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DEVELOPMENTAL PSYCHOLOGY | RESEARCH ARTICLE

The impact of group play therapy on creativity and control of aggression in preschool children

Jamshid Jarareh^{1*}, Aref Mohammadi¹, Maghsoud Nader² and Seyyed Akbar Moosavian³

Abstract: The main purpose of conducting this study was to investigate the effectiveness of group play therapy in preschool children's creativity and aggression control. The research method was experimental along with pretest-posttest design in control group. The sample of study included all preschool students of Dehloran town with a total number of 60 students from preschool students that (30 subjects in experimental group and 30 subjects in control group) were selected by multistage random cluster sampling. The research instruments were Torrance's creativity questionnaire and aggressiveness questionnaire of Shahim. Their reliability and validity have been confirmed and to analyze the findings, covariance analysis test was used. The major findings of the research indicate that group play therapy in preschool children's creativity and aggression has a significant effect on the level of 0.01 and it enhances creativity and reduces aggression in preschool children.

Subjects: Education - Social Sciences; Psychological Science; Health & Society

Keywords: group play therapy; creativity; aggressiveness; developmental assessment instruments

1. Introduction

Human civilization is indebted to people's creative ideas and its durability would be impossible without the use of creativity, because creativity is considered the most important performance of mind in humans. A major part of the world's population are children, as in developing countries, 50% of people are children (Narimani, Soleimani, & Aboulghasemi, 2012). Innovation and creativity as wondrous human characteristics, that can emerge not only in childhood and adolescence, but also throughout lifetime. In fact, the ability of creativity and innovation may remain hidden in some stages. But, it can be revived again, so all human beings inherently possess the ability of thinking and creative

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PUBLIC INTEREST STATEMENT

Human civilization is indebted to people's creative ideas and its durability would be impossible without the use of creativity, because creativity is considered the most important performance of mind in humans. The purpose of this study was to investigate the effect of group play therapy in preschool children's creativity and aggression control.



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performance and due to environmental conditions, they can promote creativity and innovation in themselves (Hemmati, 2008). History of scientific studies about creativity and its constituent elements is not more than a century and this subject at first attracted the attention of social and psychological scientists and for the first time, Guilford who was a scientist in 1950, began his scientific researches about the components and function of creative thinking (TalebZadeh, 2006). And along his work, Torrens helped remarkably to the expansion of creativity concept. Yang and Cheng (2009) believe that, teachers and educators can pave the way to the emergence of creativity by the creation of dynamic situations and creative teaching methods. Violence and aggression, at different levels and aspects are considered a global problem and the root of many crimes, deviations, and even wars, should be sought in this matter. At a glance, violence and aggression can be considered the reason of immoralities and spiritual collapse of many individuals, groups, and societies. In recent decades, violence, and aggression has shown high prevalence (Sadock & Sadock, 2005). In fact, the concept of aggression includes acts such as: physical aggression, verbal and non-verbal or symbolic acts against others. In preschool and primary school, aggression reduces by the development and progress of interpersonal skills and provides the opportunity for children to understand that their aggressive actions in some situations are successful and in some other ones are unsuccessful. This interaction affects the balance of children's behavior and they learn shouldn't be too aggressive and not too negligent in social situations and therefore their aggression will be reduced (Axline, 1990). Game connects the inner thoughts of children with outside world and as a result, children can control external objects. Playing allows the child to show experiences, thoughts, feelings, and aspirations which are threatening for him (Wethington et al., 2008). Play therapy is a structured approach based on the theory of treatment, which establishes normal learning and communicational processes in children. In this way, which was welcomed by children, possibility of scrutiny and considering its different aspects is provided in individual behavioral patterns of children (Hinshaw, 2002). For example, Marcia and Bernard (2001) reported that, game as a symbolic tool can help to the communicational skills of children and their interaction with others and children who are playing sophisticated games are more creative and in complex social skills they have tangible progress. Ahmadi (1997) had done a study regarding the effect of indirect play therapy on children, the results showed that play therapy is effective in reduction of aggression in children. Also, Barzegar, Pour-Mohammad, and Behnia (2012), Sarihi, Sadat pournesaei, and Nikakhlagh (2015) in another study investigated the effectiveness of play on externalization and behavioral problems in preschoolers. They concluded that, the impact of games on reducing externalization problems, aggression and ignoring the rules in preschoolers was related to significant behavioral problems. Sarihi, Sadat pournesaei and Nikakhlagh (2015) in a study examined the impact of activities related to playing in increasing appropriate behaviors in the classroom. The results showed that verbal, motional, and passive behaviors of participants have significantly changed. Ojiambo and Bratton (2014) conducted a study to investigate the impact of play activities on problematic behaviors of poor children in Uganda. Results showed that, participants in play activities after testing had less troublesome behaviors by themselves. Also, in literature review regarding the effectiveness of play therapy on children's creativity, Eslampanah and Babaei (2014) concluded that playing was effective in increasing creativity of preschool children. Salmanpanah, Maleki, and Padidarani Moghadam (2001) during their investigation concluded that, toy houses had a significant impact on the growth of creativity on children between 3 and 7 years and they can be effective on their four components. Furthermore, in a study by Smidt (2014), it was found that playing increases the possibility of problem solving, creativity and innovation in children. According to the existing evidence and the provided documentation, key issue in this study is to investigate the effect of group play therapy on creativity and aggression control of preschool children in Dehloran town.

2. Methodology

2.1. Population and sample of the study

This study is an experimental research along with pretest–posttest in control group. The study population consisted of all preschool students in Dehloran town ($N = 2,735$) during academic years of 2015–2016, with a total number of 60 students from preschool students that (30 subjects in experimental group and 30 subjects in control group) were selected by multistage random cluster sampling.

2.2. Procedure

Before the formation of experimental and control groups a pretest was given to students and they were randomly assigned to two experimental and control groups. After forming experimental and control groups, experimental group was attended in 10 sessions of play therapy. It is worth mentioning that students were unaware of their tests. The interventional program included 10 sessions of group games of Cognitive behavioral therapy by Susan Nell in 60 min and the control group did not receive any treatment. At the end of experiment, both groups were given a posttest to measure the effectiveness of group plays and comparison was done among two groups. Brief description of therapy sessions is explained as follows:

First session	(1) Introduction of people
	(2) Free play
Second session	(1) Drawstring game
	(2) Sculpture game
Third session	(1) Playing Khorous Jangi
	(2) Play pantomime (gift giving)
Fourth session	(1) Castle game
	(2) Play pantomime (things)
Fifth session	(1) Vasati game
	(2) Play pantomime (Fights and reconciliation)
Sixth session	(1) Play hat game
	(2) The game of throwing balloons
Seventh session	(1) Play naughty ball
	(2) Play chair game
Eighth session	(1) Play Ganiyeh
	(2) Play the role of seller and buyer
Ninth session	(1) Play the role of the combat soldier
	(2) Pantomime (animals)
Tenth session	(1) Play a goal or absurd (Group)
	(2) Play whose place changed?
	(3) Closing ceremonies

2.3. Instruments

The used instruments in this study, both in pretest and posttests include:

- (1) Form B, Torrance's creativity test: This test measures components of expansion, innovation, fluidity, and flexibility, which is composed of three parts. In each part, semi-finished image is used and participants will have 10 min to complete each part of it based on their ability and creativity. In total, participants will have 30 min to complete three parts and at the end of the test, each of the images will be scored. To ensure about content reliability of the tests, consistent and deliberate efforts was done by Torrance based on driving tests, test assignments, instructions, and methods of scoring based on the best researches and theories. He reported the validity of this test is between, 0.88 and 0.96 (Torrance, 1975).
- (2) Control of aggression scale in children: This scale using the Aggression Questionnaire of Shahimin elementary school children and Ahvaz Aggression Questionnaire was designed to measure different aspects of aggression in preschool-aged children. Questionnaire was scored in five-point Likert scale. (Never = 0, rarely = 1, once a month = 2, once a week = 3, and most days = 4). This questionnaire is completed by a kindergarten teacher and questions involve varying degrees of severity for aggression emergence and they will be graded according to the level of aggressive behavior emergence. Scale scores can fluctuate between 0 and 168, and

high scores indicate high levels of aggression in children. In other words, children whose aggression score is two standard deviations above the mean, are known aggressive (Vahedi, Fathiazar, Hosseininasab, & Moghadam, 2008).

3. Analysis method

In order to analyze the data, descriptive and inferential statistical software of SPSS-22 was used. Thus, in descriptive part, average and standard deviation were used and in the part of inferential statistics to analyze the obtained data from research and to ensure the significant level of hypothesis, statistical test of covariance was used.

3.1. Findings

Descriptive information of aggression and creativity components are shown, respectively, in Tables 1 and 2 based on the separation of control and experimental groups.

According to the results in Table 1, mean of experimental group in all components of aggression in posttest stage is decreased compared with pretest stage.

According to the results in Table 2, mean of experimental group in the posttest stage and in components of innovation, expansion, fluidity, and flexibility is increased compared with pretest stage. Increase of mean in experimental group in the posttest stage of fluidity component was very limited compared with pretest stage. In order to investigate the homogeneity of variances in the control and experimental groups, Levene test was used:

The obtained results in Table 3 showed that, significance level of all creativity components is larger than 0.05. Therefore, the assumption of homogeneity of variances for these components is established. But for the two components of physical offensive aggression and impulsive anger, significance

Table 1. Descriptive information of aggression scores based on the separation of experimental and control groups in both pretest and posttest stages

Variable group	Number	Mean	SD
<i>Verbal offensive</i>			
Experimental pretest	30	33.50	2.72
Aggression posttest	30	29.30	3.64
Control pretest	30	33.63	2.74
Posttest	30	32.13	3.18
<i>Physical offensive</i>			
Experimental pretest	30	33.50	3.38
Aggression posttest	30	26.36	3.51
Control pretest	30	33.56	4.49
Posttest	30	30.66	5.83
<i>Relational Aggression</i>			
Experimental pretest	30	25.26	3.67
Posttest	30	20.56	4.24
Control pretest	30	25.53	3.88
Posttest	30	25.13	4.17
<i>Impulsive anger</i>			
Experimental pretest	30	22.00	2.80
Posttest	30	18.16	3.09
Control pretest	30	22.60	2.37
Posttest	30	24.00	2.33

Table 2. Descriptive information of creativity components based on the separation of measuring stage in groups

Creativity components group	Number	Mean	SD
Innovation experimental pretest	30	24.60	4.32
Posttest	30	28.63	2.65
Control pretest	30	27.23	4.21
Posttest	30	24.20	3.68
<i>Expansion experimental</i>			
Pretest	30	19.33	4.59
Posttest	30	25.43	5.39
Control pretest	30	21.83	4.88
Posttest	30	21.86	5.15
<i>Fluidity experimental</i>			
Pretest	30	32.53	5.07
Posttest	30	33.26	5.81
Control pretest	30	33.16	4.58
Posttest	30	32.23	4.96
Flexibility experimental pretest	30	23.56	6.90
Posttest	30	28.53	6.00
Control pretest	30	22.90	7.36
Posttest	30	23.03	6.24

Table 3. Levene test for investigating homogeneity of variances in the control and experimental groups

Index of variables	df1 df2	F	Sig.	
Verbal offensive aggression	1	58	0.07	0.78
Physical offensive aggression	1	58	6.58	0.01
Relational aggression	1	58	0.33	0.56
Impulsive anger	1	58	6.37	0.01
Innovation	1	58	0.87	0.35
Expansion	1	58	3.31	0.07
Fluidity	1	58	4.30	0.04
Flexibility	1	58	1.77	0.18

level is less than 0.05, and this means that the homogeneity of variances for these two components is not established. But since both the experimental and control groups are in the equal size, therefore, the violation of assumption, is negligible and for analysis of findings parametric tests can be used.

The first hypothesis of the study: group play therapy is effective on different aspects of aggression in preschool children of Dehloran town.

Table 4 shows the results after excluding the effect of pretest by multivariate analysis of covariance, there will be a significant effect for play therapy or in other words for independent variable of the study. It shows that between at least one of the dependent variables, in control and experimental group there is a significant difference (Wilks' Lambda = 0.32, $p < 0.01$).

Table 4. Multivariate analysis of covariance in posttest scores of experimental and control groups

Statistical effect of index	Test	Value	F	df of hypothesis	df of error	Sig.
Difference of two groups by Pillay effect controlling the effect	0.67	26.86	4	51		0.001
Lambda Wilks of pretest	0.32	26.86	4	51		0.001
Hoteling effect	2.10	26.86	4	51		0.001
The biggest root on	2.10	26.86	4	51		0.001

Table 5. Analysis of one-way covariance in the context of multivariate analysis of covariance

Index of variable level	Change resource size	SS of test	df	F	Significance	Effect	Power
Verbal offensive aggression	Group	103.89	1	9.44	0.003	0.14	0.85
Physical offensive aggression	Group	252.65	1	11.88	0.001	0.18	0.92
Relational aggression	Group	292.24	1	17.04	0.001	0.24	0.98
Impulsive anger	Group	458.58	1	67.84	0.001	0.55	1.00

Table 6. Multivariate analysis of covariance in posttest scores of experimental and control groups

Statistical index of effect	Test	Value	F	Hypothesis of df	Error of df	Sig.
Difference of Pillay effect		0.64	23.35	4	51	0.001
Two groups by Lambda Wilks		0.35	23.35	4	51	0.001
Controlling the Hoteling effect		1.83	23.35	4	51	0.001
Effect of pretest the biggest root on		1.83	23.35	4	51	0.001

Second hypothesis of the study: group play therapy is effective on different aspects of creativity in preschool students of Dehloran town

Results in Table 6 shows that, after excluding the effect of pretest by multivariate analysis of covariance, for play therapy or in other words for independent variable of the study there will be a significant effect. It shows that between at least one of the dependent variables, in experimental and control group there is a significant difference (Wilks' Lambda = 0.35, $p < 0.01$).

4. Discussion and conclusion

The aim of this study was to investigate the effect of group play therapy in preschool children's creativity and aggression control. According to the average of the obtained results it can be said that, average of innovation, expansion, and flexibility components in experimental group is increased compared with control group. But about fluidity component there wasn't seen a significant difference between two groups. Also based on the results, group play therapy has a significant effect on all components of aggression.

Regarding the first hypothesis of the study, as can be seen from the results in Table 7, obtained significant level for components of aggression is smaller than the achieved significance level (0.012) of Bonferroni correction for multivariate analysis of covariance (division of significance level (0.05) to four dependent variables). So, according to the obtained average it can be said that, average of innovation, expansion, and flexibility components in experimental group is increased compared with

Table 7. Analysis of one-way covariance in the context of multivariate analysis of covariance

Indices of variables	Change source	SS	df	F	Significance level	Effect size	Power of test
Innovation	Group	646.57	1	43.37	0.001	0.44	1.00
Expansion	Group	421.56	1	35.06	0.001	0.39	1.00
Fluidity	Group	43.79	1	1.79	0.18	0.03	0.26
Flexibility	Group	289.97	1	23.33	0.001	0.30	0.99

control group. But about fluidity component there wasn't seen a significant difference between two groups. Axline (1990) believes that, playing can pave the way for children to learn the knowledge related to the world and it will provide the necessary information for their future life. Children through games can understand their world and its components and will be familiar with its issues and problems. Since the power of attraction, discovery, imagination, and curiosity of child is strong, his recognition is more and faster than others. Thus, it can be expected that students' participation in play therapy have a positive impact on improving aspects of creativity. Torrance (quoted by Abedi, 1993) considers creativity as a combination of the following four factors: (1) Fluidity: the talent of producing many ideas, (2) Expansion: attention to details, (3) Innovation: talent of producing new and unusual ideas, and (4) Flexibility: the ability of producing many ideas by different methods. Torrance (quoted by Abedi, 1993) believes that creativity is teachable. To explain the finding that play therapy is effective on components of innovation and flexibility maybe it can be said that, because the child can get acquainted with a variety of social roles through games, training of these roles stimulates and encourages the child toward one of them to do it (Ahmadi, 2013). So, we can expect that children who have active participation in play therapy, have more talent to generate new and unusual ideas (by practicing a variety of roles) and this can be an important factor in the promotion of creativity and flexibility. Axline (1990) believes that the game allows the child to make good relationships with others and be able to balances his or her own behaviors. Through playing the child can learn love, working in group activities, practicing, and respect to the rights of others. Primary school games are good ways to achieve this goal. Therefore, according to this effect of playing, it can be expected that participants in playing can improve the ability of generating ideas in different ways (flexibility). Yang and Cheng (2009) believe that teachers and educators can provide grounds of creativity emergence by creating dynamic situations and creative teaching methods. Kerr and Gagliardi claim that creativity at the level of meta-cognitive components (fluidity, flexibility, and innovation) is teachable. Regarding the second hypothesis of this study, as can be seen from the results in Table 5, obtained significant level for aggression components is smaller than the achieved significant level of Bonferroni correction for multivariate analysis of covariance (division of significance level (0.05) to the four dependent variables). According to the average of the obtained results it can be said that, average of aggression components in experimental group is decreased compared with control group. Findings from the second hypothesis of the study is consistent with the results of the studies by Barzegar et al. (2012), Amjadifar (2006), Mamie Yanlu (2000) and Ahmadi (2013). Also, this finding is consistent with the results of the studies by McGive (2000) and Baggerly and Parker (2005) in abroad. For the explanation of this finding, it can be said that, children can externalize their emotions and express their anxiety through playing tools and words, and relationships that are established in the game, can control their stress. Playing has a significant effect on control of feelings in children through role play and the child puts himself in the role which is stressful for him and in this way expresses his own wishes. Garza and Bratton (2005) believe that children by playing learn anger management skills, effective communication skills with peers and positive ways of externalization of aggression, and in this way they can raise their level of imagination, they can find a better relationship with their peers and stress of rejection by group will be reduced. Brofield (2003) came to the conclusion that playing, especially group play is an appropriate method for improving children's social and communicational skills. In fact, children during the game are given the opportunity to express their feelings without considering its consequences which cannot be expressed in other environments. In the process of playing, children can recreate events and issues that have faced

them in the real world and by repeating this position rather than a passive role, they can take an active role. In this way, children can overcome their emotions through repetition and domination of the position. Children can recreate different emotions by the help of playing and in this way they can expand their experience to understand deeper, broader, and more subtle emotions. In other explanation, it can be said that, the game connects inner thoughts of children with the outside world and consequently the child can bring the external objects under his or her own control. Playing allows children to show experiences, thoughts, emotions, and tendencies that are threatening for him (Wethington et al., 2008). Playing is a proper method for children, because children often show their feelings better by oral expression. Through play therapy, children can learn better self-control skills. Play therapy is an approach based on the structure of treatment theory which establishes learning process, normal and natural communication in children (Landreth, 2012). Children during playing, explore their surrounding environment and through it take the first steps of socialization, learn collaboration with groups, and they can be effective on others and influenced by them. Children through playing learn how they can be accepted by a group, they understand the amount of ability which is needed to being successful in the group and also they will be aware about how to use other's abilities to meet their own needs (Landreth, 2013). Children also learn how to respect the rights of others, how to resist in facing with failures and maintain their confidence (Nejati, 2001).

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Competing Interests

The authors declare no competing interest.

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Correction

The author picture was incorrectly labelled as Jamshid Jarareh, this has now been amended to Aref Mohammadi.

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