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Effectiveness of Social Skills Training on Aggression and Social Adjustment in Children with Down Syndrome Less Than 14 Years of Age

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Abstract

The aim of this study was to investigate the effectiveness of social skills training on aggression and social adjustment in children with Down syndrome aged less than 14 years. The present study is a semi-experimental study with a preexperimental -post experimental and control group design. The statistical population of this study included all boys with Down syndrome aged less than 14 years in Tabriz. Among them, 30 subjects were selected using the available sampling method and randomly divided into the experimental and control groups. For the experimental group, a social skills training program was conducted in 12 sessions of 60 minutes (2 sessions per week) and questionnaires on aggression and social adjustment were evaluated in two stages (preexperimental and post experimental). The data were analyzed using multivariate analysis of covariance with SPSS software. The results showed that social skills training had a significant effect on verbal, physical, relational and impulsive aggression as well as on social and academic adjustment in children with Down syndrome ($P<0.05$). The results of social skills training also showed no significant effect on the emotional adjustment of children with Down syndrome ($P<0.05$). Therefore, clinicians in counseling and clinical centers should consider this type of training to reduce aggression and promote social adjustment in children with Down syndrome.

Keywords: social skills; training on aggression and social adjustment; down syndrome

Introduction

In the fifth edition of the Diagnostic Manual of Mental Disorders (DSM-5), the term intellectual disability is referred to as mental retardation (intellectual development disorder or mental retardation). One of the types of intellectual disability caused by trisomy of chromosome number 21 is Down syndrome. Down syndrome is therefore a genetic disease that leads to a delay in physical and mental development. Approximately one person in every 800 live births is born with Down syndrome (Danielssona, Henry, Messer, Carney& Rönnberg, 2016). Patients with Down syndrome are among the groups that require special attention, as this syndrome is always associated with mental retardation and behavioral problems such as aggression and, as a result, a lack of social adaptation (Joslyn, Berger, Skotko, 2020). Chawla, Burgess, Heussler(2019) Cregenzán-Royo, Brun-Gasca, Fornieles-Deu (2018) have also shown that children with Down syndrome exhibit various emotional and behavioral problems, such as attention problems, stubbornness, disorders and obsessions, which exacerbate learning problems and personal failure in various areas, as well as individual, social and psycho-emotional problems. Aggression is one of the most common behavioral problems in children with Down syndrome, especially in children with intellectual disabilities.

These children face many failures due to different limitations, often due to their cognitive limitations, and the consequences of these failures are the triggering of aggression in different ways (Delgado-Casas, Navarro, Garcia-Gonzalez-Gordon, Marchena, 2014). Aggression in children is a type of psychological mechanism in which a person unconsciously shows the pressure generated by their deprivations and failures in the form of attack reactions, aggression and spiteful behavior whose aim is to hurt the victim. In the world of children, aggression is a childish tool that is sometimes very dangerous and harmful. Instead of solving the problem and relieving the pressure and discomfort, it

causes new anger and suffering for the person (Carlson, Chua, Pan, Hasan, Bied, Martin, Klein, 2019). In this regard, children with very aggressive behavior led to antisocial behavior, are rejected by their peers, and fail to make appropriate social adjustment. This failure, which in turn is related to ignorance and an inadequate parental relationship, reinforces aggression. The reason for this is that aggression can relieve intense frustration and provide the individual with a kind of temporary relief. However, its end is usually not satisfactory and the aggression may be directed directly at the obstacle itself, causing social incompatibility. So, considering that in childhood and adolescence the relationship with peers increases and the dependence on parents decreases, social compatibility is very important (Lee, Wang, Chen, 2019). Therefore, for intellectually disabled children with Down syndrome, feeling different from other people can have a negative impact on their functioning and social adjustment due to the medical condition (Eapen, Cavanna & Robertson, 2016). The social incompatibility of children with the symptoms of impulsivity, verbal and practical functioning, weakness in visual perception, facial signs and body language, weakness in perceiving verbal signs, invading others' personal space, lack of empathy and laziness, mood swings, hyperreactivity and depression are problems that arise for these individuals (Wang, Chou, Chou & Gau, 2016).

Considering that children with Down syndrome have behavioral disorders and social incompatibility, family, school and society face various problems and difficulties, and they are also prone to psychosocial disorders in childhood and adolescence. Therefore, counselors, psychologists and educators have developed behavior correction methods and various therapeutic strategies to reduce the emotional and behavioral problems of these children. For example, researchers have shown that one of the biggest factors leading to behavioral problems in individuals with Down syndrome is their inability to socialize due to the problems caused by the pathology they have suffered (Lott and Diersson, 2010). In this view, learning and teaching appropriate behaviors through social skills is considered one of the best and most growth-oriented methods of intervention and treatment. In fact, without effective communication and interpersonal interaction, a person cannot achieve the desired growth and development of his personality, and any lack of favorable and reasonable relationships with others and helplessness towards a dynamic social life causes anxiety, depression and weak social skills. It makes them smooth (Baby, Gale & Swain, 2018).

Children and young people find their way into the peer group through social skills such as cooperation, willingness to compromise, communication and friendship and form the basis of their social life. One of the main problems that inhibit the efficiency and dynamism of youth and hinder the healthy formation of identity and the development of their talents and intellectual and emotional powers is the problem of social communication and social skills. Children who have acquired social skills are more successful in communicating with their peers in the school environment than children who lack these skills (Alnemier, 2022).

Gresham& Elliott (1990) considered social skills as a subset of a broader structure of social competence. Social skills and other adaptive behaviors such as independent action, physical development, self-direction, personal responsibility, and academic skills are used for the two-dimensional foundation of social competence (Matson, Fee, Coe & Smith, 2000). Social skills are observable and measurable behaviors that enhance independence, acceptance, and desirable quality of life. These skills are important for the adjustment and normal functioning of adolescents, and a failure of social skills is significantly related to mental and behavioral disorders. In this context, several studies have also pointed to the effectiveness of social skills in reducing behavior problems. Is. For example, the studies by Alnemier (2022), Movallali and et al. (2015), Gabrielian, Hamilton, Gelberg, Hellemann, Koosis, Johnson et al. (2019), Fery et al. The studies by Chester, Richdale, McGillivray (2019) and Kılıç, Aytar (2017) have also shown that social skills training have a significant effect on cooperation, adaptation and group activities. Since the condition of children with Down syndrome undoubtedly places an economic burden on families and according to various international statistics, approximately 2.5% of all school-age children (6 to 17 years), a significant number of them have impaired intellectual development and are unable to benefit from normal educational programs (American Psychiatric Association, 2013). Therefore, the present study considered the investigation and exploration of various factors in this context.

Materials and methods

In terms of purpose, the present study was applied research, and in terms of method, it was a semi-experimental study with a pre-experimental -post-experimental design and a control group. The statistical population of this study included all male children with Down syndrome and intellectual disabilities under the age of 14 in the city of Tabriz. Due to the limited statistical population of the study, the available sampling method was used. 30 children under the age of 14 with Down syndrome were selected and randomly assigned to two experimental and control groups. The research instruments include: a) Aggression in Children Questionnaire (ASFP): The Shahim Children Aggression Questionnaire, Ahvaz Aggression Questionnaire and DSM-IV diagnostic criteria that were acceptable in terms of reliability and validity at the child level were used for this experimental (Vahedi, 2008). This questionnaire included 43 questions and was scored using the Likert method. The option "never" received a score of zero, "rarely" received a score of one, "once a month" received a score of two, and "once a week" received a score of three, The Cronbach's alpha method was used to experimental the reliability of this questionnaire. The scale of the questionnaire was 0.98, which indicates a good reliability of the questionnaire. In the study by Farahbakhsh (2021), the reliability of this instrument was also determined using the Cronbach's alpha coefficient of 0.88. b) Social Agreeableness Questionnaire: This questionnaire was created by Sinha and Singh in 1993 and translated and written by Karmider in 1998. The Cronbach's alpha method was used to experimental the reliability of this questionnaire. The scale of the questionnaire was 0.98, which indicates a good reliability of the questionnaire. In the study by Ekan Moltaq (2016), the reliability of this instrument was also determined using the Cronbach's alpha coefficient of 0.88. b) Social Agreeableness Questionnaire: This questionnaire was created by Sinha and Singh in 1993 and translated and written by Karmider in 1998. This questionnaire contains 60 questions and is designed as yes and no. It separates students with good adjustment from weak students in three areas of adjustment (social, emotional and academic).

In this questionnaire, a score of 0 is given for answers indicating compatibility in all three areas, and a score of 1 otherwise. The reliability coefficient of this experimental has been reported as 0.95 and 0.93 using the method of halving and re experimental ing, respectively. In research, the re experimental coefficient and Kuder-Richardson coefficient for this questionnaire have been reported as 0.89 and 0.82, respectively. The validity of this experimental has been confirmed by a group of psychologists. In Iran, Qudsi Ahgar examined the 55-question form of this scale in a sample of 3,000 students of different educational levels. Inclusion criteria included: having Down syndrome diagnosed by a doctor, and exclusion criteria were lack of consent in participating in the study. Ethical considerations of the study included the following: firstly, all the participants participated in the study with the consent of their parents, and secondly, regarding the principles of confidentiality and confidentiality, the participants were assured that the information would remain confidential. Attendance as a pre-experimental and post-experimental was completed after the implementation of the intervention in the experimental group. Finally, after collecting the completed questionnaires, the desired analyze were carried out with the multivariate covariance analysis experimental with the help of SPSS software. To teach social skills (which was based on the cognitive and social learning approach), the educational program consisted of 12 sessions of 60 minutes (2 weeks) The session was conducted in the experimental group at a specific place that was previously coordinated with the families of children with Down syndrome.

Results

In this study, 30 students under the age of 14 with Down syndrome participated in two experimental and control groups, and the information related to age showed that in the experimental group, 13.3% (2 people) were 10 years old, 33.4% (5 people) were 11 years old, 20% (3 people) were 12 years old, 20% (3 people) were 13 years old, and 13.3% (2 people) were 14 years old. Also, in the control group, 20% (3 people) aged 10, 26.7% (4 people) 11 years old, 26.7% (4 people) 12 years old, 13.3% (2 people) 13 years old and 13.3% (2 people) were also 14 years old. In addition, the average age of the experimental and control group subjects was 11.87 and 11.73, respectively. Also, in the experimental group, 60% of the subjects were the first child, 26.7% were the second child, and 13.3% were the third child in their family. Also, according to the above table, in the control group, 66.7% of the subjects were the first child, 20 the percentage of the second child and 13.3% were the third child of their family. Therefore,

it can be said that in both groups, most of the subjects were the first children of their families.

Table 1: Central indices, dispersion of aggression dimensions and Shapiro-Wilk experimental results

Variables	Group	Level	Mean±SD	z statistic	Sig
Verbal aggression	Test	Pre-Experimental	33.71±2.49	0.824	0.220
		Post-Experimental	29.81±1.97	0.937	0.825
	Control	Pre-Experimental	33.21±3.70	0.829	0.265
		Post-Experimental	32.93±3.36	0.953	0.572
Physical aggression	Test	Pre-Experimental	29.06±3.55	0.831	0.284
		Post-Experimental	26.06±3.03	0.864	0.155
	Control	Pre-Experimental	28.21±3.05	0.830	0.277
		Post-Experimental	27.46±3.13	0.936	0.479
Relational aggression	Test	Pre-Experimental	20.40±1.99	0.854	0.587
		Post-Experimental	17.66±1.39	0.841	0.097
	Control	Pre-Experimental	19.81±1.82	0.839	0.370
		Post-Experimental	19.22±1.08	0.856	0.629
Impulsive aggression	Test	Pre-Experimental	20.13±2.64	0.823	0.211
		Post-Experimental	17.16±2.28	0.793	0.074
	Control	Pre-Experimental	19.79±2.07	0.845	0.386
		Post-Experimental	19.33±2.05	0.835	0.231

As can be seen in Table (1), the results of the Shapiro-Wilk experimental indicate the normality of the data distribution in all variables (p>0.05) and the default of the normality of the data distribution to perform the covariance analysis is established.

Table 2: central indicators, dispersion of dimensions of social adjustment and Shapiro-Wilk experimental results

Variables	Group	Level	Mean±SD	z statistic	Sig
Social adjustment	Test	Pre-Experimental	10.93±1.63	0.931	0.278
		Post-Experimental	8.47±1.51	0.930	0.273
	Control	Pre-Experimental	11.19±1.19	0.918	0.181
		Post-Experimental	11.27±0.96	0.866	0.030
Emotional adjustment	Test	Pre-Experimental	11.470.99	0.887	0.061
		Post-Experimental	11.20±0.94	0.880	0.058
	Control	Pre-Experimental	11.53±1.45	0.875	0.040
		Post-Experimental	11.67±1.17	0.803	0.004
Educational adjustment	Test	Pre-Experimental	12.33±3.22	0.941	0.398
		Post-Experimental	9.67±1.79	0.933	0.299
	Control	Pre-Experimental	11.73±2.65	0.934	0.314
		Post-Experimental	11.87±2.58	0.941	0.390

As can be seen in table (2), the results of the Shapiro-Wilk experimental indicate the normality of data distribution in all variables (p<0.05) and the assumption of normality of data distribution to perform covariance analysis is established

The assumption of homogeneity of variances is established for all dimensions of aggression and social skills (P<0.05). Also, the covariance analysis of the assumption of homogeneity of the slope of the regression line and the existence of a linear relationship between the covariance variable and the dependent variable were investigated, which assumed the homogeneity of the regression line slope for the components of verbal aggression (P=0.061, F=2.870), physical aggression (F=0.172, P=1.790), relational aggression (F=0.164, P=1.261), and impulsive anger (F=0.058, P=2.926), and the linear relationship between the variables Covariance and dependence were confirmed in the components of aggression. Also, in order to check the homogeneity of the variance-covariance matrices, the M-box experimental was used for the components of aggression, the results of which indicated that this experimental was not significant for the dependent variables (M Box's

=8.611, F=0.727, P=0.701). Also, assuming the homogeneity of the slope of the regression line for the components of social adjustment (P= 0.074, F= 1.436), emotional adjustment (P= 0.231, F= 1.438), and academic adjustment (P= 0.217, P = F = 1.342), and the linear relationship between the covariance and dependent variables in the dimensions of social adaptation were confirmed. The assumption of homogeneity of the variance-covariance matrices was used by the M-box experimental, the results of which indicate that this experimental is not significant for the variables was dependent (Box's M=6.724, F=0.989, P=0.431).

Table 3: Results of covariance analysis of intergroup effects for aggression components in two groups

Variable	Source of changes	mean square	sum of squares	F	Sig.	Eta squared
Verbal aggression	Pre-Experimental	141.658	141.658	69.728	0.0001	0.73
	Group	97.087	97.087	47.789	0.0001	0.67
	Error	48.758	2.032	-	-	-
Physical aggression	Pre-Experimental	202.299	202.299	134.118	0.0001	0.85
	Group	29.728	29.728	19.709	0.0001	0.45
	Error	36.201	1.508	-	-	-
Relational aggression	Pre-Experimental	30.966	30.966	63.885	0.0001	0.73
	Group	24.412	24.412	50.364	0.0001	0.68
	Error	11.633	0.485	-	-	-
Impulsive aggression	Pre-Experimental	102.594	102.594	93.274	0.0001	0.79
	Group	39.885	39.885	36.262	0.0001	0.61
	Error	26.398	1.100	-	-	-

The results of Table 3 show that the use of the social skills training program led to a significant difference between the experimental and control groups in the dimensions of verbal aggression (Partial η^2=0.67, p=0.0001, F=47.789). Physical aggression (Partial η^2=0.45, p=0.0001, F=19.709), relational aggression (Partial η^2=0.68, p=0.0001, F=0.0001, P=50.364) and impulsive anger (Partial η^2=0.61, p=0.0001, F=36.262). Also, according to the eta square, 67% of the individual differences in the verbal aggression component, 45% in the physical aggression component, 68% in the relational aggression component and 61% in the impulsive anger component It is due to the difference in group membership (intervention effect). Therefore, it can be argued that the social skills training program has reduced the average scores of the participants of the experimental group in the verbal, physical, relationship and impulsive anger components compared to the control group. Therefore, it can be suggested that the social restraints training program is effective on the components of verbal, physical, relational aggression and impulsive anger.

Table 4: Results of covariance analysis of intergroup effects for dimensions of social adjustment in two groups

Variable	Source of changes	mean square	sum of squares	F	Sig.	Eta squared
Social adjustment	group	58.800	58.800	36.860	0.0001	0.56
	error	44.66	1.595	-	-	-
	Total	3024	-	-	-	-
Emotional adjustment	group	1.633	1.633	1.441	0.240	0.049
	error	31.733	1.133	-	-	-
	Total	3955	-	-	-	-
Educational adjustment	group	36.300	36.300	7.309	0.012	0.207
	error	139.067	4.967	-	-	-
	Total	3653	-	-	-	-

The results of Table 4 show that the use of the social skills training program leads to a significant difference between the experimental and control groups in the dimensions of social compatibility (Partial η^2=0.56, p=0.0001, F=36.860) and academic compatibility (Partial η^2=0.207, p=0.012, F=7.309). According to the findings of this table, social skills training led to a significant difference between the experimental and

control groups in emotional adjustment (Partial η^2=0.049, p=0.240, F=2=1.441). Therefore, it can be argued that the social skills training program has reduced the average scores of the participants of the experimental group in terms of social adjustment and academic adjustment compared to the control group, and the social restraints training program was effective on the dimensions of social adjustment and academic adjustment. The social skills training program had no significant effect on emotional adjustment.

Discussion

The aim of the current research was to investigate the effectiveness of social skills training on aggression and social adjustment in children with Down syndrome mental retardation under 14 years of age. According to the first finding, the social skills training program has 67% on verbal aggression, 45% percent had a significant effect on physical aggression, 68% on relational aggression, and 61% on emotional anger in children with Down syndrome. This finding is consistent with the results Baby and et al. (2018) and Fery (2005). In the explanation of this finding, it can be suggested that children with Down syndrome, who have very aggressive behaviors, leading to antisocial behaviors, are rejected by their peers, fail to adapt socially, and this failure of aggression increases. gives the reason for this is that aggression can release pent-up frustrations and bring some kind of temporary relief to the offending person; Although its ending is usually not satisfactory; And aggression may directly target the barrier itself and cause social incompatibility. Therefore, teaching appropriate social skills provides opportunities and experiences that increase social interaction, causing students with Down syndrome to be able to practice and use social skills strategies in all environments and real-life situations (Baby and et al., 2018). Children and youth who learn the social rules of the peer group well and establish strong relationships with family members and society are more likely to show a high level of social adjustment. The concept of positive self-esteem encourages students to understand and accept their limitations and abilities in a correct way of evaluation, and finally they show less aggressive behaviors (Day, Terzian, Rose, Guo, 2005).

The second finding of the research showed that the social skills training program had a significant effect on the social adjustment of children with Down syndrome by 56% and on the academic adjustment by 20%. Also, according to the findings, social skills training had no significant effect on emotional adjustment. In line with the findings of the current research, the results of studies by Alnemier (2022), Stadler and et al. (2023) and Gabrielian et al. (2019) have shown that social skills training has a significant effect on improving the process of social adaptation. In this regard, Chester et al. (2019) also showed during their study that group training of social skills increases social behaviors through participation in group activities and games. Also, the research results of Kılıç, Aytar (2017) showed that social skills training have a positive effect on the effective communication, compatibility and cooperation of the subjects.

In the explanation of this finding, it can be said that the training of appropriate social skills provides opportunities and experiences for social interaction, it makes children with Down syndrome able to practice their strategies and social skills in all environments and real life situations, and it is obvious that providing such opportunities is the responsibility of all those who are in contact with these students In this regard, children and young people who learn the social rules of the peer group well and establish strong relationships with family members and society are more likely to show a high level of social compatibility. Children with Down's syndrome who acquire social skills well and show more desirable behavior from a social point of view, have a positive self-concept and are encouraged to accept their limitations and abilities in a more correct way of evaluation. Also, a possible reason for the improvement of the students' social compatibility is the acquisition and application of social skills. It is the building block on which interpersonal relationships are built.

In fact, when these children truly learn, practice, and self-competence social skills, they can definitely be successful in entering the peer group and making friends, have positive interactions in their relationships with their peers, and show the range of acceptable behaviors.

Conclusion

In general, it can be said that a person who has social skills can choose and provide appropriate behaviors in a certain time and situation, therefore social skills training cannot be separated from the contexts in which the behavior takes place. Also, considering the effectiveness of social skills training, it is suggested to use the techniques of this training in school

counseling centers in order to improve the behavioral performance of other children with special disorders. In this way, taking into account that the participants in the social skills training sessions spoke with enthusiasm and the importance of this type of training in motivating children with Down syndrome, it is suggested that social skills training be considered as a subject in the school curriculum of this type of children. One of the limitations of the current research is that the research was limited to boys with Down syndrome, which was investigated in the statistical population of Tabriz city, so it is suggested to conduct similar research in samples from other cities and in other children in order to Increase the generalizability of the results. It is also recommended to conduct similar research in three forms: real or objective repetition (re-conducting the research by the same researcher), operational repetition (re-conducting the research by others and with the same measuring scales) and regular repetition (re-conducting the same research in another population and with other scales) measurements) to be implemented.

References

1. Alnemr, M. (2022). Academic Learning Strategies for Students with Autism. *International Journal of Novel Research in Education and Learning*, 9(6):10-13.
2. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders, 5th Ed. Washington. DC. *American Psychiatric Association.*
3. Baby, M. Gale, C. & Swain, N. (2018). Communication skills training in the management of patient aggression and violence in healthcare. *Aggression and violent behavior*, 39:67-82.
4. Carlson, G. A. Chua, J. Pan, K. Hasan, T. Bied. et.al. (2019). Behavior Modification Is Associated with Reduced Psychotropic Medication Use in Children with Aggression in Inpatient Treatment. A Retrospective Cohort Study. *Journal of the American Academy of Child & Adolescent Psychiatry.*
5. Chawla, J. Burgess, S. Heussler, H. (2019). Behavioural problems, functional ability and cognitive function in children with down syndrome and sleep problems. *Sleep Medicine*, 64 (1):64-65.
6. Chester, M. Richdale, A. L. McGillivray, J. (2019). Group-Based Social Skills Training with Play for Children on the Autism Spectrum. *J Autism Dev Disord*. 49(6):2231-2242.
7. Cregenzán-Royo, O. Brun-Gasca, C. Fornieles-Deu, A. (2018). Expressed emotion and impulsiveness in mothers of children with Fragile X Syndrome and Down Syndrome: The relation to behavioral problems in their offspring. *Research in Developmental Disabilities*, 83:179-189.
8. Danielssona, H. Henry, L. Messer, D. Carney, D. P.J. & Rönnberg, J. (2016). Developmental delays in phonological recoding among children and adolescents with Down syndrome and Williams syndrome. *Research in Developmental Disabilities*, 55:64-76.
9. Day, S. H. Terzian, M. A. Rose, P. A. Guo, S. (2005). Social Information-Processing Skills Training to Promote Social Competence and Prevent Aggressive Behavior in the Third Grade. *J Consult Clin Psychol*, 73(6):1045-1055.
10. Delgado-Casas, C. Navarro, J. I. Garcia-Gonzalez-Gordon, R. Marchena, E. (2014). Functional analysis of challenging behavior in people with severeintellectual disabilities. *J Psychol Rep*, 115(3):655-69.
11. Eapen, V. Cavanna, A. E. & Robertson, M. M. (2016). Comorbidities, social impact, and quality of life in Tourette syndrome. *Frontiers in Psychiatry*, 7:1-7.
12. Farahbakhsh, K. Shariatmadar, A. Salimi, H. & Tahghighi Ahmadi, N. (2021). The Effectiveness of Parent-Child Interaction Program Training on Aggression in Children with Attention Deficit Hyperactivity Disorder. *Psychology of Exceptional Individuals*, 11(43):63-86.
13. Frey, K.S. (2005). Effect of a school-based social-*Applied Developmental Psychology, 26:171-200.*
14. Gabrielian, S. Hamilton, A. B. Gelberg, L. Hellemann, G. Koosis, et.al. (2019). A protocol to develop and study the effectiveness and implementation of social skills training that improves supported housing retention for persons with serious mental illness. *Contemporary Clinical Trials Communications*, 14:100344.
15. Gresham, F. M. Elliott, S. N. (1990). *The social skills rating system*. Circle Pines, MN. *American Guidance Service*.
16. Joslyn, N. Berger, H, Skotko, B. G. (2020). Geospatial Analyses of Accessibility to Down

Syndrome Specialty Care. *The Journal of Pediatrics*, 218:146-150.
17. Kılıç, M. Aytar, F. A. G. (2017). Effect of Social Skills Training on Social Skills in Early Childhoo Relationship between Social Skills and Temperament. *Education and Science*, 42(191):185-204.
18. Lee, M. Y. Wang, H. S. Chen, C. J. (2019). Development and validation of the social adjustment scale for adolescents with Tourette syndrome in Taiwan. *Journal of Pediatric Nursing*.
19. Lott, I.T. Diersson, M. (2010). Cognetive deficits and associated neurological complications in individual's whit Down's syndrome. *The Lancet Neurology*, 9(6):623-633.
20. Matson, J. L. Fee, V. E. Coe, D. A. Smith, D. (2000). A social skills program for developmentally delayed preschoolers. *Journal Of Clinical Child Psychology*, 20(4):428-433.
21. Movallali G, Barati R, Taheri M. (2015). Efficacy of Social Skills Training on the Reduction of Verbal and Nonverbal Aggression in Male Students with Intellectual Disability. *J Child Ment Health*, 1(1):57-66.
22. Stadler, C. Freitag, C. M. Popma, A. Nauta-Jansen, L. Konrad, et.al. (2023). START NOW: a cognitive behavioral skills training for adolescent girls with conduct or oppositional defiant disorder–a randomized clinical trial. *Journal of child psychology and psychiatry*.
23. vahedi, S. (2008). Validity and reliability of the aggression scale for preschoolers and assessment of aggression in preschool children in Uromia. *Journal of Fundamentals of Mental Health*, 10(37):15-24.
24. Wang, C. Hatzigianni, M. Shahaeian, A. Murray, E. & Harrison, L. J. (2016). The combined effects of teacher-child and peer relationships on children's social-emotional adjustment. *Journal of school psychology*, 59:1-11.

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