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Competence of Neurotypical Siblings of Children with Autism Spectrum Disorder

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ABSTRACT

In present study, the school, social and activities competencies of neurotypical siblings of children with autism spectrum disorder (ASD-NTDsibs) were examined. A total of 146 children, including 66 ASD-NTDsibs and 80 children both themselves and their siblings are neurotypical (NTC-NTDsibs), participated in the study, which was designed in the correlational survey model. The data were collected via mothers using part 1 of CBCL / 6-18, which measures competence. In the analysis of the data, competence levels of ASD-NTDsibs were evaluated as normal/ borderline/clinical according to the norms of the scale using the raw scores obtained from the scale and the T scores obtained by using the profiles, and the competence levels were examined according to demographic variables and compared with the competence levels of NTC-NTDsibs. According to the research results, significant differences favour the comparison group regarding school, social and activities sub-fields and total competence levels between the study and comparison groups. ASD-NTDsibs demonstrated a normal level of competence in the school and social sub-fields, clinical level of competence in sub-field activities, and total competence. There was no significant difference between competence of ASD-NTDsibs and demographic variables, except that the sisters showed a high school performance level. Research findings were discussed within the framework of parents' ability to provide limited resources to their neurotypical children, broader autism phenotype (BAP) characteristics and demographic variables. As a result of the research, it can be said that ASD-NTDsibs have low competence and should be supported in school, social and activities fields.

Keywords:
Activities; autism spectrum disorder; competence; school performance; neurotypical sibling; social relations

1. Introduction

According to the family systems theory, all family sub-systems are in interaction and each member of family are affected by this interaction differently (Bronfenbrenner 1977). Based on this theory, the effects of a child with Autism Spectrum Disorder (ASD) which is characterized by social impairment, limitations in verbal and non-verbal communication, repetitive behaviours, and limited areas of interest (American Psychological Association [APA], 2013) on the family go beyond personal effects, affect the family as a whole and change the functions of family systems. Siblings are one of the subsystems that ASD affects directly and indirectly (Diener et al., 2015; Morgan, 1988; Shivers et al., 2019).

Studies on neurotypical siblings of children with ASD (ASD-NTDsibs) are primarily focused on identifying the problems and adaptation difficulties in social, behavioural, and emotional characteristics (Ben-Itzchak et al., 2019; Petalas et al., 2012; Rodrigue et al., 1993; Ross, & Cuskelly, 2006). However, the results of the studies show differences. Some studies indicate that being a sibling of a child with ASD does not cause any disadvantages (Dempsey et al., 2012; Kaminsky & Dewey, 2002; Tomenty et al., 2012; Verte et al., 2003).

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However, many studies stated that ASD harms siblings' emotional, social, and behavioural adaptation (Meyer et al., 2011; Rodrigue et al., 1993; Şengül-Erdem, & Fazlıoğlu, 2020a; Şengül-Erdem, & Fazlıoğlu, 2020b).

While studies on ASD-NTDsibs focus more on problem areas in the literature, how ASD affects siblings' competence in academic and social skills and academic experiences are not known well enough due to limited research (Gregory et al., 2020; Herman, 2013; Surfas, 2005). Competence is defined by Acherbach (1991) as obeying the rules and fulfilling the responsibilities at home, social environment, and school, and it is evaluated in three sub-fields as school, social and activities. Social competence is defined as a broad concept with dimensions such as using social skills effectively, social acceptance, establishing positive relationships with others, not showing maladaptive behaviours and age-appropriate social perception (Haager, & Vaughn, 1995; Vaughn, & Hogan, 1994), while the activity sub-field is defined as the level and quality of participation in daily routines, sport and non-sport activities. School competence is defined as school performance and problems related to school (Achenbach, 1979).

Some studies show that ASD-NTDsibs do not experience any difficulties with school adaptation, school performance, and school-related responsibilities (Macks, & Reeve 2007; Pilowsky et al., 2004; Stampoltzis et al., 2014), while several studies indicate that the siblings show academic difficulties (Barak-Levy et al., 2010; Gregory et al., 2020; Herman, 2013). Herman (2013) stated that in comparison to their peers, ASD-NTDsibs participated less in school-related activities. According to Herman (2013), many factors such as increased responsibilities at home, assuming different roles at home, difficulty accessing parents, psychological difficulties, and genetic predisposition may cause academic difficulties, and ASD-NTDsibs are less supported by their parents in school-related activities and homework than their peers. ASD-NTDsibs participate less in extracurricular school activities than their peers (Barak-Levy et al., 2010; Herman, 2013). One of the reasons for this is that siblings do not have time for out-of-school activities due to their high responsibilities at home (Benderix, & Sivberg, 2007), and the other one is that parents do not have enough opportunities to support the out-of-school activities of their neurotypical children (Herman, 2013).

While neurotypical siblings can positively affect their siblings' social skills with ASD (Tsao et al., 2011), it is still unknown how ASD exactly affects siblings' social characteristics (Shivers et al., 2019). When compared to neurotypical siblings of neurotypical children (NTC-NTDsibs) in terms of social competence, some studies reveal that ASD-NTDsibs do not have any problems and even see their peers as a source of social support (Angell et al.,2012; Kaminsky, &Dewey, 2002; Rodrigue et al., 1993). Conversely, substantial studies reveal that ASD-NTDsibs have difficulties in peer relationships and friendship relations (Giallo et al., 2011; Hastings 2003; Ross, & Cuskelly 2006; Stampoltzis et al., 2014). Dyson (1999) revealed in his longitudinal study that there was a decrease in siblings' social competence in time but stated that this might also be related to adolescence. In another study, it was stated that siblings experienced limitations in spending leisure time with their parents, felt social isolation and needed social support (Angell et al. 2012).

When examining the effect of ASD on siblings, it is essential to take into account demografic variables such as gender, age, and the total number of siblings (McHale et al., 1984; Morgan, 1988), because when demographic risk factors are determined and brought under control, having a sibling with ASD enriches the emotional development of other siblings (Macks, & Reeve, 2007). Although some studies indicate no significant relationship between siblings' competence levels and demographic factors (Mates, 1990), it is emphasized that recognizing the effects of demographic factors is important to eliminate negative effects (Gregory et al., 2020). A research findings revealed that older siblings take more responsibility, have less parental attention, and have lower academic performance regarding the birth order, which is one of the demographic factors (Macks, & Reeve, 2007; Redrigue et al., 1993). Verte et al. (2003) study on gender revealed that sisters of children with high-functioning ASD have more social competence.

Determining the level of competence of ASD-NTDsibs in social and academic fields is essential to emphasize the need to support siblings in these areas (Surfas, 2005). It can be said that studies on this subject are limited in the literature, minimal studies in Turkey are mostly related to the problem areas of siblings, and there is no study examining the academic and social competencies of siblings. The study objective is to examine the competence levels of ASD-NTDsibs. In line with this main purpose, the study has 3 objectives: (1) to evaluate competencies of ASD-NTDsibs as normal/borderline/clinical level, (2) to compare all sub-competence areas and total competence levels of the study group ASD-NTDsibs and the comparison group NTC-NTDsibs, and

to determine how ASD makes a difference in the competence levels of siblings, (3) to reveal how competence levels of ASD-NTDsibs vary according to the variables of birth order, gender, and a number of children in the family.

2. Method

This study was conducted as a correlational survey model that evaluates the social, school and activities competencies of school-age neurotypical children who have siblings with ASD by using a comparison group. Karasar (2012) defined survey models as a type of research method that aims to describe an existing situation as it is, without any experimentation or application. Instead of looking for a cause-effect relationship among the data obtained, the survey model aims to interpret the existing situation.

2.1. Participants

In this study, participants include a study group, and a comparison group, and 146 children. The study group (ASD-NTDsibs) consisted of 66 neurotypical children aged 8-16 with a sibling diagnosed with ASD, while the comparison group (NTC-NTDsibs) consisted of 80 children who were neurotypical both themselves and their siblings and were at the same age range as the study group. Descriptive statistics for demographic information are presented in Table 1.

Table 1. *Demographics for Participants*

		Study Group	Comparison Group
Age	Mean (SD)	11.6 (2.63)	10.7 (2.33)
Gender	Boy	33 (50%)	39 (49%)
	Girl	33 (50%)	41 (51%)
Birth Order	Younger than RS*	20 (30.5%)	34 (42.5%)
	Older than RS	43 (65%)	46 (47.5%)
	Same age with RS	3 (4.5%)	-
Mothers' Age	Mean (SD),	37.5(5.5)	38(5.2)
	Ranj	26-48	28-50
RS gender	Boy	51(77%)	35(44%)
	Girl	15(23%)	45(56%)

*RS (reference sibling): a sibling with ASD for study group; another neurotypical sibling for the comparison group

In this study, in which competence levels of ASD-NTDsibs were examined using a comparison group, a convenience sampling from nonprobability sampling strategies was used while determining the study group. The participants' suitability to the study is vital for convenience sampling (Creswell, 2012). The study group, which agreed to participate in the study voluntarily, was reached through the centres where children with ASD were educated, associations and special education schools, and the comparison group was reached through public education schools at different levels.

2.2. Data Collection and Analysis

Child Behavior Checklist 6-18 (CBCL / 6-18): The first part of the scale consisting of 20 items was used in the study. Part 1 consists of 3 subscales as 'Activities', 'Social' and 'School', and measures the child's competence in these areas (Achenbach, & Ruffle, 2000). "Activities Subscale" evaluates sports and non-sports interests and work done at home or outside the home; 'Social Subscale' evaluates clubs, organizations membership and friends and sibling relations; The "School Subscale" evaluates the school performance, school problems and the level of participation in school activities. Total competence score is obtained from a total of 3 subscales (Erol, & Şimşek, 2010). The scale's adaptation to our country was carried out by Melda Akçakın and Neşe Erol with a study conducted with 5241 children (963 = clinical; 4278 = normal). In the factor analysis conducted for the scale's construct validity, it was determined that 99% of the items measured the intended symptoms at a significant ($p < .01$), positive and satisfactory level. The correlation coefficient was .80 in the convergent validity performed with the Strengths and Difficulties Questionnaire (SDQ) for the scale's convergent validity. In the reliability study of the scale, test-retest reliability coefficients and internal consistency coefficients were calculated. The test-retest coefficient was .78 in total competence (Erol, & Şimşek, 2010).

Demographic Form: The researcher developed the form to get information about the children participating in the study, their siblings and their mothers who filled the data collection tool. Some sections differ for the study and comparison group. In the demographic form developed for the study group, demographic data about the neurotypical child, the sibling with ASD and the mother was obtained. In contrast, in the form prepared for the comparison group, data about the neurotypical child, the other neurotypical sibling and the mother was obtained.

Raw scores obtained from the scale and converted T scores were used in the analysis of the data. The scale has separate profiles for boys and girls; by converting raw scores into T scores based on these profiles, the siblings' sub-fields and total competence levels were determined as normal, borderline, and clinical. Calculations were based on the following figures: clinical level T <37; borderline T = 37-40; normal level T> 40.

Raw scores were used to compare the competence sub-fields and total competence scores of the study and comparison group and reveal how the study group's competence levels differ according to demographic variables.Shapiro-Wilk test was applied to determine whether the raw scores obtained from the scale have a normal distribution.According to the results of the analysis obtained, it was determined that the "Activities", "Social", "School" sub-dimensions and "Total Competence" scores of the scale show the normal distribution and are presented in Table 1. For this reason, parametric statistical techniques were used.

Table 2. *Normal Distribution Characteristics of Sub-Fields and Total Competence Scores*

	Activities	Social	School	Total Competence
Shapiro – Wilk	0.971	0.978	0.961	0.985
p	0.118	0.299	0.039	0.589

2.3. Ethics Committee Approval

This research was approved by the Social Sciences Scientific Research Ethics Committee of İstanbul Medipol University (approval number 67).

3.Results

In this part, the findings of the research are given in the order of the research objectives. Since the first aim was to evaluate the competence level of ASD-NTDsibs as normal/borderline and clinical according to the T scores obtained from the scale profiles, the "Activities", "Social", "School" and "Total Competence" T scores of 66 siblings were calculated, and the results are presented as frequency (n) and percentage (%) in Table 3.

Table 3. *The Competence Levels of the Siblings in the Study Group*

	Study group											
	Normal				Borderline				Clinical			
	girl		boy		girl		boy		girl		boy	
Sub-Dimension	n	%	n	%	n	%	n	%	n	%	n	%
Activities	10	15.2	8	12.1	9	13.6	5	7.6	14	21.2	20	30.3
Social	22	33.3	26	39.4	8	12.1	5	7.6	4	6.1	1	1.5
School	32	48.5	32	48.5	1	1.5	1	1.5	-	-	-	-
Total Competence	5	7.6	4	6.1	3	4.5	6	9.1	25	37.9	23	34.8

According to the findings in Table 3, it has been revealed that the areas with the lowest level of competence were activities and total competence. In the activities sub-field, 21.2% of sisters and 30.3% of brothers had clinical level competence. In total competence, 37.9% of sisters and 34.8% of brothers were at the clinical level. While 33.3% of sisters and 39.4% of brothers were normal in the social sub-field, nearly half (48.5%) of sisters and brothers in the school sub-field were normal. It was seen that there were no siblings at the clinical level in

the school sub-field. In the activities and social sub-fields, it was found that sisters showed more intense borderline level competence than brothers.

In line with the study's first aim, the mean of the T scores of ASD-NTDsibs in sub-domains and total competence were calculated and the level corresponding to these means in the profiles was determined as normal/border/clinical. According to the results, the mean T scores of the siblings in the activities sub-field and total competence were 32.3 and 32.6, respectively, and both were at the clinical level of competence (T <37). In the social and school sub-fields, the means were 40.7 and 46, respectively, and siblings had normal levels of competence in both fields (T> 40).

The study's secondary objectiveis to compare all competence sub-fields and total competence levels of the study and comparison groups to determine the difference made by having a sibling with ASD on siblings' competencies. For this purpose, the significance of the differences between the study's competence scores and comparison groups was determined by using the t-test and the findings presented in Table 4.

Table 4. *Activities, Social, School and Total Competence Levels of Study and Comparison Group*

Competence	Sibling with ASD	N	M	SS	t	p
Activities	Present	66	5,77	2,72	- 6,73	0.00*
	Absent	80	8,88	2,83		
Social	Present	66	8,89	2,33	- 4,37	0.00*
	Absent	80	10,85	2,95		
School	Present	66	10,03	2,91	- 2,09	0.03*
	Absent	80	10,98	2,60		
Total	Present	66	24,69	5,90	- 6,27	0.00*
	Absent	80	30,72	5,67		

* $p < 0.05$

According to the findings in Table 4, "Activities", "Social", "School" sub-fields and "Total Competence" scores of NTC-NTDsibs " were significantly different from those of ASD-NTDsibs ($p < 0.05$) and this difference appeared to be in favour of NTC-NTDsibs. According to this finding, children who had siblings with ASD in the study group, showed less competence in the areas of home and out-of-home activities, sports activities they participate in, membership of organizations and clubs, establishing friendship and sibling relationships, school performance, and participating in school activities than the comparison group. The difference was most evident in the activity sub-field.

The study's third aim is to examine whether ASD-NTDsibs competence levels differ significantly according to some demographic variables. The first demographic variable was the gender of both ASD and neurotypical siblings. Two independent samples t-test was used to determine the effect of the gender of siblings with ASD on the competencies of neurotypical siblings. According to the results of the analysis, it was revealed that the gender of siblings with ASD did not make a significant difference in "Activities" ($t = - 0.897$; $p > 0.05$), "Social" ($t = - 0.575$; $p > 0.05$), "School" ($t = - 0.490$; $p > 0.05$) and "Total Competence" ($t = - 0.433$; $p > 0.05$) levels of ASD-NTDsibs. In other words, regardless of the gender of the sibling with ASD, the neurotypical siblings had similar characteristics in the "Activities", "Social", "School" sub-fields.

Two independent samples t-test was used to determine the effect of ASD-NTDsibs gender on competence levels, and the findings are presented in Table 5.

Table 5. *Analysis Results of Activities, Social, School Performance and Total Competence Levels According to ASD-Ntdsibs Gender Variable*

Competence	Gender	n	M	SS	t	P
Activities	Boy	33	5,30	2,84	- 1,359	0.179
	Girl	33	6,21	2,58		
Social	Boy	33	8,96	2,37	0,262	0.794
	Girl	33	8,81	2,32		
School	Boy	33	6,72	2,75	- 2,054	0.044*
	Girl	33	8,21	3,11		
Total	Boy	33	21,00	5,86	- 1,550	0.126
	Girl	33	23,24	5,88		

* $p < 0.05$

According to the data in the table, the gender of the neurotypical siblings did not cause a significant difference in the levels of "Activities", "Social", and "Total Competence". On the other hand, it is revealed that gender causes a significant difference in the "School" sub-field ($t = - 2.054$; $p < 0.05$). When we looked at the mean values to determine which group this difference was in favour, it was determined that the "School" mean ($X_G = 8.21$) of the sisters was higher than the mean of the brothers ($X_B = 6.72$). As a result, neurotypical sisters were more successful at school than brothers and had fewer school-related problems while participating more in school activities.

Two independent samples t-test was used to determine whether the status of neurotypical siblings being older or younger than siblings with ASD, which was the second variable considered concerning the third aim of the study, showed a significant difference in their competence levels. According to the results of the analysis, it was determined that being older or younger than the sibling with ASD does not make a significant difference in the "Activities" ($t = - 0.428$; $p > 0.05$), "Social", ($t = - 0.251$; $p > 0.05$), "School" ($t = - 1.227$; $p > 0.05$) and "Total Competence" ($t = - 0.876$; $p > 0.05$) levels of neurotypical siblings. In other words, neurotypical siblings showed similar social and academic competence regardless of being older or younger than the sibling with ASD.

Another demographic variable whose effectiveness was tested on competencies of ASD-NTDsibs was the number of children, and a one-way analysis of variance was used for this. According to the analysis results obtained, there was no significant difference between the levels of "Activities" ($F = 2,444$; $p > 0.05$), "Social" ($F = 0,995$; $p > 0.05$), "School" ($F = 0,745$; $p > 0.05$) and "Total Competence" ($F = 1,270$; $p > 0.05$) according to the total number of children in the families of ASD-NTDsibs. In other words, ASD-NTDsibs had similar competence regardless of the number of children.

4. Discussion and Conclusion

In present study, the social, school and activities competencies of neurotypical 8-16 years old school-age children who have a sibling with ASD and how their competence levels differ according to demographic variables were examined. The study found that ASD-NTDsibs had clinical competence in the sub-field of activities and total competence, showed normal competence in school and social sub-areas and did not differ according to demographic variables except sisters' school performance.In the study, the competence levels of ASD-NTDsibs and NTC-NTDsibs were compared, and it was found that ASD-NTDsibs had significantly lower competence.

In the study, the first aim of which was to evaluate the ASD-NTDsibs competence levels as normal/borderline /clinical, the finding that the siblings were at a clinical level in the areas of total competence and activities is supported by the previous study findings (Barak-Levy et al., 2010). A study conducted by Barak-Levy et al. (2010) with 27 children with sibling with ASD concluded that more than half of the siblings (55.6%) were at the clinical level in the field of activity and approximately 30% of them were at the borderline. In the same study, most of the siblings (77.8%) were normal in the social subtest. The study of Lefkowitz et al. (2007) determined that the siblings' social competencies are at the clinical level. In the current research, while the

siblings' school competence level was normal, Barak-Levy et al. (2010) stated that more than half of the siblings (51.8%) were at the clinical/ borderline level.

In line with the second aim of the study, competence levels of ASD-NTDsibs and NTC-NTDsibs were compared, and it was seen that ASD-NTDsibs showed statistically significantly lower competence. It can be mentioned that the studies on the subject in the literature are limited, and the results are inconsistent. While some studies support this finding (Barak-Levy et al., 2010; Lefkowitz et al., 2007; Kaminsky, & Dewey, 2002), some studies do not reveal meaningful difference (Herman, 2013) or ASD-NTDsibs have higher competence (Mack, & Reeve, 2007). Barak-Levy et al. (2010) stated that the siblings of children with ASD had less participation in extracurricular social activities at school and experience more academic difficulties than the siblings of children without ASD. A study comparing the sense of belonging to the school and academic self-efficacy level of ASD-NTDsibs and NTC-NTDsibs found that ASD-NTDsibs felt lower school belonging and had lower academic self-efficacy (Gregory et al., 2020). It is known that siblings of children with different development experience more peer relationships problems and behave more aggressively and anxiously towards their peers (Cuzzocrea et al., 2014). Conversely, in studies in which the findings of the study were not supported, it was stated that annual grade point averages of ASD-NTDsibs, which are the most important indicator of academic performance, were similar to those of children who did not have siblings with ASD (Herman, 2013). The two groups did not differ in academic performance (Quintero, & McIntyre, 2010).

The fact that the competence level of ASD-NTDsibs revealed in the study is significantly lower than the comparison group can be discussed from some perspectives. One of them may be that if there is a child with ASD in the family, parents may spend most of their time for their child with ASD, and they may not make enough time for their neurotypical children while carrying out the daily program they have created for their child with ASD. In this case, siblings cannot receive enough parental resources from in their school life or social life, and their competence in these areas remains low. Studies show that ASD-NTDsibs get less support from their families and their parents spend less time with these children (Herman, 2013; Huinker, 2012; McHale, & Harris, 1992; Quintero, & McIntyre, 2010). Another issue where parents experience restriction along with parental attention is financial resources. Providing services to children with ASD in education, intervention, and health care put families into trouble financially. Besides, parents can provide limited access to opportunities to improve other children's social competencies, such as participation in social activities and club membership. Studies have shown that parents use their attention, financial and energy resources for their children with ASD, which negatively affects other individuals in the family, including siblings (Macks, & Reeve, 2007; Orsmond, & Seltzer, 2007; Quintero, & McIntyre, 2010). In a study investigating neurotypical siblings' experiences, they stated having a sibling with ASD was challenging. They stated that their siblings with ASD never did homework at home, so they did not do it either because they did not have such an obligation, and their success had decreased (Huinker, 2012). The same study stated that the negative effects of siblings with ASD mainly were on academic performance and parental participation (Huinkin, 2012). Considering that there is a significant positive correlation between family participation and children's academic performance (Fan, & Chen, 2001), this finding of the study is meaningful. The disruption of family routines with the participation of an individual diagnosed with ASD also causes difficulties in siblings' social development areas (Rogers, & Hogan, 2003). Therefore, spending time with family regularly and establishing routines are essential for neurotypical siblings to develop themselves in the social field (Giallo, & Gavidia-Payne, 2006).

Another factor that may cause academic, social and school competencies of ASD-NTDsibs to be significantly lower than the comparison group is that neurotypical siblings have more and different responsibilities at home, leading to a decrease in academic achievement and low participation in extracurricular activities at school. Studies have shown that these different responsibilities and roles of siblings cause limitations in their lives (Angell et al., 2012; Barak-Levy et al., 2010; Mascha, & Boucher, 2006; Petalas et al., 2009). Bendrix and Sivberg (2007) state that siblings with ASD assume overprotective and parental roles for their siblings with ASD, they have to look at life from a larger perspective, and their academic performance will be low since it has lost its importance for them.

Broader Autism Phenotype (BAP) is less severe and is referred to as sub-clinical social functions, language, cognitive, and personal characteristics that similar to the core features of ASD (Landry, & Chouinard, 2016; Losh et al., 2008). It has been stated that BAP characteristics are more common in families and relatives of

individuals with ASD (Piven et al., 1997). It has been revealed that the problems experienced by the siblings of children with ASD in the field of social competence are very evident (Constantino et al., 2006). It is estimated that about 25% of their siblings may have phenotypic features (Meyer et al., 2011; Yirmiya et al., 2006). Based on the discription of BAP and the fact that BAP may be more intense in ASD-NTDsibs, it can be said that siblings do not want to participate in social activities. Instead, they want to participate less in extracurricular activities, they experience limitations in establishing and maintaining peer relationships, and as a result, their social competence levels are low.

As to how competence varies according to demographic variables - which is the third study objective, it was revealed that the competence levels of siblings did not show significant differences, except for the gender of the neurotypical sibling, according to gender, being older / younger than the sibling with ASD and the total number of children in the family (Giallo et al., 2011; Mates, 1990). Mates (1990) stated that the school performance of ASD-NTDsibs does not differ according to gender and sibship size. In another study, it was stated that ASD-NTDsibs had more friend and peer problems than the comparison group, but this was not related to demographic factors (Giallo et al., 2011). A study was carried out to determine whether being older or younger than a sibling with ASD can make any difference in parental attention and resource allocation for the neurotypical children and siblings born before a child with ASD. It was also to determine whether these children will have less behavioural difficulties and better academic performance than siblings born after a child with ASD. It was also carried out to test if siblings born after a child with ASD will have poor academic success due to limited access to the resources and parental attention. Consequently, the study has revealed that being older or younger than a sibling with ASD does not make a difference in academic performance (Orozco, 2014). Another situation assuming that older siblings may have higher academic performance than younger siblings is that academic performance of siblings born before a child with ASD will be higher because they have a "tutor" function in sibling relationship and this function will strengthen the cognitive and psychosocial sides of older siblings (Herman, 2013). However, the findings of the present research were not similar to this assumption. Even if it is thought that sisters may assume more maternal roles in sibling relationships and they will show low school performance due to the heavy responsibility they feel (Mates, 1990), it is stated that there is no significant relationship between the difficulties experienced by the siblings and socio-demographic characteristics (Giallo et al., 2011).

The study's findings have shown once again that the effect of ASD on siblings can be in a vast range, as stated above. The studies carried out with a perspective that many individual and contextual factors about siblings can interact to understand siblings' experiences with another sibling with ASD better, and their needs can be presented as a suggestion for further research.As a result of the research, the low level of competence of ASD-NTDsibs in social life, school performance, and other activities emphasises the need to support siblings in these fields. Providing this support with psychosocial support services that will be offered to the whole family from the moment an individual with ASD joins the family will adapt to changing life routines easier for all family members. When considered in line with the study's aim, siblings need more out-of-home activities participation, more social resources and more support for academic performance. For this, parents can share jobs between themselves or make time for their neurotypical children by getting support from their close relatives. Taking responsibilities at home by siblings appropriate to their age and development, creating spaces where they can spend time with their peers, can effectively support their social development. Finally, it would be appropriate to state that this study, which is carried out to determine the social and academic competence of ASD-NTDsibs, will underline the need to support siblings.

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