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Abuse and Neglect of Children With Specific Learning Disorders in Türkiye: A Case–Control Study

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ABSTRACT

Background: Although it is often stated that children with special needs are at risk of being abused and neglected, research conducted on the abuse of children with specific learning disorders (SLDs) is limited.

Methods: This case–control study aims to compare exposure to neglect and abuse among children diagnosed with SLDs (case group) and children with typical development (control group). The study included children aged 6 to 12 years who were referred to the Child and Adolescent Psychiatry Outpatient Clinic and Pediatric Clinic of a hospital in Türkiye. The data collection process included 196 participants and lasted for 7 months in 2020.

Results: Based on the analysis of the data collected with the Schedule for Affective Disorders and Schizophrenia for School Age Children-Present and Lifetime Turkish Version (K-SADS-PL-T) and the Abuse Assessment Questionnaire, we determined that children with SLDs were physically and emotionally abused more than the children of the control group. In addition, they witnessed violence between their parents more than the control group. Physical abuse, emotional abuse and witnessing family violence were identified as significant predictors for SLD.

Conclusions: The presence of SLDs is a significant risk factor for children to be exposed to abuse even in the absence of ADHD as a comorbidity.

1 | Introduction

Specific learning disorders (SLDs) are defined as conditions in which children's reading, writing, mathematics and self-expression skills are low for their age group and education level, and they affect approximately 5%–15% of schoolchildren (American Psychiatric Association [APA] 2013). By a similar definition, SLDs are common developmental and neurobiological disorders of childhood that cause impairment in one or more areas, including reading, writing, mathematics, listening, speaking and reasoning (Kaufman and Kaufman 2001). In addition to their academic skills, children with SLDs may have difficulties in social life, impulsivity in activities requiring attention, an unwillingness to play games that involve curiosity and tendencies of being quickly disappointed and reacting inappropriately (Bonifacci et al. 2020; McDowell 2018).

SLDs, which are developmental disorders of neurological origin, may occur due to brain damage caused by problems occurring in the prenatal, perinatal or postnatal period; genetic factors; neurological dysfunction; close consanguineous marriages; parental drug, alcohol or tobacco use; lead poisoning; and long-term malnutrition in early childhood (Cortiella and Horowitz 2014; Doğan 2012). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American

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Summary

- Specific learning disorders (SLDs) significantly increase the risk of children encountering abuse and neglect in Türkiye.
- The prevalence and nature of abuse and neglect experienced by children with SLDs necessitate tailored intervention strategies and awareness programmes.
- Our research underscores the critical need for healthcare professionals, educators and caregivers to recognize and address the heightened risks of maltreatment in children with SLDs.
- The findings from our case–control study illuminate the specific vulnerabilities of children with SLDs to different forms of abuse, providing a data-driven basis for targeted protective measures.
- This study's insights advocate for the abandonment of a one-size-fits-all approach in addressing child maltreatment, emphasizing the necessity of specialized strategies for children with SLDs.

Psychiatric Association [APA] 2013), prematurity and low birth weight are also risk factors for SLDs.

Comorbid psychiatric disorders such as attention-deficit/hyperactivity disorder (ADHD) (Araz Altay and Görker 2018), behavioural disorder (BD) (Bandla, Mandadi, and Bhogaraju 2017), oppositional defiant disorder (ODD) (Araz Altay and Görker 2018), depression (Darweesh et al. 2020; Sideridis 2005) and anxiety disorders (Rosaria Chieffo et al. 2023; Thakkar et al. 2016) are most common in children diagnosed with SLDs (Khodeir, El-Sady, and Mohammed 2020; Sahoo, Biswas, and Padhy 2015). Furthermore, SLDs are considered to be heritable, chronic childhood disorders that generally remain into adulthood, but with modifications in how the learning difficulties are manifested (Sadock, Sadock, and Ruiz 2017). Not only children with psychiatric disorders but also children with SLDs experience challenges such as social and emotional problems (Wiener and Schneider 2002), deficits in social skills (Elksnin and Elksnin 2004), peer bullying or exclusion by peers (Bonuomo et al. 2023), and negative self-perceptions (Haft, Greiner de Magalhães, and Hoeft 2023). In addition to these difficulties, there are also risks of exposure to maltreatment by adults (Ozawa, Takahashi, and Harizuka 2018).

Child maltreatment, including all forms of abuse and neglect, is a global public health problem associated with a significant burden of suffering. It refers to actions or inactions that are defined as inappropriate or harmful to the child, negatively affecting or restricting the child's development (McElvaney and Lalor 2014; Shahar, Doron, and Szepsenwol 2015). The four widely recognized forms of child maltreatment are physical, sexual and emotional abuse and neglect (Gilbert et al. 2009). Physical abuse is defined as the intentional use of physical force (such as pushing, slapping, kicking, biting, tying up, burning or poisoning) that causes or is likely to cause harm to the health, life, development or dignity of a child (Heyman et al. 2020). Sexual abuse is defined as any sexual behaviour that is committed with a child in a way that he/she does not understand, without his/her consent or at a time when he/she is not developmentally ready, or that violates the laws and social values of society. Emotional abuse is a pattern of severe impairment by the parent or caregiver in the provision of appropriate and supportive environmental conditions for the child's development. Rejecting and hostile parenting styles such as restraining the movement of the child and blaming, intimidating or displaying contempt towards the child are also considered within this scope. Neglect is a pattern of inability, whether intentional or unintentional, to meet the child's needs in different areas such as health, education, nutrition, shelter and emotional development (World Health Organization [WHO] 2015). All types of maltreatment are crimes against humanity and are very common against children around the world, and the actual number of cases is often unknown. According to the report on child abuse, one out of every four children is exposed to physical abuse, with 23% of children exposed to physical violence including shaking and beating and 36% of children exposed to emotional abuse such as threats, scolding, humiliation and pressure (Hornor 2014; WHO 2012).

Child abuse is a significant issue, especially impacting vulnerable populations including children with mental and developmental disabilities. Studies indicate that children with certain illnesses, such as autism and ADHD, are more likely to experience abuse and neglect (Sullivan & Knutson, 2000). Mandell et al. (2005) found that 18.5% of children with autism and 14.3% of girls with ADHD were subjected to physical abuse in a population-based study. Hadianfard (2014) discovered in a cross-sectional study that emotional abuse and neglect were more common than other forms of abuse and children with ADHD often experienced several types of maltreatment.

Dinkler et al. (2017) conducted research to investigate if maltreated children exhibit a higher prevalence of neurodevelopmental disorders and if maltreatment acts as a risk factor for greater neurodevelopmental disorder burden and increased symptoms after accounting for familial influences. A study was conducted on 8192 9-year-old twins born in Sweden between 1997 and 2005. Maltreated children exhibited a higher average number of neurodevelopmental abnormalities compared to non-maltreated children. Using a co-twin control design, researchers found no link between maltreatment and a higher incidence of neurodevelopmental problems, attributing this to shared genetic influences across twins.

Several studies have explored the association between various forms of maltreatment and neurodevelopmental disorders, highlighting an elevated risk of maltreatment among children with conditions such as ADHD and autism (Gokten et al. 2016; Langevin, Marshall, and Kingsland 2021; Mandell et al. 2005; McDonnell et al. 2019; Mohammadi et al. 2019; Walker et al. 2021). In contrast, SLDs have received less attention in this context, particularly when compared to the breadth of research focusing on other neurological impairments. To address this notable gap in the literature, our study provides empirical evidence on the maltreatment risks faced by children with SLDs in Türkiye, thus broadening the understanding of maltreatment across different neurodevelopmental disorders.

The aim of this study is to compare the rates of neglect and abuse exposure between children diagnosed with SLDs and those with

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typical development. We hypothesized that children diagnosed with SLDs are exposed to abuse and neglect at a higher rate than typical development children. In addition, we tested whether ADHD as a comorbidity increases the rate of abuse and neglect among children with SLDs.

2 | Materials and Methods

2.1 | Sample

The study design was planned as a single-centre cross-sectional case–control study. Between December 2020 and June 2021, the study was conducted with 98 children diagnosed with SLDs who were evaluated at the paediatric and adolescent mental health clinic of Bursa Yüksek İhtisas Training and Research Hospital, 98 children with typical development applied to the same hospital's general paediatric clinic and participating children's parents. Besides ethical approval was obtained from the Bursa Yüksek İhtisas Training and Research Hospital's Clinical Ethics Committee (Protocol Number: 2011-KAEK-25/Date: 2019/10-05), the method and purpose of the research were verbally explained to all participants, and subsequently, the informative consent form was fulfilled by voluntary parents. A power analysis was conducted to determine the sample size of the research.

The inclusion criteria for the children with SLDs were determined as being diagnosed with SLDs, aged between 6 and 12 years and volunteering to participate in the study. The exclusion criteria were having a chronic physical or medical illness history and the presence of a psychiatric comorbidity that would impair functionality such as autism spectrum disorder, psychotic disorders and bipolar affective disorder (except ADHD). The control group was selected from children with typical development who applied outpatient clinic of paediatrics at the same hospital with complaints like fever, sore throat and abdominal pain during the same period. The exclusion criteria for the control group were not diagnosed either with SLDs or with ADHD in addition to the determined criteria for children with SLDs.

When the Type I error was determined as 0.05, the power level was 80.0%, and the effect size was 0.4 in determining the number of participants to be included in the study (Faul et al. 2007), the minimum number of participants to be included in each group was determined as 98 for a total of 196.

2.2 | Data Collection and Screening Procedures

The Schedule for Affective Disorders and Schizophrenia for School-Age Children—Present and Lifetime Version, DSM-5 (K-SADS-PL), was developed by Kaufman et al. (2016) in the form of a semi-structured interview. The Turkish adaptation and the validity and reliability study of the form were carried out by Ünal et al. (2019). The K-SADS-PL-T is implemented as a face-to-face interview with parents and children, and the results are evaluated in line with the information obtained from the stakeholders (i.e. parents, schools, child). If there is a discrepancy between the information obtained from the parents and children, the clinician uses his/her own judgement.

The Abuse Assessment Questionnaire consists of 21 questions addressing physical and emotional abuse, neglect, the witnessing of violence and sexual abuse (Yılmaz Irmak 2008). In this study, two items addressing sexual abuse excluded from the scope of the research upon the request of the ethical commission. Consequently, the administered form included nine questions about physical, four questions about emotional abuse, four questions about neglect and two questions about witnessing of domestic violence. In this study, this questionnaire was administered to the children participating in the research using the semi-structured interview method, and the types of neglect and abuse that the children were exposed to were recorded with information about the perpetrator. The previously reported Cronbach alpha value for this scale ranged between 0.78 and 0.80 (Yılmaz Irmak 2008). The Cronbach alpha for the present study was 0.787.

The psychiatric evaluations of all children were conducted by the child and adolescent psychiatrist to the children individually in a private room at the hospital based on the DSM-5 psychiatric interview (APA 2013). SLDs and possible comorbid diagnoses were assessed using the K-SADS-PL-T. The clinician evaluated 139 children diagnosed with SLDs and 120 children with typical development. Based on the inclusion and exclusion criteria, 98 children with SLDs and 98 children with typical development were included in the study (see Figure 1). The Abuse Assessment

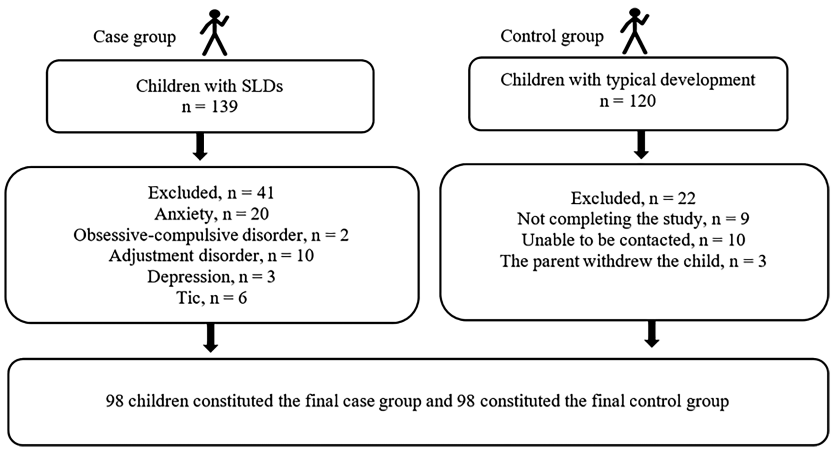


FIGURE 1 | Process of determining the participants of the children with specific learning disorders (SLDs) and control group.

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Questionnaire self-scale was administered to participants to assess potential exposure to abuse. A sociodemographic information form prepared for the study was filled out by the parents to evaluate the participants' sociodemographic information.

2.3 | Data Analysis

The data were examined with the Shapiro–Wilk test to determine whether they reflected normal distribution. The results were presented as mean ± standard deviation or frequency and percentage. Normally distributed data were compared with independent samples *t*-tests. Categorical variables were compared using Pearson chi-square, Fisher exact and Fisher–Freeman–Halton tests between groups. The Bonferroni test was used as a multiple comparison test. SLD-related independent variables were examined using multiple logistic regression analysis. Statistically, the significance level was accepted as $\alpha = 0.05$. Statistical analyses were performed with IBM SPSS ver.28.0 (IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp.).

3 | Results

3.1 | Sociodemographic Findings

The research examined 196 children, distinguishing between those with SLDs and a control group, revealing significant disparities in parental education, occupation and family structure. Specifically, parents with university education were more prevalent in the control group, whereas those with primary education dominated the SLD group. Occupation types also differed, with a higher incidence of mothers in 'other' occupations and fathers in public sector jobs within the control group, contrasting with the SLD group. Additionally, extended families were more common among the SLD group (8.9%). The study also found that a significant portion of children with SLDs (60.2%) had ADHD and that children with SLDs were more likely to experience physical abuse, from by the mother, a teacher, siblings and peers, with over half being abused by friends. These children typically received their SLD diagnosis in early childhood, around an average age of 8.31 years, underscoring specific sociodemographic and health-related challenges they face compared to their peers. Sociodemographic characteristics of participants are shared in Table 1.

3.2 | Results Regarding Abuse, Neglect and Witnessing Family Violence

Table 2 provides a comparison of the study and control groups in terms of the results for abuse and neglect of the children within the framework of four main topics. The results for each topic are addressed separately below.

3.2.1 | Results Regarding Physical Abuse

According to the results regarding the exposure of the children in the study and control groups to physical abuse, as seen in Table 2, it was determined that all statistically significant items except for Items 7 and 8 were higher for the children with SLDs than the control group ($p < 0.05$).

3.2.2 | Results Regarding Emotional Abuse

The study and control groups were compared with the chi-square test in terms of four items evaluating the emotional abuse of children and adolescents (Table 2). According to the analysis results, a statistically significant difference was found for all items, and emotional abuse was determined to be more prevalent in the children with SLDs compared to the control group ($p < 0.05$).

3.2.3 | Results Regarding Neglect

Table 2 provides the results of the comparison of the two groups with the Fisher exact test regarding neglect. A statistically significant difference was not found between the two groups for any items ($p = 0.497$). None of the children in either group reported being exposed to situations such as not being taken to a doctor or given medication (item 3).

3.2.4 | Results Regarding Witnessing Family Violence

According to the Pearson chi-square test results provided in Table 2 in terms of witnessing family violence, it was determined that children in the children with SLDs were significantly more likely to witness family violence than those in the control group ($p < 0.05$).

3.3 | Results Regarding Children With SLDs With and Without Comorbid ADHD Being Exposed to Abuse and Neglect

As shown in Table 3, a statistically significant difference was not found between children with SLDs having and not having ADHD as a comorbidity in terms of physical and emotional abuse, neglect and the witnessing of family violence.

3.4 | Multiple Logistic Regression Analysis

According to Table 4, the SLD-related independent factors in multiple logistic regression analysis including age, gender and educational level of mother and father. According to results, behaviours such as hair pulling, ear pulling or biting; behaviours such as pushing or rough handling; threatening to injure or kill with knife or other tools; mocking, humiliation and insulting nicknames; and seeing two adults having fistfights or other fights were found to be SLD-related independent factors ($p < 0.05$). Significance of the obtained model was determined by using Hosmer and Lemeshow test (chi-square = 3.477; $df = 8$; $p = 0.901$). When coefficients of the multiple logistic regression model that were estimated were controlled by using the omnibus test, they were observed to be significant (chi-square = 105.127; $df = 8$, $p < 0.001$).

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TABLE 1 | Comparison of sociodemographic characteristics.

Sociodemographic characteristics		Children with SLDs ($n=98$) *n* (%)	Control group ($n=98$) *n* (%)	*p*
Gender	Male	60 (61.2%)	52 (53.1%)	0.248[b]
	Female	38 (38.87%)	46 (46.9%)	
Mother's educational level	Elementary	**34 (39.1%)***	11 (12.5%)	**<0.001**[b]
	Junior high	12 (13.8%)	5 (5.7%)	
	Secondary	26 (29.9%)	29 (33.0%)	
	College	**15 (17.2%)***	43 (48.9%)	
Mother's occupation	Housewife	**68 (79.1%)***	43 (43.9%)	**<0.001**[b]
	The public sector	**4 (4.7%)***	29 (29.6%)	
	Employed in private sector	6 (7.0%)	14 (14.3%)	
	Self-employed	7 (8.1%)	10 (10.2%)	
	Other	1 (1.2%)	2 (2.0%)	
Father's education level	Elementary	**20 (23.5%)***	5 (5.6%)	**<0.001**[b]
	Junior high	11 (12.9%)	7 (7.8%)	
	Secondary	32 (37.6%)	26 (28.9%)	
	College	**22 (25.9%)***	52 (57.8%)	
Father's occupation	The public sector	**10 (12.7%)***	25 (26.0%)	**0.016**[b]
	Employed in private sector	26 (32.9%)	39 (40.6%)	
	Self-employed	30 (38.0%)	26 (27.1%)	
	Other	**13 (16.5%)***	6 (6.3%)	
Family type	Divorced parents	3 (3.8%)	4 (4.2%)	**0.047**[c]
	Nuclear family	69 (87.3%)	90 (94.7%)	
	Extended family	7 (8.9%)	1 (1.1%)	
ADHD	No	39 (39.8%)	—	—
	Yes	59 (60.2%)	—	—
'Have you been abused physically?'	No	39 (48.1%)	14 (77.8%)	**0.023**
	Yes	42 (51.9%)	4 (22.2%)	
'Physically abused by whom?'	Mother	20 (20.4%)	8 (8.2%)	**0.014**[c]
	Father	7 (7.1%)	5 (5.1%)	0.551[c]
	Siblings	29 (29.6%)	10 (10.2%)	**<0.001**[c]
	Friends	52 (53.1%)	12 (12.2%)	**<0.001**[c]
	Teachers	8 (8.2%)	0 (0%)	**0.007**[c]
	Relatives	7 (7.1%)	3 (3.1%)	0.194[c]
Age of child, years		9.16 ± 1.94	9.52 ± 1.60	0.155[a]
Age at first diagnosis of SLDs, years		8.31 ± 1.89	—	—
Mother's age		36.96 ± 6.19	37.92 ± 4.67	0.240[a]
Father's age		41.10 ± 6.08	41.62 ± 4.70	0.529[a]

Note: Significant *p*-values are presented in bold ($p<0.05$).
*Significant results according to pairwise comparisons between groups.
[a]Independent samples *t*-test.
[b]Pearson chi-square test.
[c]Fisher–Freeman–Halton exact test.

4 | Discussion

To our knowledge, this is the first study to examine the abuse and neglect of children with SLDs. We hypothesized that children with SLDs have more exposure to neglect and abuse than children with typical development. In addition, we tested whether the neglect and abuse of children with SDLs was linked to the presence of ADHD as a comorbidity. The study revealed significant sociodemographic differences and a higher vulnerability to abuse among children with SLDs compared to a control

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TABLE 2 | Comparison of children with specific learning disorders (SLDs) and control groups in terms of results for abuse and neglect.

	Children with SLDs ($n=98$)	Control group ($n=98$)		
	n (%)	*n* (%)	χ^2	*p*
Physical abuse				
1. Behaviours such as hair pulling, ear pulling or biting	55 (56.7%)	16 (16.3%)	34.322	**<0.001**[a]
2. Throwing slippers or other objects	43 (44.3%)	9 (9.2%)	30.793	**<0.001**[a]
3. Behaviours such as pushing or rough handling	48 (49.5%)	14 (14.3%)	27.851	**<0.001**[a]
4. Behaviours such as tying children up to something or locking them in a dark environment	11 (11.3%)	0 (0.0%)	11.778	**<0.001**[a]
5. Behaviours such as smacking, beating or kicking	50 (51.5%)	12 (12.2%)	34.722	**<0.001**[a]
6. Striking with tools such as belt, stick or ruler	20 (20.6%)	1 (1.0%)	19.485	**<0.001**[a]
7. Burning with cigarette, iron, fire or hot water, etc.	1 (1.0%)	0 (0.0%)	—	1.000[b]
8. Willing to injure with a knife or in other ways	4 (4.1%)	0 (0.0%)	—	0.121[b]
9. Threatening to injure or kill with knife or other tools	7 (7.2%)	1 (1.0%)	—	**0.035**[b]
Emotional abuse				
1. Wishing you had not been born or threatening to leave	11 (11.3%)	0 (0.0%)	11.778	**<0.001**[a]
2. Swearing or insulting	52 (53.6%)	15 (15.3%)	31.710	**<0.001**[a]
3. Mocking, humiliation, insulting nickname	50 (51.5%)	12 (12.2%)	34.722	**<0.001**[a]
4. Thinking about not being loved enough	34 (35.1%)	13 (13.3%)	12.648	**<0.001**[a]
Neglect				
1. Not providing food requirements despite having enough money	1 (1.0%)	0 (0.0%)	—	0.497[b]
2. Not providing certain needs like clothing or books despite having enough money	1 (1.0%)	0 (0.0%)	—	0.497[b]
3. Not taking the child to see a doctor or not giving medication	0 (0.0%)	0 (0.0%)	—	—
4. Child thinking about not receiving enough care	2 (2.1%)	3 (3.1%)	—	1.000[b]
Witnessing family violence				
1. Witnessing two adults having loud arguments	46 (47.4%)	17 (17.3%)	20.163	**<0.001**[a]
2. Seeing two adults having fistfights or other fights	12 (12.4%)	0 (0.0%)	12.919	**<0.001**[a]

Note: Significant *p*-values are presented in bold ($p<0.05$).
[a]Pearson chi-square test.
[b]Fisher exact test.

group. Furthermore, children with SLDs more often came from families with lower parental education levels and were more likely to experience physical and emotional abuse, particularly from peers and family members. The presence of extended family was more common in the SLD group, and over half of these children also had ADHD.

In this study, based on sociodemographic data, we found that the children with SLDs who participated in this study were first diagnosed on average at the age of 8. This was an expected finding, especially for Türkiye, because the criteria considered in the diagnosis of SLDs are mostly related to academic skills such as accurate reading, reading comprehension and spelling, mathematical reasoning and arithmetic, which are skills that are mostly developed during the years of formal schooling. Although being unable to recognize and write letters, having difficulties writing one's own name and difficulties in spontaneous spelling are considered as signs of SLDs during preschool education (APA 2013), in Türkiye, reading and writing are not taught as a part of preschool education process (MoNE 2013). In addition, most of the participating children with SLDs also had ADHD, which is one of the most frequently seen comorbidities (APA 2013; Einav and Margalit 2022). As in many studies on the peer bullying of children with developmental disorders (Maiano et al. 2016; Malecki et al. 2020; Martinez-Cao et al. 2021; Park et al. 2020; Rose, Swearer, and Espelage 2012), it was found in the present study that children with SLDs were exposed to physical abuse more often than the children of the control group and the abusers were mostly their friends.

Children with SLDs were found to be exposed to physical abuse more than the control group for all nine considered items. For seven items, the difference between the groups was significant, but for two items (burning with cigarettes, iron, fire, hot water, etc. and desire to injure with a knife or in other ways), it was not. Looking more closely at the items measuring physical abuse, these less frequent and statistically insignificant abusive behaviours may be explained by the victims' and abusers' ages and the characteristics of the environment in which they come together. In support of our findings, Rose et al. (2015) conducted a study to compare the victimization

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TABLE 3 | Comparison of children with specific learning disorders (SLDs) with and without attention-deficit/hyperactivity disorder (ADHD) as a comorbidity.

	Without ADHD *n* (%)	With ADHD *n* (%)	χ^2	*p*
Physical abuse				
1. Behaviours such as hair pulling, ear pulling or biting	20 (52.6%)	35 (59.3%)	0.421	0.516[a]
2. Throwing slippers or other objects	18 (47.4%)	25 (42.4%)	0.234	0.629[a]
3. Behaviours such as pushing or rough handling	18 (47.4%)	30 (50.8%)	0.112	0.738[a]
4. Behaviours such as tying children up to something or locking them in a dark environment	2 (5.3%)	9 (15.3%)	—	0.192[b]
5. Behaviours such as smacking, beating or kicking	20 (52.6%)	30 (50.8%)	0.029	0.864[a]
6. Striking with tools such as belt, stick or ruler	9 (23.7%)	11 (18.6%)	0.359	0.549[a]
7. Burning with cigarette, iron, fire or hot water, etc.	0 (0.0%)	1 (1.7%)	—	1.000[b]
8. Willing to injure with a knife or in other ways	1 (2.6%)	3 (5.1%)	—	1.000[b]
9. Threatening to injure or kill with knife or other tools	2 (5.3%)	5 (8.5%)	—	0.701[b]
Emotional abuse				
1. Wishing you had not been born or threatening to leave	6 (15.8%)	5 (8.5%)	—	0.331[b]
2. Swearing or insulting	21 (55.3%)	31 (52.5%)	0.069	0.793[a]
3. Mocking, humiliation, insulting nickname	18 (47.4%)	32 (54.2%)	0.437	0.509[a]
4. Thinking about not being loved enough	17 (44.7%)	17 (28.8%)	2.574	0.109[a]
Neglect				
1. Not providing food requirements despite having enough money	1 (2.6%)	0 (0.0%)	—	0.392[b]
2. Not providing certain needs like clothing or books despite having enough money	0 (0.0%)	1 (1.7%)	—	1.000[b]
3. Not taking the child to see a doctor or not giving medication	0 (0.0%)	0 (0.0%)	—	—
4. Child thinking about not receiving enough care	1 (2.6%)	1 (1.7%)	—	1.000[b]
Witnessing family violence				
1. Witnessing two adults having loud arguments	14 (36.8%)	32 (54.2%)	2.805	0.094[a]
2. Seeing two adults having fistfights or other fights	2 (5.3%)	10 (16.9%)	—	0.118[b]

[a]Pearson chi-square test was used.
[b]Fisher exact test was used.

TABLE 4 | Multiple logistic regression analysis.

Variables	β	SE	*p*	OR	95% CI for OR	
					Lower	Upper
Behaviours such as hair pulling, ear pulling or biting	1.412	0.523	0.007	4.103	1.472	11.436
Behaviours such as pushing or rough handling	1.410	0.536	0.008	4.097	1.434	11.706
Threatening to injure or kill with knife or other tools	3.052	1.337	0.022	21.164	1.541	290.610
Mocking, humiliation, insulting nickname	2.154	0.554	<0.001	8.621	2.909	25.549
Seeing two adults having fistfights or other fights	1.431	0.525	0.006	4.183	1.494	11.708

of children with and without learning disabilities. They found that in inclusive environments, children with SLDs had higher rates of direct victimization (i.e. physical and verbal abuse) by their peers in comparison to demographically matched children without disabilities.

Compared to physical abuse, studies on the emotional abuse of children with developmental disorders are more limited (Mishna 2003). Surprisingly, we could not find any previous research conducted with children with SLDs. In this study, we found that children with SLDs were emotionally abused

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more than the children of the control group. The section of the questionnaire addressing emotional abuse had four items, and we determined a significant difference between the groups for each item. In particular, none of the children in the control group reported their parents wishing they had not been born or threatening to leave, whereas 11 of the children with SLDs experienced. In addition, the number of children with SLDs who were exposed to behaviours such as swearing or insulting and mocking, humiliation and the use of insulting nicknames was approximately four times higher compared to the children in the control group. Although there is no similar previous research for a comparison of the results, Spencer et al. (2005) conducted population-based research to evaluate the relationship between disabling conditions and child abuse and neglect. They found that children with learning disabilities were at high risk of emotional abuse. In another study conducted with children who had ADHD, it was found that children with ADHD were exposed to more emotional abuse than the control group (Gokten et al. 2016).

Surprisingly, we determined no significant difference between the groups in terms of neglect. In the literature, having a disability is seen as a risk factor for neglect (Jones et al. 2012). On the other hand, research results are controversial. Research findings may differ depending on the existence of many variables that affect neglect and how neglect is defined (Leeb et al. 2012). For instance, two of the four items of the questionnaire used in the present study were related to basic care needs such as feeding and clothing, and one was related to health needs. All participants of the present study were selected during hospital visits, and it can thus be thought that their families all took responsibility for the children's healthcare. Moreover, the parents were likely to have similar economic statuses due to being able to afford the same healthcare costs. Another possible explanation may be the age of the children. Although there are studies claiming the opposite, some studies have shown that infants are more neglected than older children (Akehurst 2015).

The last two items of the Abuse Assessment Questionnaire addressed the witnessing of family violence. The rate of witnessing family violence was higher in the children with SLDs than the control group. Having a child with a developmental disorder is a stressful situation for parents (Bonifacci et al. 2016). Based on the findings of this study, our hypothesis was confirmed. Namely, children with SLDs are exposed to neglect and abuse more than children with typical development.

Finally, we tested the role of ADHD as a comorbidity and found that there was no significant difference between children with SLDs with and without ADHD as a comorbidity in terms of abuse and neglect. This finding confirms our hypothesis that being diagnosed with SLD increases the risk of abuse and neglect. Although numerous studies highlight the relationship between the diagnosis of ADHD and children's exposure to neglect and abuse (Gokten et al. 2016; Hadianfard 2014), the lack of research specifically addressing children with SLDs without ADHD may stem from the frequent comorbidity of these two conditions. This finding could be explained by a lack of parental awareness regarding the academic and social challenges faced by children with SLDs, as well as the stress this lack of understanding induces in parents.

5 | Conclusion and Implications

The result of this study, in which it has been clinically proven that children with SLDs are more likely to be abused than those without, reveals the need for more research and the development of intervention programmes.

This study has some limitations. Firstly, we did not have the results of the sexual abuse of the children with SLDs, the study is limited to a clinical assessment, and the participating children were selected from a hospital. Future research should be conducted with larger samples of the population from various environments other than hospitals, such as the home or school, and should compare exposure to sexual abuse among children diagnosed with SLDs and healthy children. Both clinical and educational interventions from early childhood period would be beneficial for children and for raising awareness in children's social circles about SLDs in light of the finding that these children are abused by individuals who are close to them and by their peers.

Author Contributions

M.E.U., Y.K. and H.Ş. designed the study and H.Ş. collected the clinical data. M.E.U. and Y.K. analysed the data, and Y.K. drafted the manuscript. M.E.U. and H.Ş. contributed to manuscript writing and English editing. All authors reviewed and approved the manuscript for submission.

Ethics Statement

Approval for the study was obtained from the Ethics Committee of Bursa Yüksek İhtisas Training and Research Hospital (Protocol Number: 2011-KAEK-25/Date: 2019/10-05).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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