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# Severity Levels of Autism, Social Interaction Behaviours and School Adjustment of Pre-School Children with Autism Spectrum Disorder

## Abstract

*School adjustment throughout the early years of formal schooling has been examined on scientific studies for various reasons. Because it predicts certain parts of school success in later years, school adjustment has been suggested to become a focus of research. Although there are numerous factors affecting school adjustment, these factors appear to be categorised as being related to child, family and school or programme. This study examines the relationship between the severity levels of autism in preschool children and their social interaction behaviours characteristic to autism, and their school adjustment. For this purpose, data gathered from a total of 40 students, 6 girls and 34 boys. The age range of the children was 44 to 78 months. Findings reveal that severity levels of disability and social interaction behaviours that are characteristic to ASD predict the school adjustment of preschool children with ASD by 54% in the category of Classroom Participation and by 44% negatively and significantly in the category of Positive Orientation. The findings were discussed based on the literature findings.*

**Keywords:** School Adjustment, Preschool Period, Autism Spectrum Disorder, Social Interaction.

## Introduction

Transition from home to formal schooling for pre-school children is often challenging, as it is considered as one of the most important changes in a child's life (Bart, Hajami, & Bar-Haim, 2007; Yoleri, 2013). The fact that scientific studies on children's adjustment to pre-schooling and the first year of primary school have increased in the last 20 years can demonstrate the significance of it. When children begin school, they must cope with many new demands imposed by the learning context, such as academic challenges, engagement in the new learning environment including

school buildings and classrooms, ability to meet expectations of teachers and school, and gain acceptance into a peer group (Ladd, 1990). They also must learn to interact with the teacher as a new authority figure, and engage and participate in a new peer group (Yoleri, 2013). According to Perry and Weinstein (1998, p.198), school adjustment could be conceptualised as a multiple task including cognitive, social-emotional and behavioural domains along with various abilities among these domains. It has been suggested that the cognitive domain included in this conceptualisation feature academic achievement and motivation,

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social-emotional domain demonstrates interaction with others and behavioural domain consists of the ability for emotional self-regulation (McGowern, Lowe, & Hill, 2016). According to Spencer (1999, p. 43), school adjustment may be defined as the level of school acculturation and adaptations needed in order to maximise educational fit between students' qualities and multidimensional characters and requirements of learning environments. In accordance with this definition and conceptualisation attempts, it can be suggested that school adjustment is both a multidimensional structure influenced by multiple variables and student's response to the changes that the formal schooling aims to create in students within various domains of development. School adjustment will be achieved when the child's responses are appropriate, and the child will benefit socially and academically from the school environment (Kaya, & Akgün, 2016).

Children's adjustment to the first year of schooling has been subject to scientific studies for various reasons. It is indicated that school adjustment has become the focus of research because it predicts certain parts of school success in later years for typically developing children (Betts, & Rottenberg, 2007, p.150). A range of risks from interpersonal relationships to emotional and occupational challenges faced later in life are suggested to be linked with lower levels of academic achievement (Ladd, 1990). Although there are many factors that affect school adjustment, they are categorised as children, family and school or programme. (Perry & Weinstein, 1998; Hausken & Ratbun, 2002; Bart et al., 2007; UNICEF, 2012; Kaya & Akgün, 2016). A report on school readiness published by the UNICEF (2012) presents the factors related to family as parenting practices, attitudes and knowledge. According to this report, poverty is a strong co-factor of parenting practices in terms of socio-economic status, and has an indirect impact on school readiness. And parents' beliefs, attitudes and practices regarding the school and education provided for their children are strong factors for the child's school readiness. In the report, schools' readiness for children is defined in terms of the aspects of the school environment that provide smooth transition from home to school and advanced learning opportunities for all children. The factors affecting children's readiness for school as a new social envi-

ronment are defined as children's personality traits (Patrick, Yoon, & Murphy, 1995; Reed-Victor, 2004; Yoleri, 2014; Kaya, & Akgün, 2016), social skills (Patrick, Yoon, & Murphy, 1995; Ladd, & Price, 1987; McIntyre, Blacher, & Baker, 2006; Betts, & Rottenberg, 2007; Gülay, 2011), emotional and behavioural characteristics (Perry, & Weinstein, 1998; Yoleri, 2013; McGowern, Lowe, & Hill, 2016), and if they have a disability (Haymes, Fowler, & Cooper, 1994; Hausken, & Ratbun, 2002; Reed-Victor, 2004; McIntyre, Blacher, & Baker, 2006; Hsiao, Tseng, Huan, & Gau, 2013; McGowern, Lowe, & Hill, 2016). While positive personality traits and social behaviours contribute to school adjustment through interactions with peers and teachers, limitations caused by problem behaviours and disabilities exert adverse impacts on the adjustment.

Autism Spectrum Disorder (ASD) is considered as a neurodevelopmental disorder characterised by impairments in social communication and social interaction. And the presence of restricted and repetitive behaviours, interests and activities and typically appears during the first three years of life (APA-American Psychiatric Association-, 2013). The diagnosis of autism is mainly based on the presence of social-communication and social interaction deficits. In the DSM 5, these limitations are defined as the difficulties with forming, maintaining and understanding social relationships. The conceptual and empirical studies of Developmental Psychopathology emphasise that social competence is based on the ability to combine the social, emotional and cognitive processes for a successful social adaptation, and an indication of proper developmental inputs (Hsiao et al., 2013, p.254). Social skills, which are the key concept regarding social competence, are defined as the learned behaviours enabling the child to achieve positive results in social settings or situations, preventing or reducing negative responses, and providing peer acceptance specific to an individual environment and situation (Akgün Giray, 2015, p.3). Demir (2012) suggests that children with ASD display social skill deficits, which occur in non-verbal communication, imitation, joint attention and social reciprocity, and there are two basic dimensions affecting the social interaction skill deficits to start, maintain and end interaction using plays. In her study, Demir (2014, p.224) indicates that

social skill deficiency is one of the core features of autism, and the level and use of these skills in children with ASD are related to their language skills, intelligence levels and whether or not they can receive education along with their gender, age, problem behaviours, school starting age, level of severity of autism, learning environment and whether or not they have a sibling. It can then be maintained that significant limitations in social interaction skills occur running parallel to the increase in the severity levels of ASD. And thus, the DSM 5 specifies the severity levels of Autism as follows: Level 1 – “Requiring support”. Level 2 – “Requiring substantial support”. Level 3 – “Requiring very substantial support”. The more the support is needed, the higher the severity in deficiency gets (APA, 2013).

According to the above theoretical explanations, it could be expected that the severity levels of autism and the limitations occurring in the social interaction behaviours connected to these levels are variables affecting school adjustment adversely. Therefore, this study examined the relationship between the school adjustment and the severity levels of autism in preschool-aged children with ASD and their social interaction behaviours. And for this purpose, answers were sought for following research questions:

1. Is there a significant relationship between the school adjustment and the severity levels of autism in preschool-aged children with ASD and their social interaction behaviours?
2. Do the severity levels of autism in preschool-aged children with ASD and their social interaction behaviours significantly predict these children's school adjustment?

## Method

### *Research Design*

This study, aiming to examine the relationship between school adjustment and severity levels of autism in preschool-aged children with ASD and their social interaction behaviours, was designed in a correlational survey model. Gay, Mills and Airasian (2006, p.191) indicate that correlational researches can sometimes be classified within the group of descriptive researches because they define a currently available situation. However, they point out that correlational researches can be used

to display the degree of relationship between two or more measurable variables and determine the correlation between two variables or predict it based on this correlation unlike the description carried out in the survey and observational researches.

### *Study Group*

The participants of this research consisted of the students diagnosed with ASD attending the Developmental Support Unit (DSU) that operates within a university and provides educational intervention services to prepare preschool-aged (the age range of the students were between 0-7 since the children were with special needs) students with special educational needs for inclusive education programs, and their teachers. Data related to 40 students obtained from 14 teachers were used within this study. A total of 40 students participated in this research, 6 girls (15%) and 34 boys (85%). The students were in the age range of 44 to 78 months with an average age of 63.53 months, standard deviation of 10.42 months and a range of 34 months. Girls were in the age range of 44 to 78 months with an average age of 68.33 months, standard deviation of 13.43 and a range of 34, while boys were in the age range of 44 to 78 months with an average age of 66.21 months, standard deviation of 10.75 and a range of 34. On this research, Turkish Version of Gilliam Autism Rating Scale-2/TV-GARS-2 was used to determine the severity levels of autism for the participant students whose points ranged between 64 to 127 with an average point of 92.25, standard deviation of 16.85 and a range of 63. A total of 14 teachers contributed to the research, 7 female and 7 male by scoring the scales. The teachers were in the age range of 27 to 45 with an average age of 34.71, standard deviation of 6.21 and a range of 18. The occupational experience of teachers ranged between 3 to 20 years with an average of 11 years, standard deviation of 6.46 and range of 17.

### *Data Gathering Tools*

On this research, four data gathering tools were used to collect the data included in this research. A personal information tool was used for demographic information regarding the students and teachers. Turkish Version of Gilliam Autism Rating Scale-2/TV-GARS-2 (Diken, Ardiç, Diken, & Gilliam, 2012) was used to determine the severity levels of autism in the participant students. Interaction Assessment Record

Form-Turkish Version-IARF-TV (Aksoy, & Diken, 2016) was used to determine the levels of social interaction of the students for this research. And finally, the data related to the level of students' school adjustment were obtained with the use of a Short Form of Teacher Rating Scale of School Adjustment-SF-TRSSA (Bakkaloğlu, & Sucuoğlu, 2018). The following parts include the information regarding the use of these tools and findings on the validity-reliability.

#### *Personal Information Form.*

Personal Information Form developed by researcher included questions regarding the gender, age and occupational experience of the teachers. As for the part of the students with ASD, it included questions regarding the age and gender of the students.

#### *Turkish Version of Gilliam Autism Rating Scale-2/TV-GARS-2.*

James E. Gilliam developed this tool, whose original name is Gilliam Autism Rating Scale-2, in 2005. It was adapted to Turkish by Diken, Ardiç, Diken and Gilliam in 2012. TV-GARS-2 is a screening tool developed for screening/diagnosing individuals with ASD, and for scientific researches. This tool is individually applied to individuals suspected of having ASD between the ages of 2 and 23. There are 3 subscales, which include 42 items in total. TV-GARS-2 is scored through a Likert type scale. Parents or a teacher, who know the child closely, can fill the scale. In this research, the teachers scored the scale. According to the findings on the validity and reliability reported for the Turkish Version of the Scale, the total score of the scale was Cronbach's Alpha Coefficients .99 and test-retest reliability was .99.

#### *Interaction Assessment Record Form-Turkish Version/IARF-TV.*

IARF-TV is used in order to generate social interaction behaviours of individuals with ASD or suspected of having ASD within semi-structured play environments in which systematically developed stimuli are presented. This record form is used for both assessing spontaneously occurring social interaction behaviours and responses demanded by the examiner. A behaviour sample, which can represent the behaviour exhibited by the child during a certain time length, is obtained at the end of this practice. This practice consists of

three stages each of which lasts 4 minutes, and the total length of monitoring is 12 minutes in a semi-structured play environment. During this procedure, the adult in the environment has three behaviour types defined for each stage. These are *Active Modelling, Passive No Initiation and Direct Cues*.

During this stage, the child's behaviours are recorded with the use of a time sampling record method. The child's behaviours, after being classified within any of the Interaction, Constructive Independent Play, No Response and Aggressive-Negative categories, are coded in the relevant boxes in the matrix of adult behaviour-child responses. 48 monitoring are conducted in total, 16 in each section. At the end of the test, an Autistic Interaction Score (AIS) is obtained that is formed with the *Interaction Score* of the child and Constructive Independent Play, No Response and Aggressive-Negative scores. AIS is obtained by scoring non-functional behaviours during the phase of social interaction of autism that include but not limited to problem behaviours. The AIS obtained from this tool was used for the data analysis of this research. IARF-TV is a screening tool that is included in the *Autism Screening Instrument for Educational Planning-3 (ASIEP-3)* tool set, which was developed by Krug, Arick and Almond (2008). Aksoy and Diken (2016) conducted the validity and reliability of the Turkish version of the tool. The KR-21 value reported for the interrater reliability coefficient was calculated .83. On the level of Construct-Identification Validity of IARF-TV, the degree of distinguishing children with ASD from non-ASD according to the defined behavioural categories was examined through independent samples t-test analysis. The t-test findings reported for the sub scores of the tool were *Interaction* ( $t = 4.76_{(88)}, p < .01,$ ), *Constructive Independent Play* ( $t = 1.65_{(88)}, p > .01,$ ), *No Response* ( $t = 4.05_{(88)}, p > .01,$ ) and *Aggressive-Negative* ( $t = 1.80_{(88)}, p < .01,$ ).

#### *Short Form of Teacher Rating Scale of School Adjustment SF-TRSSA.*

SF-TRSSA is the Turkish adaptation of the Teacher Rating Scale of School Adjustment that has 52 items and was developed by Birch and Ladd (1997), and reviewed and shortened by Betts and Rotenberg in 1997. The scale included two sub-factors and 15 items after its adaptation to Turkish by Bakkaloğlu and Sucuoğlu (2018). The scale includes the subscales of *Classroom*

*Participation and Positive Orientation.* Filled by the teacher, this tool, which is a 3-point Likert type of scale, assesses whether or not the students achieve school adjustment. The levels of school adjustment increase as the scores obtained from the scale increases. Cronbach's Alpha Coefficients for the scale on the level of internal consistency are .94 for *Classroom Participation*, .84 for *Positive Orientation* and .94 for the total of the scale.

#### *The Process and Data Analysis*

The data of this research were gathered from the students diagnosed with ASD and attended to the DSU that operates within a university and provides special education services for preschool-aged students with developmental disabilities. The data were obtained through which the teachers filled the scales with the students' TV-GARS-2 and SF-TRSSA. And the IARF-TV data were gathered by scoring the videos of the students recorded in the semi-structured play environment by the two responsible research assistants of the DSU created along with the instructions of the IARF-TV. The raters scored the videos using consensus. The data that was obtained were analysed with the use of the SPSS package program. Correlation and regression analyses were used through testing normality and linearity assumptions.

### **Findings**

#### *Examination of Normality*

Before the correlational and predictive analyses of the data were conducted, it had been tested if the distribution of the data was normal or not. Examination of normality was conducted by examining the coefficient of skewness and coefficient of kurtosis. Can (2013, p. 84) indicates that the distribution can be considered as normal when the values obtained with the coefficient of skewness and coefficient of kurtosis are being divided by respectively the standard error of skewness and kurtosis range between -1.96 and +1.96. As a result of this examination, the values obtained by dividing skewness and kurtosis by the standard error calculated for the TV-GARS-2 were respectively 0.52 and -1.57; for the AIS obtained from the IARF-TV were respectively 0.38 and -1.50; for the subscale of Classroom Participation of the SF-TRSSA were respectively 1.53 and -1.29; for the subscale of Positive Orientation of the SF-TRSSA were respectively

0.62 and -1.73, and for the total scores of the SF-TRSSA were respectively 1.60 and -1.33.

#### *Demographic Variables*

Since the gender distributions of the participants were not close to each other, the analyse to compare this variable was not conducted. Pearson correlation coefficient was calculated in order to determine a relationship between the participants' ages related to the age variable and the scores they obtain from the three tools. The findings reveal that there is not a significant relationship between the ages of the participants and the TV-GARS-2 scores ( $r = -0.045, p > .05$ ), IARF-TV scores ( $r = -0.191, p > .05$ ), SF-TRSSA Classroom Participation scores ( $r = 0.116, p > .05$ ), SF-TRSSA Positive Orientation scores ( $r = 0.158, p > .05$ ), and total scores of SF-TRSSA.

#### *Correlations Between Variables*

The degree of the relationship between the variables, whose relationships were examined in this study, was examined through a correlation analysis. The findings revealed medium level of significant positive and negative relationship among all the variables. The correlation coefficients, calculated between the sub-scales and total scores of the TV-GARS-2, IARF-TV and SF-TRSSA, are displayed on Table 1. Table 1 reveals a medium level of positive and significant relationship between TV-GARS-2 and IARF-TV. However, there is a negative, medium level of relationship between both TV-GARS-2 and IARF-TV with the sub-scores and total scores of the SF-TRSSA.

#### *Predicting Among Variables*

Because a negative, significant and medium level of relationship was obtained between the participants' school adjustment and severity levels of autism, and autistic interaction scores in the findings of correlation analysis, a multiple linear regression analysis was conducted in order to determine if these two variables predict the participants' school adjustment. For the multiple linear regression analysis regarding the school adjustment, two sub-scales of SF-TRSSA and the analyses between TV-GARS-2 and IARF-TV were conducted as a dependent variable. Since the analysis was conducted based on two subscales, and subscales show a strong relationship with the total score by nature, it was not needed to conduct an extra analysis with

the total score. It is suggested that there should be normality and linearity between the data, and not be a problem of multi-collinearity among variables in order to conduct multiple linear regression analysis (Büyüköztürk, 2010, p.99).

The data set appears to meet the assumptions of normality and linearity. And in terms of multi-collinearity, that the correlation coefficient between the data was lower than .90 proves evidence that there is not a problem.

**Table 1.**  
*TV-GARS-2, IARF-TV, TRSSA-SF Sub-Scales and Total Scores, Correlation Coefficients*

	TV-GARS-2	IARF-TV	SF-TRSSA Classroom Participation	SF-TRSSA Positive Orientation	SF-TRSSA Total
TV-GARS-2	1.00				
IARF-TV	.458*	1.00			
SF-TRSSA Classroom Participation	-.694*	-.554*	1.00		
SF-TRSSA Positive Orientation	-.600*	-.536*	.852*	1.00	
SF-TRSSA Total	-.683*	-.568*	.980*	.939*	1.00

\*  $p < .01$

#### *Predicting Among Variables*

Because a negative, significant and medium level of relationship was obtained between the participants' school adjustment and severity levels of autism, and autistic interaction scores in the findings of correlation analysis, a multiple linear regression analysis was conducted in order to determine if these two variables predict the participants' school adjustment. For the multiple linear regression analysis regarding the school adjustment, two sub-scales of SF-TRSSA and the analyses between TV-GARS-2 and IARF-TV were conducted as a dependent variable. Since the analysis was conducted based on two subscales, and subscales show a strong relationship with the total score by nature, it was not needed to conduct an extra analysis with the total score. It is suggested that there should be normality and linearity between the data, and not be a problem of multi-collinearity among variables in order to conduct multiple linear regression analysis (Büyüköztürk, 2010, p.99). The data set appears to meet the assumptions of normality and linearity. And in terms of multi-collinearity, that the correlation coefficient between the data was lower than .90 proves evidence that there is not a problem.

#### *Multiple Linear Regression Analysis Related to Predicting Classroom Participation*

The results of the regression analysis related to predicting the *Classroom Participation*, which is the first sub-dimension of school adjustment according to the scores of TV-GARS-2 and IARF-TV, are displayed on Table 2. When zero-order and partial correlations between predictive variables and dependent (predicted) variable are examined, a negative and medium level of relationship (-.686) between TV-GARS-2 and Classroom Participation is obtained, but considering other variables, the correlation between two variables is calculated as -.586. There is a negative and medium level of relationship (-.554) between the IARF-TV and Classroom Participation, however, when the other variables are controlled, the correlation between the two variables is calculated as -.370. Along with the variables of severity levels of autism and autistic interaction variables present a negative, medium level and significant relationship with the scores of classroom participation ( $R = .737$ ,  $R^2 = .543$ ,  $p < .001$ ). The two variables explain the 54% of the total variance in the classroom participation.

**Table 2.***The Results of the Multiple Linear Regression Analysis Related to Classroom Participation*

Variable	B	Standard Error <sub>B</sub>	$\beta$	T	p	Zero-order r	Partial r
Constant	29.301	3.633	-	8.066	.01	-	-
TV-GARS-2	-.187	.043	-.547	-4.312	.01	-.686	-.584
IARF-TV	-.073	.031	-.303	-2.392	.02	-.554	-.370

(R= .737, R<sup>2</sup>= .543, F<sub>(2, 36)</sub> = 21.374, p= .001)*Multiple Linear Regression Analysis Related to The Predicting Positive Orientation*

The results of the regression analysis related to predicting the *Positive Orientation*, which is the second sub-dimension of school adjustment according to the scores of TV-GARS-2 and IARF-TV, are displayed on Table 3. When zero-order and partial correlations between predictive variables and dependent (predicted) variable are examined, a negative and medium level of relationship (-.588) between TV-GARS-2 and Positive Orientation is obtained, but considering other variables,

the correlation between two variables is calculated as -.456. There is a negative and medium level of relationship (-.536) between the IARF-TV and Positive Orientation, however, when the other variables are controlled, the correlation between the two variables is calculated as -.321. Along with the variables of severity levels and autistic interaction variables present a negative, significant and medium level of relationship with the scores of positive orientation (R= .660, R<sup>2</sup>= .436, p < .001). The two variables explain the 44% of the total variance in the positive orientation.

**Table 3.***The Results of the Multiple Linear Regression Analysis Related to Positive Orientation*

Variable	B	Standard Error <sub>B</sub>	$\beta$	T	p	Zero-order r	Partial r
Constant	15.594	2.312	-	6.746	.01	-	-
TV-GARS-2	-.085	.028	-.433	-3.078	.01	-.588	-.456
IARF-TV	-.047	.019	-.338	-2.397	.02	-.536	-.321

(R= .660, R<sup>2</sup>= .436, F<sub>(2, 36)</sub> = 13.912, p= .001)**Discussion**

The first finding of this study reveals that there is not a significant relationship between the ages of the participants and their school adjustment. According to an examination on literature, various findings are reported in this context. According to the findings of Hausken and Ratbun's (2002) study on the school adjustment of preschool-aged children, age does not provide a significant prediction in terms of child's complains about school, however, in terms of child's being upset or reluctant about going to school; children below the age of 5 are more upset and reluctant about going to school by 31% to 35% than

children below the age of 5,5. Gülay Ogelman and Erten Sarıkaya (2013) reported that older preschool children's school adjustment and average scores in all the sub-dimensions of school adjustment are significantly higher than the average of the younger children. However, since related assessment was done for the same children who had received preschool education for a year in this study, whether or not the influence was caused by age or the duration of the preschool education was not explained. Kaya and Akgün (2016) indicate older children in the preschool period have a higher average of adjustment score in terms of cooperative participation and total score than younger children. However, they point out that there is not a significant

difference on the dimensions of self-directiveness, school avoidance and school liking in terms of age. The findings of this study show that a significant difference occurs in only one sub-dimension of school adjustment, and this influence is shifted to the total score. Therefore, the effect size caused by the age factor needs to be calculated. Yoleri (2014) reports that there is a medium level, positive and significant relationship between age and school adjustment, and age predicts school adjustment by 19%. However, different findings were reported on the limited number of studies conducted on children with special educational needs. According to a study by Haymes et al., (1994) examining the school adjustment of 5 preschool-aged children with special educational needs based on cooperative behaviours (CB), problems of school adjustment or unoccupied time (UT), significant increase was observed on CB and significant decrease on UT for 3 children older than the age of 42 months. While UT significantly decreased and CB increased for one of the 3 children younger than the age of 42 months, UT significantly did not decrease but CB partially increased for the second child, and there was not a significant difference on both dimensions for the third child. Although the findings did not provide empirical evidence for the age variable in terms of statistical significance, graphics indicate that older children displayed higher number of adjustment behaviours throughout the year. Reed-Victor (2004) reports that age was not a significant variable in predicting school adjustment in her study conducted through the data obtained from 176 students with special educational needs in the age range of 3-9. Similarly, McGovern et al., (2016) reported that age was not a significant variable in predicting school adjustment in their study conducted through the data obtained from 177 children with learning disability. In their study, in which the relationship between the autistic-like behaviours and school adjustment was examined, conducted with 1321 primary and secondary school students, Hsiao et al., (2013) reported that the school adjustment for the children having autistic-like behaviours was strong during the primary school and reduced in the secondary school.

There is not sufficient empirical evidence that age makes a significant effect on the school adjustment of children with special educational needs. Whether the difference shown related to age in typically

developing children is caused by the fact that they mature with age or they remain in educational environments for long periods of time remains as a question that needs an explanation.

The second and third findings of this study that are related to one another revealed that the school adjustment of preschool-aged children with ASD is related to severity levels of autism and autistic interaction characteristics, and these two variables together significantly predict two sub-dimensions of school adjustment. Haymes et al., (1994) reported that 3 children participating their study had separation anxiety, such as crying or asking their mothers in the first days of school. Children also displayed aggression, self-stimulation and loud vocal behaviours. It was reported that disability and the behaviours related to disability affected the children's school adjustment adversely and the instructions towards improving the social interaction behaviours of children contributed to school adjustment. Cillesen, Haselager and Lieshout (1997) revealed that children's social interaction with their peers in early childhood predict their social adaptation in later years. Hausken and Rathbun's (2002) study reveal that preschool-aged children with disability have higher rates of complaining about school and being upset or reluctant compared to their typically developing peers. In her study, in which having special educational needs was analysed in the category of risk status along with poverty and other factors, Reed-Victor (2003) found that having special educational needs was not a significant predictor of school adjustment. However, considering the fact the risk group included children within homeless education, Title I and Poverty-related programmes along with children with special educational needs and this category involved only the 12,5% of children in the special educational programme, it can be suggested that the findings of this research are limited to explain the relationship of having a disability to school adjustment. McIntyre, Blacher and Baker (2006) reported that the school adjustment of preschool children with intellectual disability were lower compared to typically developing peers. The findings reveal that there is a high level of positive correlation between the IQ score and adaptive behaviour scores, and school adjustment. In their study, Hsiao and et al., (2013) revealed that autistic-like social deficits are related to school adjustment and

social adaptation, and autistic-like social impairments are significantly related to poor academic performance, adverse attitude towards school, school social problems, and adverse peer relationships. Bakaloğlu and Sucuoğlu (2018) revealed that the levels of school adjustment of the children with special educational needs are lower compared to their typically developing peers.

The findings of this research are compatible with the study findings presented so far. These findings reveal that the school adjustment of preschool children with ASD is significantly related to severity levels of autism and social interaction behavioural patterns characteristic to autism. The findings of this study can further be detailed through studies examining the relationships between the school adjustment of children with ASD, their social skill levels, competence of language skills and behavioural characteristics. The effect of social and language skills intervention on school adjustment can be examined with empirical studies.

Findings of this study were obtained from a university-affiliated unit. For this reason, it may differ from the findings of other students trained in private institutions. This study is limited to the measurement of variables within the scope of measurement of data collection tools. More detailed information about school adjustment can be obtained from field studies, interviews, observations and case studies.

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