

Original Article

The Effect of Training Play Therapy to the Mothers of Autistic Children to Improve the Verbal and Nonverbal Skills of their Children

Jinus Amrollahi far¹, Hamidreza Hatami^{2*}, Hassan Ahadi¹

¹Department of Psychology, Science and Research Branch, Islamic Azad University, Tehran, Iran

²Department of Psychology, Imam Hossein University, Tehran, Iran

Received: 28 December, 2015; Accepted: 21 June, 2016

Abstract

Background: Children suffering from autism hardly learn and tend to be involved in routine interactions with adults and other children. The main purpose of the present study was to investigate the effectiveness of play therapy training to mothers of autistic children on verbal and non-verbal improvement of their children.

Materials and Methods: 30 autistic children with intermediate degree of autism were selected based on availability sampling procedure and were divided into experimental and control groups. Having collected the intended data and analyzed them with SPSS software.

Results: The study finally revealed that the play therapy training significantly improved the social skills of autistic children.

Conclusion: These results suggested that applying play therapy with families and teach it to the mothers that have autistic children.

Keywords: play therapy, autism, verbal and non-verbal skills of children, mother's role

*Corresponding Author: Hamidreza Hatami, Professor, Department of Psychology, Imam Hossein University, Tehran. Email: hhatami83@yahoo.com

Please cite this article as: Amrollahi far J, Hatami HR, Ahadi H. The Effect of Training Play Therapy to the Mothers of Autistic Children to Improve the Verbal and Nonverbal Skills of their Children. *Novel Biomed.* 2017;5(1):1-7.

Introduction

Normal humans are social creatures. They typically look at others around them carefully, return to the sound they hear, take fingers, smile, and etc. However, children suffering from autism hardly learn and tend to be involved in routine interactions with adults and other children. In a similar vein, human history has always witnessed the continuous efforts of man to know more about him, flourish his capabilities and innate talents, and also to detect threatening factors and ways of dealing with them. These threatening factors are different types and many of

them are largely unknown. Given the increasing prevalence of autism in recent years, finding appropriate ways to treat these patients is of great importance (Kim,J,2006).

The purpose of the current paper is to look into children whose autism disorder has been confirmed by psychologist and in scale of Garz's grading have a score between 90-110 (autism disorder, medium level).

Methods

The study was in essence and an applied experimental type of research with pre-test, post-test control group

design with follow-up step.

Statistical population, sample size and sampling method:

The population of the study included autistic children with average degree of autistic in child care centers of autism. Among the care centers for autistic children, two of them were selected based on their availability. Among each center, two classes were picked out. In addition, the selected sample consisted of 30 autistic children with autism average degree in 2015-2016 year. Furthermore, they were divided into two control and experimental groups. Cohen's method was also used to determine sample size. The method alpha turned out to be 0.05 and affect volume 0.05. In this case, with a test power equal to 0.76 15 participants might be selected.

Instruments: In order to collect the intended data, two instruments were used. The first one was GARS autism scale¹. This scale has been developed to measure the severity and probability of autism. It has also the capability to distinguish individuals suffering from autism and those suffering from other growth disorders. It consists of six sections: demographic information, summary of scores, a guide to interpretation, the way of responding to items, key items. As with reliability, Cronbach alpha was used and turned out to be 0.89².

The other instrument employed in the study was interaction-social skills checklist² that developed to observe and measure social skills. Its items have been compiled by considering the characteristics of autistic children social and communicative skills and also findings of relevant books and articles. Moreover, its reliability by Cronbach alpha turned out to be 0.87. It consists of three sub-sections: verbal-linguistic skills (10 items), non-verbal skills (10 items), and metalinguistic skills (18 items).

Intervention Procedure: Criteria for inclusion and exclusion:

1. No risk of chronic physical diseases
2. Average degree in autism

Intervention method:

Sessions 1 and 2: In these sessions, the intervention involved initial familiarity and play with small and soft balls and dolls as the children enjoy.

Session 2: This session included interaction with children through hand puppets and trying to make their eye contact with dolls, greeting, and asking their names by puppets.

Sessions 4 to 6: These sessions included drawings of homunculi persons who were smiling, crying, and angry. The children were also asked to practice various feelings. The children were encouraged when they smile at smiling pictures.

Sessions 7 to 10: These sessions involved displaying and explaining the story book illustrations by dolls and then doing the action of any image such as getting permission by the doll and the child.

Session 10 to 12: These sessions included playing with colored cubes, cooperation while arranging the cubes, gathering when falling on the ground, thanking for taking cubes from one another, and saying "here you are" in order to give the cubes to each other (child and doll).

Sessions 13 and 14: These sessions included playing with a kite on which smiling and frowned dummies were drawn and children were expected to smile with the smiling dummy and to stroke the frowning one if the kite was to fall on the ground.

Sessions 16 and 17: These sessions included two dolls playing with each other and with the children. In these sessions, the dolls, play a game with each other (for example painting) and during the game they do some actions (like giving pencil) and thank each other. Furthermore, the dolls played a child's favorite game with him, such as ball games and considering images of story books, they emulated their behavior. Many of trainings during the games in all sessions were done in different ways, for example, asking for children's permission, trying to establish eye contact with dolls, giving means required, replying to the questions asked, etc.

Data Collection Procedure: Based on the purpose of the research and prepared the required instruments, the researcher attended two care centers of autistic children and picked out 30 of them based on their availability and accessibility. Then, they were randomly assigned to two groups of control and experimental (each group 15 children) and the social pre-tests were given to them. After measuring their skills, the experimental group participants took part in the intended group intervention sessions, but the control group participants did not take part in any sessions. The experimental group underwent play therapy by mothers. After two months, the post-test measurement was done.

Data Analysis Procedure: In order to analyze the descriptive part of the gathered data, mean, standard deviation, and linear and column graphs were used. Furthermore, given the point that the study was of pre and post-test control group design, SPSS in general and Covariance method in particular was used in the inferential statistic part.

Results

This study includes all the necessary assumptions to analysis of variance. To put it clearly, crooked and stretch, multi-linear and uni-linear, homogeneity of variance-covariance matrices, and also homogeneity of variances were investigated. All analyses conducted in the present study were performed by using SPSS software. Table 1 shows the mean, standard deviation, minimum and maximum age of participants in experimental and control groups. As it can be seen, in the experimental group the mean age of 7.4 years and 5 years to 9 years are variable.

Additionally, the mean age of the control group (7.06 years) was lower than that of the experimental group. The frequency of age of individuals is shown in the following graph. It also shows that the age distribution has a slight negative Skewness.

The frequency percentage and density percentage related to the gender of subjects have been shown in Table 2. As it can be seen, the total number of individuals is 30. Also the number of girls is less than that of boys in this study. It also shows that that in the experimental group, the number of girls is less than that of boys. Similarly, in the control group, the number of girls is less than the number of boys as well.

The education degree of the mothers in the present study sample included "diploma", "associate", "Bachelor", "Master" and "Doctor". Furthermore, their education degree frequency and frequency

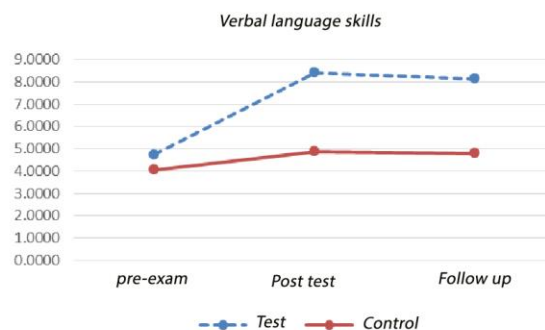


Figure 1. verbal skills.

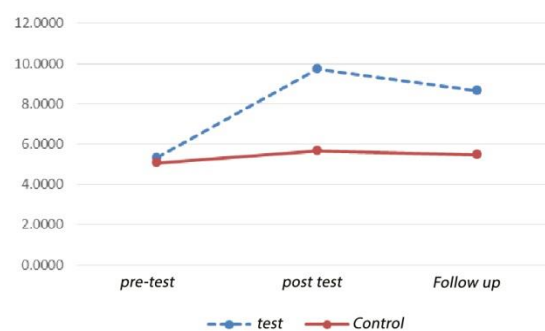


Figure 2. Non-verbal linguistic skills.

percentage have been shown in Table 3. According to this table, majority of the mothers (33.3%) has a bachelor's degree. The communication skills and its components have been separately described in the following chart.

Discussion

Joint attention is, in fact, the primary sign of such a disorder. Joint attention is usually defined as the harmonious existence of attention among people, objects and its development in natural growing begins between 6 and 18 months. Joint attention is not only related to learning of social relationship and language ability over the growth of the child. Children suffering from autism are not successful in sharing

Table 1: Mean, standard deviation, minimum and maximum age of participants in test and control groups.

		Mean	SD	minimum	maximum
age	experimental	7.40	1.35225	5	9
	control	7.06	1.27988	5	9

attention and as a result, have some problems in their social interactions, too³. In a study, children infected to autism are compared with usual growing ones⁴. In this study, children infected to autism had much less eye contact with examiner for sharing the pleasure of playing with toy compared to normal children. Additionally, the possibility of their answering to social complex interactions such as demanding for changing or following the directions were considerably less than that of normal children. In addition, Rittman⁵ showed in the study that joint attention, social dependence and connection are behaviors that are likely to be seen in children infected to autism with growth disorder. In a similar vein, Schribmann⁴ studied on relationships between joint attentions and the following growth of language and found out that children infected to autism showed a shortage in skill of nonverbal joint attention and it seemed that joint attention defectiveness for growing of children infected to autism was more predictable in 13 months later. Children infected to autism that show joint attention at the beginning of life developed more verbal skills than the children that have not grown joint attention⁶. In fact, a relationship between joint attention and language growth of children infected to autism has been diagnosed⁷.

In summary, joint attention is theoretically related to two central areas of disorder in autism: language and social growth. Joint attention plays a significant role in natural growing of children and lack of it in children suffering from autism has been considered by researchers in treating autism⁸.

Playing has a salient important role in growth and evolution of mental and physical faculties of child. Children learn discipline thorough playing and feeling of competition grows in them. Playing is a fun activity and allows children to enjoy playing and provides good times for them. It also makes children learn social relations and rules of the game and generalize them to the routine life. Autistic children do not have any tendency for social playing and having relationship with others and this, in turn, leads to defectiveness in their mental, physical and social growing. Relationship means to transfer a message from speaker to listener. There are many methods for transferring information such as speech, gesture language, use of picture, written communication, etc.

Table 2: The frequency and frequency percentage related to gender of subjects.

gender	frequency	frequency percentage	density percentage
Girls	13	43.3	43.3
Boys	17	56.7	100.0
total	30	100.0	

Autistic children usually have problem in communicative skills. Developing these skills in autistic children has a different pattern. Additionally, the speed of language development in them is slow. These children have difficulty in making creative use of their language as well. Most of them repeat the words and sentences they hear like a robot. According to a survey study⁹, play therapy is the most proper method for 3 to 11 years old children. Learning is a key function in life; children learn through playing. Jean Piaget believes that playing is a main tool for simplification or supporting children's mental growing. Piaget believes that type of playing in which children are involved needs to be a particular level of cognitive complexity to be effective. Playing has also been considered as an important strategy for teachers in simplification of children's growing in cognitive, social / emotional, motor, and language fields. Because of the benefits of playing in normal growth, its role in autism area (autism) has recently been taken into consideration by researchers. Children suffering from autism have considerably different playing behaviors. Many researches have diagnosed that children infected to autism have shown much less playing tendencies in groups. They did not use toys in a complex and creative way. Instead, their game is usually repetitive and stereotype and lack any considerable innovation. Thus, the belief is that playing skills of children infected to autism has been damaged¹⁰.

Training play to mothers of autistic children can

Table 3: Mean, standard deviation, minimum and maximum of the education of overall sample.

education	Frequency	frequency percentage
Diploma	5	16.7
Resource	8	26.7
BS	10	33.3
MSc	6	20.0
Ph.D.	1	3.3
Total	30	100.0

increase the relationship between child and others and reinforce the socialization of child. Playing provides a chance for children to have fun and also to attract others' attention. This process in many cases leads to reducing the severity of behavioral problems. Additionally, playing is a way for training Physical, verbal and social essential skills and accelerate the growth of creativity in children. Play therapy is one of the effective methods in the treatment of cognitive and mental problems of children. Generally, playing has an important role in the growth of children and during the game, many of the properties; issues pertaining to the growth of children might be found out⁹. Most parents of children who have improper behavior receive many suggestions and tips from others when confronted with other people in the society and hearing these words might be very hard for them and especially for parents of autistic children.

Most of people do not know about autism disorder and cannot recognize its signs as these children are quite natural and the same as normal ones in term of appearance. Usually community sympathizes with the mothers who have children with Down syndrome or Cerebral Palsy and their children are supported. However, autistic children's parents do not have such supports because many of people do not know that autistic children need special attention and affection. Given the point that in Iran, autistic children are not

educated in school with normal children, interventions that are done in order to improve their social skills need to be done in family environment and with corporation of family members. Moreover, since autistic children spend lots of their time in house and near family members, these children's mothers' in house condition or social environment can significantly help to the growth of their social skills.

Diagnostic guide (DSM 5) considers autism rage disorders a subset of growing incisive disorders. Furthermore, growing incisive disorders includes: autism disorder, Rett disorder, Childhood disintegrative disorder, Asperger's disorder and another sample that is not recognized¹¹.

The main signs of autism are Anomaly in social, communicative, and behavioral interactions. The signs of autism are typically started under three year's old¹⁰.

In fact, game is an activity to which children devote most of their energy and pleasure. In other words, game is not merely a collection of structured or unstructured activities. It is, in fact, attitude reflected in the activities of childhood. In short, games represent the essence of childhood and without it, children might not have a complete and balanced growth. Using methods of game to fix the problem of children is referred to as "play therapy"¹². In this method, different activities and ways are used so that

Table 4: Analysis of variance and post-test scores on verbal linguistic communication skills in experimental and control groups with control of pre-test.

Dependent variable	Source	Total squares	Df	Mean square	F	Significance level	Efficacy
linguistic-verbal Posttest	Pre-test	66.686	1	66.686	54.264	0.000	0.668
	Group	19.816	1	19.816	16.125	0.000	0.374
	Error	33.181	27	1.229			
	Total	684.000	30				
linguistic-verbal follow-up	Pre-test	68.539	1	68.539	31.053	0.000	0.535
	Group	56.133	1	56.133	25.432	0.000	0.485
	Error	59.594	27	2.207			
	Total	1466.000	30				

the child can drain his excitement. However, it has specific principles and without observing them it would be hard or even impossible to make effective use of play therapy. For example, the room where the play is to be done should be large enough and teaching the rules should be done at the beginning of game. Security, light and space are also essential factors and air temperature should be balanced. The therapist(s) should also have certain characteristics and they are expected to be able to establish a warm and friendly relationship with the child. They should also have adequate verbal and non-verbal communication skills with the child and make use of hand gestures and voice tone changes in the game effectively. Therapists are also expected to be a good partner in the game for children and before entering the game room, they should know about any probable relevant issue that might happen in the room. The end of the game should also be specified and the child should know when the game is finished¹³.

Methodologically, play therapy is of two types: direct and indirect. In the first type (by LED), the therapist is responsible for guiding and interpreting how data undertakes the treatment; and in the second type (non-leadership), the therapist can give this to the child¹⁴. Play therapy is an indirect interaction between child and adult done through symbolic communication in the game looking for ways to reduce the child's emotional perturbations and emotional discharge,

reduce the impact of painful reorienting impulses, and corrective emotional experiences. Play therapy is a proactive approach that can be used individually or in groups in such a way that allows children to reveal their conscious and unconscious emotions through playing¹⁵. Play therapy might result in the emotional evacuation of the children and their stress reduction and provides a safe environment for the child to give him this opportunity to learn about their experiences. But this method with all its benefits fails to train issues such as problem solving or social skills and for the treatment takes a long time for psychologists and therapists, they prefer to use direct methods to prevent the waste of time and lack of attention to special education. As a result, direct methods has been widely used in recent years and one of these types of games is behavioral therapy-cognitive that is to be explained here¹⁶.

Conclusion

Training play therapy to mothers of autistic children could effectively improve the children's verbal communication skills. Due to the presence of a two-aspect independent variable (experimental group and control group), continuous dependent variable (posttest scores of the verbal communication skills) and also change variable (pre-test scores, the verbal communication skills), the covariance analysis method was used. The analysis revealed a difference

Table 5: Analysis of variance's results on post-test scores of non-verbal linguistic communication skills in experimental and control groups with control of pre-test.

Dependent variable	Source	Total squares	Df	Mean square	F	Significance level	Efficacy
linguistic-non-verbal Post-test	Pre-test	55.095	1	55.095	27.977	0.000	0.509
	group	110.011	1	110.011	55.863	0.000	0.674
	error	53.172	27	1.969			
	total	2011.000	30				
linguistic-non-verbal follow-up	Pre-test	20.648	1	20.648	15.308	0.001	0.362
	group	69.890	1	69.890	51.815	0.000	0.657
	error	36.419	27	1.349			
	total	1632.000	30				

between the average scores of verbal communication skills for the experimental group (teaching of play therapy) and that of the control group after adjustment for initial pretest scores. Table 4 represents the pertaining results of the test.

As it might be seen from the table, there is a significant difference between the average score of verbal communication skills in control and experimental groups ($P=0.000$, $F=16.125$). Furthermore, the table also shows that there is a significant difference between the average score adjusted by eliminating the impact of pre-test scores in linguistic communication skills in the post-test stage. Overall, based on these findings, it might be contended that play therapy has increased the post-test scores related to communication skills. Given the size of the effect, it can also be stated that this increase is significant. In the follow-up step, by eliminating the effect of pre-test, treatment effect has been maintained ($P=0.000$, $F=56.133$). So we can say that play therapy has effectively increased the verbal communication skills of the participants.

Training play therapy to autistic children's Mothers improved the verbal communication skills of the children. Due to the presence of a two-level independent variable (experimental group and control group), continuous dependent variables (post-test scores of linguistic-verbal communication skills) and also change variable (pre-test scores of linguistic-verbal communication skills), covariance analysis was employed.

According to the table 5, there was a significant difference between the average score of non-verbal communication skills in control and experimental groups ($P=0.000$, $F=55.86$). Moreover, the table also indicates that by eliminating the effect of pre-test scores there was a significant difference between the adjusted verbal communication skills in post-test. Given the size effect, it can also be asserted that such an effect was significant. In the stage of follow-up by eliminating the effect of pre-test, treatment effect has been maintained ($P=0.000$, $F=51.815$). In fact, it might be concluded that play therapy can effectively increase the skills of linguistic non-verbal communication

Acknowledgment

The authors thank the members of Department of Psychology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

References

1. Daghighi Khodashahri A. The effect of playing with entertainment robot on improvement of social skills in autistic children. M.A. Thesis, Exceptional children psychology field of study. Islamic Azad University, Tehran Central Branch 2010.
2. Gilliam J. Gilliam autism rating scale. Austin, TX: Pro-Ed. Inc p. 2006;76.
3. Kim J. The effects of improvisational music therapy on joint attention behaviours in children with autistic spectrum disorder: unknown; 2006.
4. Baron-Cohen S. Theory of mind in normal development and autism. Prisme; 2001.
5. Canfield RL, Henderson Jr CR, Cory-Slechta DA, Cox C, Jusko TA, Lanphear BP. Intellectual impairment in children with blood lead concentrations below 10 μg per deciliter. *New England journal of medicine*. 2003;348(16):1517-26.
6. Reitman D, Rhode PC, Hupp SD, Altobello C. Development and validation of the parental authority questionnaire-revised. *Journal of Psychopathology and Behavioral Assessment*. 2002;24(2):119-27.
7. Smith PK, Pellegrini A. Learning through play. *Encyclopedia on early childhood development*. 2008:1-6.
8. Mohammadi M-R, Akhondzadeh S. Autism spectrum disorders: etiology and pharmacotherapy. *Current Drug Therapy*. 2007;2(2):97-103.
9. Robins B, Dautenhahn K, Dubowski J. Does appearance matter in the interaction of children with autism with a humanoid robot? *Interaction Studies*. 2006;7(3):509-42.
10. Landreth GL. Play therapy: The art of the relationship: Routledge; 2012.
11. Akhondzadeh S, Erfani S, Mohammadi M, Tehrani-Doost M, Amini H, Gudarzi S, et al. Cyproheptadine in the treatment of autistic disorder: a double-blind placebo-controlled trial. *Journal of clinical pharmacy and therapeutics*. 2004;29(2):145-50.
12. Whitman TL, Ekas N. Theory and research on autism: do we need a new approach to thinking about and studying this disorder? *International Review of Research in Mental Retardation*. 2008;35:1-41.
13. Besio S, Caprino F, Laudanna E. Guidelines for using robots in education and play therapy sessions for children with disabilities. Uniservice, Trento. 2010.
14. Barzegary L, Zamini S. The effect of play therapy on children with ADHD. *Procedia-Social and Behavioral Sciences*. 2011;30:2216-8.
15. Chana G, Laskaris L, Pantelis C, Gillett P, Testa R, Zantomio D, et al. Decreased expression of mGluR5 within the dorsolateral prefrontal cortex in autism and increased microglial number in mGluR5 knockout mice: Pathophysiological and neurobehavioral implications. *Brain, behavior, and immunity*. 2015;49:197-205.
16. Fathalipouri P, Makvandi B, Heidarie A. Effectiveness of Group Play Therapy in Reducing Generalized Anxiety in Female Elementary Students.
17. Upchurch DM, Aneshensel CS, Mudgal J, McNeely CS. Sociocultural contexts of time to first sex among Hispanic adolescents. *Journal of Marriage and Family*. 2001;63(4):1158-69.