



## Effectiveness of Group Play Therapy on Social Skills and Behavior Problems in Children with Down syndrome

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**Abstract:** *This study was conducted to determine the effectiveness of the group play therapy with a behavioral approach on social skills and behavioral problems of children with Down syndrome. The research method was quasi-experimental with pre-test and post-test design and control group. The study population comprised children with Down syndrome aged (10-20) years (junior and high schools) in Rasht enrolled in academic year 2015-2016; out of them, a sample of 24 children were selected using random sampling and assigned randomly into two experimental and control groups. Social skills and behavior problems scale (Gresham Elliott, 1990) was used for measurement. The training program was a self-made game adapted from 2 articles and was conducted for 12 sessions for 2 months for the experimental group. Data analysis showed that there was a significant difference between the two control and experimental groups in post-test in terms of social skills. Therefore, group plays training increases social skills in children with Down syndrome; however, there was no significant difference between the experimental and control groups in behavioral problems in the in the post-test. Group play did not therefore reduce behavioral problems in children with Down syndrome.*

**Keywords:** *group plays, social skills, behavioral problems, children with Down syndrome*

### INTRODUCTION

Success in social interactions is determined by numerous factors associated with the person, response from others and social fabric. Social skills refer to the ability to perform behaviors that are important in empowering a community to capabilities (Spence, 1995). Numerous studies show that the failure in social skills has a negative impact on student performance, accelerated the daily problems and often leads to behavioral problems. So social skills can be defined as the necessary skills to adapt to social needs and maintain satisfactory interpersonal relationships (Barati et al., 2012). Mentally retarded children have problems in adaptive behavior and as a result of the socialization process that makes it difficult social and independent living for them and imposes a heavy burden on the family. There are two important reasons for people with intellectual disability to develop relationships with ordinary people. First, it requires the participation of these people in social situations through which they can learn appropriate ways of social behavior. Second, interaction and forming relationships of people with disabilities and ordinary people may reduce the label of mental retardation (Shah Miveh Isfahani et al., 2013). Play therapy technique has also been used in the treatment of pediatric disorders such as depression, anxiety and behavioral problems and in many cases it has been proven effective as well (Ali Luo et al., 2013). Because of the low cost and availability, the lack of need as teacher, special appeal for children and usage in various temporal and space situations, play therapy technique has relative advantages in comparison to other methods to improve the social skills of children with Down syndrome. The play (game) gives the opportunity to the children to release emotions such as anger and fear, which is difficult to express them in another way. The play can also be helpful in reducing anxiety in children (Ali Luo et al., 2013). Studies show that

socialization and ability to interact with others are very important in life (Papko, 2003). Communicating with others requires the development of social skills, although children with Down syndrome have major deficiencies in social skills (Krozier & Tincani, 2015). Unfortunately, deficiency in social skills not only inhibits the growth of these children but also cause the lack of acceptance and exclusion of children from friends, peers and adults as well as loneliness and isolation (Delano & Snell, 2006). Thus, according to research in the field of social skills and behavior problems of children with Down syndrome, the role of group play in enhancing social skills and reducing behavioral problems in these children is considered and because of the important role of social skills in these children's lives, it is necessary to consider programs such as group games or games that require communication and active participation in group activities. The aim of the present study was to evaluate the efficacy of group games on social skills and behavior problems in children with Down syndrome.

**Method**

This is a quasi-experimental study; the population comprised all children with Down syndrome in the city of Rasht. The sample was composed of 24 children with Down syndrome aged (10-20 years) who were randomly selected from high schools and were randomly assigned in two experimental and control groups.

**Research Tool**

**Social skills and behavior problems scale:**

Social skills and behavior problems scale includes three forms for parents, teachers and students which has been prepared for three pre-school, primary, secondary and high school levels. This scale measures the frequency of behaviors affecting growth and social competence and student's matching at home and school, and can be used for screening, classifying the students and planning social skills training (quoted by Ramesh, 2009). Form used in this research - parental forms at secondary school – high school includes two measures of social skills and behavior problems. The questionnaire contains 52 questions, out of which the first 40 questions measure social skills and the last 12 questions measure behavior problems. The questions are scored on a Likert scale (3 options) as follows: 0= never, 1= sometimes and often= 2. The reliability of the questionnaire has been reported 94.0% by using Cronbach's alpha of Gresham Elliott (1990) (Shahim, 2002). The validity of the questionnaire was also calculated in Iran through factor analysis with a sample of 160 deaf students by Khanzadeh (2004). Factor analysis was conducted using principal components analysis based on three factors through varimax rotation. The coefficient was obtained 863. % which was significant and satisfactory (quoted by Ramesh, 2009).

**Findings**

The first hypothesis: Group plays increase social skills of children with Down syndrome. The research initially focused on descriptive statistics of variables in the pre-test and post-test. The mean scores of pre-test and post-test tests of social skills in both experimental and control groups were presented as follows:

**Table 1. The mean scores of pretest and posttest tests of social skills in both control and experimental groups**

Group	Pretest		Posttest	
	Mean	Standard deviation	Mean	Standard deviation
Experimental	48.29%	4.63%	56.09%	2.16%
Control	47.80%	2.16%	49.83%	3.89%

As can be seen in Table 1, the mean scores of social skills in the experimental group in pre-test were calculated 48.29%. This amount has been reached 56.09% in the post-test and in the control group; the mean scores of social skills in the pretest and posttest were also calculated 47.80%, 49.83% respectively. According to Kolmogorov-Smirnov test, examined data were normally distributed ( $P > 0.05$ ). In addition, according to Levin assumption of equality of variance, the variances of two groups were equal and thus these two groups were comparable together ( $P > 0.05$ ). The pretest variable was also controlled (currite). In what follows, the univariate analysis of covariance was performed.

**Table 2. Results of univariate covariance analysis**

Source of changes	Sum of squares	df	Mean Square	F	Significance
Group	9240.77	1	9240.77	31.84	0.000
Error	561.22	19	29.53		

According to the results presented in Table 2, the results of covariance analysis showed that the effect of group play therapy on increased social skills is significant ( $F = 31.84$ ,  $P < 0.001$ ). In other words, play therapy training had a significant increase in social skills. The effectiveness of group play on the components of social skills in children with Down syndrome was also reviewed. Firstly the descriptive statistics of variables in the pre-test and post-test tests were presented. The average and standard deviation of variable regarding subscales of social skills in both experimental and control groups were also presented in Tables 3-4. Moreover, the results of Kolmogorov-Smirnov tests for the normality of the distribution of the variables were reported in the table. According to this table, the Z statistic for Kolmogorov - Smirnov test was not statistically significant for all variables. Therefore it can be concluded that the distribution of these variables is normal.

**Table 3. Descriptive indicators of social skills in the post-test scores of experimental and control groups**

Variable	Group	Mean	Standard deviation	<i>P</i>
Cooperation	Experimental	18.9	3.42	$P > 0.05$
	Control	12.6	5.91	$P > 0.05$
Assertiveness	Experimental	16.13	2.38	$P > 0.05$
	Control	10.03	2.55	$P > 0.05$
Being responsible	Experimental	19.29	2.37	$P > 0.05$
	Control	13.38	3.22	$P > 0.05$
Self-control	Experimental	18.39	1.79	$P > 0.05$
	Control	12.01	15.8	$P > 0.05$

The multivariate analysis of covariance was used to examine the significant difference in subscales of social skills in both control and experimental groups by controlling such variables as gender and age. To prove the homogeneity of the slope of the regression, the F interaction between the covariate (gender and

age) and independent (Group) should be calculated, if these indicators are not meaningful in the present analysis ( $P>0.05$ ). Levine test results for the homogeneity of variance in the dependent variable showed that the variance in the subscales of social skills groups in both groups are equal ( $P>0.05$ ). Box test results for the equality of covariance matrix of the dependent variables between groups also showed that covariance matrix of the dependent variables is equal in both groups ( $P>0.05$ ). After multivariate analysis of covariance assumptions, test results showed that there were significant differences between the two groups in the components of social skills ( $P>0.05$ ). The results of multivariate analysis of covariance for the difference between the groups in terms of social skills were reported in Table 4.

**Table 4. Covariance analysis to evaluate the differences between the groups in terms of social skills**

Source of changes	Sum of squares	df	Mean Square	F-statistics	Significance
Cooperation	3.26	1	3.26	1.068	0.019
Assertiveness	2.18	1	2.18	2.01	0.034
Being responsible	4.08	1	4.08	0.94	0.06
Self-control	3.23	1	3.23	2.27	0.01

According to Table 4, the multivariate analysis of covariance showed that there are significant differences between the experimental and control groups in the subscales of social skills. In other words, group play therapy training has been increased cooperation, assertiveness and self-controlling ( $P>0.05$ ).

The second hypothesis of the study: Group plays reduce behavioral problems in children with Down syndrome.

The descriptive statistics of variables in the pre-test and post-test tests were firstly examined. The mean scores of pre-test and post-test tests in behavioral problems in both experimental and control groups were presented in Table 4-7:

**Table 5: Mean and standard deviation scores of pre-test and post-test tests for behavioral problems in both control and experimental groups**

Group	Number	Pretest		Number	Posttest	
		Mean	Standard deviation		Mean	Standard deviation
Experimental	12	12.45	3.75	12	9.45	1.69
Control	12	13.75	3.30	12	12.50	4.46

As can be seen in Table 5, the mean scores of behavioral problems in the experimental group in pre-test were calculated 12.45%. This amount has been reached 9.45% in the post-test and in the control group; the mean scores of behavioral problems in the pretest and posttest were also calculated 13.74%, 12.50% respectively. According to Kolmogorov-Smirnov test, examined data were normally distributed behavioral problems. In addition, according to Levin assumption of equality of variance, the variances of two groups

were equal and thus these two groups were comparable together ( $P < 0.05$ ). The pretest variable was also controlled (curite). In what follows, the univariate analysis of covariance was performed.

**Table 6. Results of univariate covariance analysis**

Source of changes	Sum of squares	df	Mean Square	F	Significance
Group	24.01	1	24.01	2.03	0.168
Error	24.72	21	11.79		

According to the results presented in Table 6, the results of covariance analysis showed that the effect of group play therapy on decreased behavioral problems is not significant ( $F = 2.03$ ,  $P > 0.05$ ). In other words, play therapy training had no significant impact on behavioral problems. The effectiveness of group plays on the components of behavioral problems in children with Down syndrome was also reviewed. Firstly the descriptive statistics of variables in the pre-test and post-test tests were presented. The average and standard deviation of variable regarding subscales of behavioral problems in both experimental and control groups were also presented in Tables 4-9. Moreover, the results of Kolmogorov-Smirnov tests for the normality of the distribution of the variables were reported in the table. According to this table, the Z statistic for Kolmogorov - Smirnov test was not statistically significant for all variables. Therefore it can be concluded that the distribution of these variables is normal.

**Table 7. Descriptive Indices of behavioral problems scores in both control and experimental groups**

Variable	Group	Mean	Standard deviation	<i>P</i>
Endogenous behavioral problems	Experimental	4.6	2.06	$P > 0.05$
	Control	4.02	1.31	$P > 0.05$
Exogenous behavioral problems	Experimental	3.09	95%	$P > 0.05$
	Control	4.81	2.06	$P > 0.05$

The multivariate analysis of covariance was used to examine the significant difference in subscales of behavioral problems in both control and experimental groups by controlling such variables as gender and age. To prove the homogeneity of the slope of the regression, the F interaction between the covariate (gender and age) and independent (Group) should be calculated, if these indicators are not meaningful in

the present analysis ( $P>0.05$ ). Levine test results for the homogeneity of variance in the dependent variable showed that the variance in the subscales of behavioral problems in both groups are equal ( $P>0.05$ ). Box test results for the equality of covariance matrix of the dependent variables between groups also showed that covariance matrix of the dependent variables is equal in both groups ( $P>0.05$ ). After multivariate analysis of covariance assumptions, test results showed that there were significant differences between the two groups in the components of behavioral problems ( $P<0.05$ ). The results of multivariate analysis of covariance for the difference between the groups in terms of behavioral problems were reported in Table 7.

**Table 8. The results of ANCOVA for the difference between the groups in terms of behavioral problems**

Source of changes	Sum of squares	df	Mean Square	F	Significance
Endogenous behavioral problems	2.38	1	2.28	1.07	43%
Exogenous behavioral problems	1.74	1	1.74	0.39	76%

According to Table 8, test multivariate analysis of covariance showed that there are no significant differences between the experimental and control groups in the subscales of endogenous behavioral problems ( $P>0.05$ ) and exogenous behavioral problems ( $P>0.05$ ). In fact, the group plays had a significant effect on the components of behavioral problems in children with Down syndrome ( $P>0.05$ ).

### Discussion and conclusion

The analysis of covariance showed that group plays training had a significant effect on increasing social skills in students with Down syndrome. In other words, group plays training increased social skills in children. The results is consistent with the findings of the studies by Golzarie and Alamdarloo (2015), Movallali et al. (2014), Gharaiie and Fathabadi (2015), Barati et al (2012), Zarepour et al. (2009), Bahramie (2011), Ganji et al. (2015), Shahmiveh Esfahani et al (2013), Mohammad et al. (2015), Sarihie et al. (2105), Shalanie and Azadmanesh (2015), Ghalamzan et al. (2014), Keroyzer and Tinkanie (2015) , Delano and Snell (2006). The results of the analysis of covariance also showed that group plays training had no significant effect on the reduction of behavior problems in students with Down syndrome. In other words, group plays training did not decrease behavior problems in children with Down syndrome. This result is not consistent with the findings of the researchers mentioned above. In addition to the above, the group plays training using photo and image together with visual and tools provide appropriate communication techniques in children with Down syndrome and children learn how to behave and interact and conduct their social relations through image. Group play is one of two very important features in considering the defects of children with Down syndrome in theory of mind is lack of understanding the children's thoughts and feelings of others. In fact, group games will provide opportunities for children to understand different points of view and thus the growth potential in the children's perspective-taking and empathy. Group games will help children with Down syndrome to recognize the signs and facial expressions of people and to respond to the other party in accordance with these symptoms. In fact, through images and behavioral symptoms which can be used in games and explained to him, children with Down syndrome learn how to respond to other people by circumstances and behave properly in accordance with the same conditions. In a general conclusion, we can state that in addition to the general cultural and social development and health, to solve or reduce the problem of social skills of children with Down syndrome requires the revision of the programs and educational and research facilities, especially in public courses. This is not the end of problems in school children and teachers; these children may experience unpleasant and anxiety feelings in their living space resulting in damage that comes to their mental health problems in the community. It is therefore recommended to parents to

be a bit stricter and more active for shaping their children's behavior and learning; they should explain the limits and rules for children and not to use punishment to control children.

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