in the stability of the process	Stable to stable
Relative level change	(2.62 to 2.87) 0.25
Absolute level change	(2.88 to 2.65) -0.23
Change in the median level	(2.23 to 2.81) 0.58
Change in the average level	(2.20 to 2.85) 0.65
Percentage of non-overlapping data (PND)	89%
Percentage of overlapping data (POD)	11%

As shown by Tables 1 to 6, short-term play therapy for children is effective in reducing ADHD.

Discussion and Conclusion

The results of the study indicated that short-term play therapy for children is effective in reducing attention deficit hyperactivity disorder. To explain this result we can say that through playing, children naturally express their inner self. Therefore, the treatment that uses play for children provides a good growth environment for communication and excellence (Landerth, 2002). In addition, parental involvement in play therapy extends the therapeutic effects (Bratton, Ray, Rhine & Jones, 2005). In the short-term play therapy, parental involvement is a fundamental principle in the treatment process. During each session, parents should make specific activities during the week, i.e., they play an active role in the child's treatment process. Parental involvement and their active participation in the treatment process will increase the fortifications received by the child, and the proper behaviors of the child with ADHD will be further affected by receiving these fortifications.

To train parenting practices of parents of ADHD children is another important factor in short-term play therapy. The results of research on intervention programs for parents of ADHD children suggest that the symptoms of ADHD have reduced among 45% of these children. Furthermore, the intervention program has had a positive impact on improving the parents' mental health and qualification as well as on parent-child interactions (Daley & O' Brien, 2013). In a short-term play therapy for children, the therapist provides parents with the necessary training regarding the criticisms and comments of other people who are not aware of the situation and gives them advice on dealing with such situations (Kaduson, 2006). Such training, by itself, leads to decrease in the parents' stress; as a result, the therapeutic effects will clearly appear. Moreover, this treatment is multifaceted so that the treatment and education given to parents can bring about effective outcomes. Therefore, short-term play therapy can be used as an effective treatment to reduce symptoms of ADHD.
As a limitation, it can be noted that the treatment used in this study was designed for the western population of the country and despite the reforms, there may be problems in using it for all of the Iranian population. Therefore, other studies on the effectiveness of short term play therapy for other mental disorders should be conducted using other statistical methods to analyze the research data.

Acknowledgments
The researcher would like to acknowledge Keramat Charity Institute, Dr. Parisa Ahmadi Ghotbi, Mr. Mahmoud Mola'i and Mr. Abdolhossein Hashemi, who collaborated on this study.

References

Barkley, R. A. (2012). Executive functions: What they are, how they work, and why they evolved. Guilford Press.
Barzegary, L., & Zamini, S. (2011). The effect of play therapy on children with ADHD. Procedia-Social and Behavioral Sciences, 30, 2216-2218.
Bratton, S. C., Ceballos, P. L., Sheely-Moore, A. I., Meany-Walen, K., Pronchenko, Y., & Jones, L. D. (2013). Head start early mental health intervention: Effects of child-centered play therapy on disruptive behaviors. International Journal of Play Therapy, 22(1), 28.
Bratton, S. C., Ray, D., Rhine, T., & Jones, L. (2005). The efficacy of play therapy with children: A meta-analytic review of treatment outcomes.
Daley, D., & O'Brien, M. (2013). A small-scale randomized controlled trial of the self-help version of the New Forest Parent Training Programme for children with ADHD symptoms. European child & adolescent psychiatry, 22(9), 543-552.
Frank- Briggs, A. I. (2013). Attention deficit hyperactivity disorder(ADHD). Journal of pediatric Neurology, 9, 291-298.
Goldstein, S., & Goldstein, M. (1998). Managing attention deficit hyperactivity disorder in children: A guide for Practitioner (2nd ed). New York: Wiley.
Halperin, J. M., & Healey, D. M. (2011). The influences of environmental enrichment, cognitive enhancement, and physical exercise on brain development: can we alter the developmental trajectory of ADHD? Neuroscience & Biobehavioral Reviews, 35(3), 621-634.
Halperin, J. M., Marks, D. J., Bedard, A. C. V., Chacko, A., Curchack, J. T., Yoon, C. A., & Healey, D. M. (2013). Training executive, attention, and motor skills: a proof-of-concept study in preschool children with ADHD. Journal of attention disorders, 17(8), 711-721.
Harris, Z. L., & Landreth, G. L. (1997). Filial therapy with incarcerated mothers: A five week model. International Journal of Play Therapy, 6(2), 53.
Jent, J. F., Niec, L. N., & Baker, S. E. (2011). Play and interpersonal processes. Play in clinical practice: evidence-based approaches. Guilford Press, New York.
Kaduson, H. G. (2006). Short-term play therapy for children with attention-deficit/hyperactivity disorder. Short-term play therapy for children, 2, 101-142.
Kaduson, H. G. (2014). Play Therapy with Children with Attention Deficit/Hyperactivity Disorder. Play Therapy: A Comprehensive Guide to Theory and Practice, 415.
Landreth, G. L. (2002). Play therapy: The art of the relationship. New York, N.Y.: Brunner- Rutledge.
Minaei, Asghar (2006). Adaptation and standardization of Achenbach Child Behavior Checklist, Self-evaluation Questionnaire and Teacher's Report Form, Research on Exceptional Children (1) 19, 529-558
Ray, D. C., Schottelkorb, A., & Tsai, M. H. (2007). Play therapy with children exhibiting symptoms of attention deficit hyperactivity disorder. International Journal of Play Therapy, 16(2), 95.
Schaefer, C. E. (2014). The Therapeutic Powers of Play. Northvale, NJ: Aronson.
Zargarinejad, G., and Yazdan Doost, Y. (2008). Effectiveness of parent training on behavioral problem children with ADHD (single subject study). Journal of Psychological studies, 2,.29-48. [Persian]
Barton, G. R., Bankart, J., & Davis, A. C. (2005). A comparison of the quality of life of hearing-impaired people as estimated by three different utility measures.. International Journal of Audiology, 44(3), 157-163.