

STRESS AMONG PARENTS OF CHILDREN WITH DISABILITIES

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Abstract: Parents of children with disabilities experience higher levels of stress compared to parents of children without disabilities. Parental stress is influenced by various factors, including the type and duration of the child's condition, as well as demographic and psychosocial characteristics of the parents. However, little is known about how specific parental characteristics and different types of disabilities relate to stress levels, particularly in the Slovenian context. The aim of this study was to identify the factors that are associated with parental stress among parents of children with disabilities. We analysed the effects of gender, age, and education level of parents, as well as the type of the child's disability on parental stress levels. The sample included 412 parents of preschool- and school-age children with disabilities from all regions of Slovenia, between the ages of 20 to 60 years. Invitations to participate in the study were sent to public kindergartens and primary schools. Parental stress was measured using the Parental Stress Scale (PSS). The Mann-Whitney U test and the Kruskal-Wallis H test were used to analyse associations between individual factors and stress levels, with the significance threshold set at $p < .05$. The results indicate that the gender and age of parents had no significant effect on stress levels. Stress levels were significantly higher among parents of children with intellectual disabilities, autistic disorders, or emotional and behavioural problems compared to those raising children with other types of disabilities. Contrary to our hypothesis, higher levels of parental education were associated with higher stress scores on the total PSS scale, as well as on several individual factors. These findings highlight the need for systematic support for parents of children with disabilities and underscore the importance of promoting parental mental health.

Keywords: parental stress, parents of children with disabilities, disability type, associated factors

INTRODUCTION

Johansson et al. (2016) noted that childbirth and the transition to parenthood are significant life events that many parents experience as being stressful. Parental stress refers to feelings of discomfort and strain that arise from the everyday demands of caring for a child, including concerns related to the child's development and behaviour (Fang et al., 2024). Although all parents may experience stress, it is often more pronounced when raising a child with disabilities due to the additional challenges associated with their care (Trtnik, 2007).

In Slovenia, the Placement of Children with Special Needs Act (ZUOPP, 2011) recognises nine categories of children with disabilities: blind and partially sighted children or those with visual

impairment; deaf and hard-of-hearing children; children with intellectual disabilities; children with speech and language impairment; children with physical disabilities; children with long-term illness; children with deficits in specific areas of learning; children with autism spectrum disorders; and children with emotional and behavioural disorders.

Preschool children with developmental difficulties are not formally placed into special education programmes under the ZUOPP, as placement procedures are typically carried out when children reach school age. Instead, within the early intervention framework defined by the Act on Early Intervention for Children with Special Needs (ZOPOP, 2019), they are identified as children with developmental delays, disorders, barriers or disabilities in physical, cognitive, perceptual,

socio-emotional, or communication domains, as well as children with long-term illnesses. Formal categorisation under ZUOPP is usually determined at school entry, when placement decisions are updated. Until that time, children with intellectual disabilities are often described as having a global developmental delay.

In the 2023/2024 school year, 412 preschool children with special needs were enrolled in adapted preschool programmes (MVI, 2024), while 19,418 school-age children with disabilities were registered in Slovenia (SiStat, n.d.). Preschool children with disabilities may attend either an adapted preschool programme offered in special class units, or a programme with an adapted curriculum and additional professional support. School-age children with disabilities are enrolled in one of several education programmes depending on their abilities and needs: an education programme with an adapted curriculum and additional professional support; an adapted education programme with an equivalent educational standard; an adapted programme with a lower educational standard; a special education programme; or training programmes (ZUOPP, 2011).

Cheng and Lai (2023) noted that the wellbeing of families is closely linked to the physical, psychological, and social characteristics of the child. Family functioning, stress-coping strategies among parents, and the availability of social and professional support also play an important role. Although the birth of a child is commonly associated with positive emotions, parents of children with disabilities may face additional challenges arising from the child's characteristics and needs. A child's behaviour and the ongoing demands related to their care are frequently cited as key sources of stress. Prolonged exposure to stress has been associated with adverse outcomes for parents' mental and physical health, leading many parents to adopt various coping strategies, such as seeking professional support, sharing experiences with other parents, or focusing on the positive aspects of everyday life. Arif et al. (2021) and Bazzano et al. (2015) reported that parents of children with intellectual disabilities, autism spectrum disorders, and other developmental conditions (e.g., cerebral

palsy, epilepsy) often experience elevated stress levels, which are linked to reduced quality of life, challenges in family functioning, and negative psychological outcomes for parents.

Arif et al. (2021) found that parents are more likely to use coping strategies such as cognitive restructuring, problem solving, and seeking social contact. Their results also show that more than 20% of the parents of children with disabilities included in their study reported high levels of stress. Stress was more pronounced in families who perceived their child's difficulties as highly demanding or those who experienced feelings of self-blame, compared to families who viewed the child's characteristics as a challenge to be managed. Economic, social, and emotional support were identified as important resources in managing parental stress. According to Arif et al. (2021) and Kurowska et al. (2020), the majority of parents adapt relatively well to their child's needs, while a smaller proportion rely on less effective coping strategies.

Previous studies have also indicated that parents of children with disabilities report higher stress levels compared to parents of children without disabilities (Gupta, 2007; Sowmya & Lakshmi, 2019). Stress levels also vary according to the type and degree of the child's disability (Emam et al., 2024; Gupta, 2007). Parents of children with intellectual disabilities, autism spectrum disorders, and behavioural problems tend to report particularly high levels of stress (Firth & Dryer, 2013; Labastida, 2018; Peer & Hillman, 2012). Miroslavljević et al. (2023) emphasised that children's emotional and behavioural disorders affect overall family functioning and resilience, highlighting the need for accessible professional support services for families.

Baker et al. (2003) emphasised that children's behavioural characteristics are closely associated with parents' stress levels, noting that stress may vary across different developmental stages. Huang et al. (2013) examined paternal stress among fathers of children with and without developmental disabilities and found that fathers of children with developmental disabilities reported significantly higher stress levels. Similarly, Osmančević Kat-

kič et al. (2017) reported that mothers of children with developmental disabilities experienced higher stress levels compared to mothers of typically developing children.

Research also suggests that stress levels differ according to whether a child's condition is permanent, as in the case of developmental or intellectual disabilities. In such circumstances, parents may experience symptoms consistent with chronic stress (Davenport & Zolnikov, 2021). The distribution of family roles is another factor associated with parental stress. Despite broader socio-economic changes, childcare and household responsibilities often remain primarily the mother's responsibility. In families of children with disabilities, these demands can be greater, underscoring the importance of balanced role-sharing. Support in organising family roles has therefore been identified as a valuable resource in reducing stress (Parchimiouk, 2021).

Parental characteristics are also linked to stress levels. Evidence on the association between parental age and stress in families of children with disabilities remains limited. Algarvio et al. (2018) observed that older parents may experience reduced feelings of control, while studies of parents of typically developing children indicate that younger parents report higher stress levels (Oyarzún-Farías, 2021). Stress levels appear to decrease during mid-adulthood and rise again towards the age of 40 years. Furthermore, studies suggest that parents with lower levels of education report higher stress compared to parents with higher educational attainment (Algarvio et al., 2018).

However, despite extensive research on parental stress, little is known about how specific parental characteristics (such as age, gender, and education) and different types of disabilities are associated with stress levels. In particular, no study has systematically examined these associations within the Slovenian context. To address this gap, the present study examined the factors associated with parental stress among parents of children with disabilities who live in Slovenia. Specifically, we investigated how stress levels vary according to parents' gender, age, and education level, as well as the type of the child's disability.

Based on previous research and practical experience, we formulated the following hypotheses:

H1: Mothers experience higher levels of stress compared to fathers.

H2: Parents of children with intellectual disabilities, autism spectrum disorders, or emotional and behavioural disorders experience the highest levels of stress.

H3: Younger parents report higher stress levels than older parents.

H4: Parents with lower educational attainment experience higher stress levels than those with higher levels of educational attainment.

SAMPLE

The study included 412 parents of children with disabilities enrolled in preschool or school education programmes. The sample included 81 fathers and 331 mothers. The link to the online questionnaire was distributed to public kindergartens and primary schools across Slovenia, using publicly available contact information (774 institutions in total). Most respondents were between the ages of 41 and 50 years (48.3%), followed by those aged 31 to 40 years (38.8%). A smaller proportion of respondents were between the ages of 20 and 30 years (2.9%) or 51 and 60 years (10%). Regarding marital status, 54.1% of the respondents were married, 32% were in a consensual union, 4.6% were single, 7.3% were divorced, 0.3% were widowed (3 parents), and 1.2% did not wish to specify their status. In terms of education, most parents had completed secondary school (29.3%), followed by those with a university degree (23.3%), and those with a vocational qualification (19.7%). In addition, 2.7% had completed primary school, and 3.4% held a master's or doctoral degree. The children of the participating parents were identified as having various disabilities: intellectual disabilities or overall developmental delay (40.1%), physical disabilities (16.3%), autism spectrum disorder (16.2%), long-term illness (8.2%), deficits in specific areas of learning (37.6%), blindness or visual impairment (7.6%), deafness or hearing impairment (6.7%), and emotional and behavioural disorders (27.1%). The

total percentage exceeds 100%, as many children had multiple disabilities. Participation in the study was voluntary and anonymous, and the sample cannot be considered representative of all parents of children with disabilities in Slovenia.

MEASURES

Data were collected using a questionnaire that included the Parental Stress Scale (PSS), which assesses stress experienced by parents. Permission to use the scale was obtained from the authors (Berry & Jones, 1995).

The Parental Stress Scale (PSS) consists of 18 items rated on a five-point Likert scale (where 1 indicates 'strongly disagree' and 5 indicates 'strongly agree'). Berry & Jones (1995) reported acceptable internal consistency ($\alpha = .83$). Subsequent studies have demonstrated that the scale has good psychometric properties, including evidence of construct validity and stable factor structures across different cultural contexts (e.g., Algarvio et al., 2018; Oronoz et al., 2007; Cheung, 2000).

For the purpose of the present study, the scale was translated into Slovenian by the first author. Conceptual equivalence was ensured through expert review, and clarity of the items was confirmed in a pilot test with parents.

An exploratory factor analysis (EFA) was conducted on the Slovenian dataset. The analysis yielded a four-factor solution, which differed from the original structure reported by Berry and Jones (1995) and should therefore be interpreted as an exploratory, yet context-specific finding. Nevertheless, the identified factors were conceptually coherent and demonstrated acceptable psychometric properties. Based on item content, the four factors were named as follows - Parental Satisfaction and Optimism, Burdens and Adjustments to the Parental Role, Ambivalence of Parenthood, and Parental Worry and Exhaustion. Subscale scores were computed for each factor and used in subsequent analyses.

In addition to the subscales, the total stress score was calculated as a sum of all 18 items. The use of a total score is common in studies employing the PSS and enables the examination of

overall parental stress. Internal consistency of the total scale based on the present sample was high (Cronbach's $\alpha = .88$).

Sociodemographic information about parents and data related to the child were also collected.

DATA COLLECTION

The questionnaire was distributed by e-mail to public kindergartens and primary schools in Slovenia (318 kindergartens and 456 schools), with a request to forward the invitation to parents. Parents completed the questionnaire via the Enka online survey platform. In total, 412 parents responded, and the survey remained open for approximately two weeks.

Participation was voluntary, and the only inclusion criterion was being a parent of a child with disabilities. Before completing the questionnaire, parents were informed about the purpose of the study, the voluntary and anonymous nature of participation, and that the data would be used exclusively for research purposes. The data were processed using IBM SPSS Statistics. The study was approved by the Ethics Committee of the Faculty of Education, University of Ljubljana (No. 23/2025), and all participants provided informed consent prior to participation.

DATA ANALYSIS

Following the recommendations of Berry and Jones (1995) and previous studies that have used the Parental Stress Scale (e.g., Algarvio et al., 2018; Hukkelberg & Nærde, 2022), an exploratory factor analysis (EFA) was conducted, yielding a four-factor solution. Subscale scores were calculated for each factor, and a total stress score was computed by calculating the sum of all 18 items.

Since the distributions of the PSS total score and the subscale scores deviated from normality (as assessed by the Shapiro-Wilk test and visual inspection of histograms), non-parametric tests were applied. Group differences across more than two categories were examined using the Kruskal-Wallis H test, and pairwise differences were assessed using the Mann-Whitney U test. These

procedures are appropriate for ordinal Likert-type data and for continuous variables that violate assumptions of normality and homogeneity of variance.

RESULTS

An exploratory factor analysis of the Parental Stress Scale (PSS) yielded a clear four-factor solution. Table 1 presents the items assigned to

each factor, labelled on the basis of their conceptual content. The four factors were interpreted as follows - *Parental Satisfaction and Optimism, Burdens and Adjustments to the Parental Role, Ambivalence of Parenthood, and Parental Worry and Exhaustion*. The factor loadings supported a coherent and interpretable structure, and subscale scores were computed accordingly. A total stress score was also calculated as the sum of all 18 items, with possible scores ranging from 18 to 90.

Table 1. Items of the Parental Stress Scale grouped by extracted factors

Item no.	Item content	Factor
6.	I enjoy spending time with my child(ren).	Parental Satisfaction and Optimism (F1)
7.	My child(ren) is an important source of affection for me.	Parental Satisfaction and Optimism (F1)
5.	I feel close to my child(ren).	Parental Satisfaction and Optimism (F1)
2.	There is little or nothing I wouldn't do for my child(ren) if it was necessary.	Parental Satisfaction and Optimism (F1)
1.	I am happy in my role as a parent.	Parental Satisfaction and Optimism (F1)
8.	Having child(ren) gives me a more certain and optimistic view for the future.	Parental Satisfaction and Optimism (F1)
10.	Having child(ren) leaves little time and flexibility in my life	Burdens and Adjustments to the Parental Role (F2)
12.	It is difficult to balance different responsibilities because of my child(ren).	Burdens and Adjustments to the Parental Role (F2)
16.	Having child(ren) has meant having too few choices and too little control over my life.	Burdens and Adjustments to the Parental Role (F2)
11.	Having child(ren) has been a financial burden.	Burdens and Adjustments to the Parental Role (F2)
14.	If I had it to do over again, I might decide not to have child(ren).	Ambivalence of Parenthood (F3)
15.	I feel overwhelmed by the responsibility of being a parent.	Ambivalence of Parenthood (F3)
17.	I am satisfied as a parent.	Ambivalence of Parenthood (F3)
18.	I find my child(ren) enjoyable.	Ambivalence of Parenthood (F3)
13.	The behaviour of my child(ren) is often embarrassing or stressful to me.	Ambivalence of Parenthood (F3)
9.	The major source of stress in my life is my child(ren).	Ambivalence of Parenthood (F3)
4.	I sometimes worry whether I am doing enough for my child(ren).	Parental Worry and Exhaustion (F4)
3.	Caring for my child(ren) sometimes takes more time and energy than I have to give.	Parental Worry and Exhaustion (F4)

Parental stress levels were compared across gender, age, level of education, and type of child's disability using both subscale scores and the total

PSS score. Possible total stress scores range from 18 to 90, with higher values indicating higher levels of parental stress.

Table 2. Descriptive statistics of the Parental Stress Scale total score and factor scores ($N = 412$)

Scale/Factor	Gender	N	Me	M	SD
Total stress score	Male	81	2.22	2.28	0.69
	Female	331	2.22	2.25	0.57
Factor 1	Male	81	1.67	1.83	0.70
	Female	331	1.50	1.69	0.64
Factor 2	Male	81	3.00	2.81	1.09
	Female	331	2.75	2.75	0.96
Factor 3	Male	81	1.83	1.93	0.83
	Female	331	1.83	1.96	0.69
Factor 4	Male	81	4.00	3.61	1.09
	Female	331	4.00	3.81	0.95

Note: *M*, mean; *Me*, median; *PSS*, Parental Stress Scale; *SD*, standard deviation

Table 2 presents the descriptive statistics for the PSS total stress score and individual factor scores based on gender. Medians and means were comparable between mothers and fathers across all factors, as well as for the total score.

Table 4. Types of disabilities

Disabilities	N (%)	Me	M	SD
Intellectual disabilities (overall developmental delay)	161 (39.1%)	2.33	2.40	0.60
Physical disabilities	67 (16.3%)	2.33	2.35	0.57
Long-term illness	75 (18.2%)	2.22	2.31	0.54
Autism spectrum disorders	108 (26.2%)	2.44	2.48	0.61
Deficits in specific areas of learning	155 (37.3%)	2.17	2.18	0.52
Visual impairment or blindness	27 (6.6%)	2.50	2.48	0.89
Hearing impairment or deafness	11 (2.7%)	1.89	2.05	0.69
Emotional and behavioural disorders	95 (23.1%)	2.44	2.40	0.64
Speech and language impairment	151 (36.7%)	2.28	2.29	0.59

Note: *M*, mean; *Me*, median; *PSS*, Parental Stress Scale; *SD*, standard deviation.

Table 4 presents the distribution of disability types among the respondents' children. The most common categories were intellectual disabilities (39.1%), deficits in specific areas of learning (37.3%), and speech and language impairment (36.7%). Since many children were diagnosed with more than one disability, the total percentage exceeds 100%.

Table 3. Group differences in stress scores by gender

Scale/factor	U	p
Total stress score	1334.00	.947
Factor 1	11808.50	.095
Factor 2	12991.00	.665
Factor 3	12681.00	.449
Factor 4	12118.00	.172

Note: *U*, Mann-Whitney U statistic; $p < .05$ indicates statistical significance.

As shown in Table 3, the Mann-Whitney U test indicated no significant gender differences in the PSS total stress score ($U = 1334.00$, $p = .947$). No significant differences emerged in relation to any of the four factors (Factor 1: $U = 11808.50$, $p = .095$; Factor 2: $U = 12991.00$, $p = .665$; Factor 3: $U = 12681.00$, $p = .449$; Factor 4: $U = 12118.00$, $p = .172$). Therefore, hypothesis H1 was not supported.

In Slovenia, school-age children in this category are formally diagnosed with an intellectual disability, while preschool children are commonly classified as having an overall developmental delay, which corresponds to the same group.

Table 5. Statistical differences in parental stress across disability types

Disabilities	U	p
Intellectual disabilities (overall developmental delay)	15558.50	< .001
Physical disabilities	996.50	.074
Long-term illness	11645.50	.287
Autism spectrum disorders	11982.50	< .001
Deficits in specific areas of learning	18267.00	.158
Visual impairment or blindness	4551.50	.280
Hearing impairment or deafness	1660.50	.162
Emotional and behavioural disorders	12255.00	.006
Speech and language impairment	18506.50	.303

Note: U, Mann-Whitney U statistic; $p < .05$ indicates statistical significance.

Hypothesis 2 was examined using the Mann-Whitney U test. As shown in Table 5, statistically significant differences in parental stress were found for parents of children with intellectual disabilities ($U = 15558.50$, $p < .001$), autism spectrum disorders ($U = 11982.50$, $p < .001$), and emotional and behavioural disorders ($U = 12255.00$, $p = .006$). No significant differences were observed for the remaining disability categories. These results indicate that parents of children in these three disability groups reported higher levels of stress compared to parents whose children were not identified within these categories.

Table 6. Descriptive statistics for PSS total stress scores across age groups

Age group	N	Me	M	SD
20-30 years	12	2.22	2.26	0.47
31-40 years	160	2.17	2.20	0.50
41-50 years	199	2.22	2.29	0.66
51-60 years	41	2.33	2.31	0.61

Note: M, mean; Me, median; PSS, Parental Stress Scale; SD, standard deviation.

Descriptive statistics for the PSS total stress score across age groups are presented in Table 6. Median and mean scores were comparable across all four age groups, with no pronounced differences observed at the descriptive level. Detailed descriptive statistics for the four PSS factors by age group are provided in Appendix A.

Table 7. Statistical differences in parental stress across age groups

Scale/factor	H	p
Total stress score	1.28	.733
Factor 1	12.90	.005
Factor 2	3.98	.264
Factor 3	0.31	.958
Factor 4	6.97	.073

Note: H, Kruskal-Wallis H statistic; $p < .05$ indicates statistical significance.

Hypothesis 3 was tested using the Kruskal-Wallis H test. As shown in Table 7, no statistically significant differences were found in the PSS total stress score across age groups ($H = 1.28$, $p = .733$). A statistically significant difference emerged only for Factor 1 (Parental Satisfaction and Optimism; $H = 12.90$, $p = .005$), where older parents reported higher scores than younger parents. No significant age-related differences were observed for Factors 2, 3, or 4. Based on these results, Hypothesis 3 was not supported.

Table 8. Descriptive statistics for PSS total stress scores across educational levels

Highest level of formal education	N	Me	M	SD
Primary school or less	11	2.00	2.07	0.68
Vocational upper-secondary school (2- or 3-year programme)	81	1.94	2.12	0.60
General or technical upper-secondary school (4- or 5-year programme)	122	2.19	2.25	0.60
Post-secondary vocational college	26	2.03	2.16	0.61
First-cycle higher education (professional bachelor's degree)	62	2.17	2.21	0.53
Second-cycle university degree (Master's degree)	96	2.39	2.37	0.56
Scientific master's degree or doctoral degree (PhD)	14	2.77	2.79	0.50

Note: *M*, mean; *Me*, median; *PSS*, Parental Stress Scale; *SD*, standard deviation.

Descriptive statistics for the PSS total stress score across educational levels are presented in Table 8. Median and mean scores were generally comparable across groups, with slightly higher values observed among parents with higher levels of education. Detailed descriptive statistics for the four PSS factors based on educational level are provided in Appendix B.

Table 9. Statistical differences in parental stress across education levels

Scale	H	p
Total stress score	23.37	.001
Factor 1	13.85	.031
Factor 2	35.52	< .001
Factor 3	6.41	.379
Factor 4	15.25	.018

Note: *H*, Kruskal-Wallis H statistic; $p < .05$ indicates statistical significance.

Hypothesis 4 was tested using the Kruskal-Wallis H test. As shown in Table 9, parental education was significantly associated with the PSS total stress score ($H = 23.37$, $p = .001$). Statistically significant differences across educational levels were also found for Factor 1 (Parental Satisfaction and Optimism; $H = 13.85$, $p = .031$), Factor 2 (Burdens and Adjustments to the Parental Role; $H = 35.52$, $p < .001$), and Factor 4 (Parental Worry and Exhaustion; $H = 15.25$, $p = .018$). No significant differences were observed for Factor 3 (Ambivalence of Parenthood; $H = 6.41$, $p = .379$).

Based on these results, Hypothesis 4 was not supported.

DISCUSSION

Gender and parental stress

Although the present study did not identify statistically significant gender differences in parental stress, the descriptive patterns suggest that mothers may still assume a larger share of childcare and related responsibilities. One possible explanation is the composition of the sample, in which mothers were substantially overrepresented. Fathers who participated may be those who are more actively involved in parenting, which could contribute to smaller observed differences.

Previous research offers a mixed picture. Studies using the PSS in Spain also found no statistically significant gender differences (Oronoz et al., 2007), whereas findings from China indicate that mothers report higher stress levels than fathers (Cheung, 2000). Other research similarly shows that mothers of children with developmental disabilities tend to report higher stress compared to mothers of typically developing children (Osmančević Katkić et al., 2017). Shifts in societal norms may contribute to these differences across contexts. Over recent decades, fathers have become increasingly engaged in family life (Cabrera et al., 2000), and in Slovenia, both parents are entitled to parental leave, although social expectations still position mothers as primary caregivers (GOV.si, 2023). The findings therefore align with evidence suggesting that, despite evolving parental roles, traditional caregiving patterns remain influential (Hukkelberg & Nærde, 2022). Supportive partnerships and marital satisfaction

have been shown to buffer parental stress in families of children with disabilities (Babič, 2012; Osmančević Katkić et al., 2017).

Disability type and stress

Consistent with international research (Arif et al., 2021; Firth & Dryer, 2013; Miroslavljević et al., 2023; Peer & Hillman, 2012), parents of children with intellectual disabilities, autism spectrum disorders, and emotional or behavioural disorders reported significantly higher stress levels. These disability types typically involve complex care needs, behavioural challenges, and communication difficulties, which can increase parents' psychological and physical strain. Prior research has highlighted the role of behavioural difficulties and the severity of developmental limitations as key contributors to parental stress, particularly among parents of children with intellectual disabilities (Peer & Hillman, 2012).

Similarly, unpredictable emotional and behavioural difficulties — common in children with emotional and behavioural disorders — are frequently associated with parental feelings of helplessness and reduced family resilience (Miroslavljević et al., 2023).

In contrast, parents of children with physical disabilities, long-term illnesses, hearing or visual impairments, or learning and speech-language difficulties reported lower stress levels. These conditions may be perceived as more manageable, particularly when accessible assistive technologies, therapeutic interventions, and environmental accommodations are available (WHO, 2022). Many children with communication and learning difficulties can also make substantial progress with appropriate support (Krenker, 2016), which may reduce parents' perceptions of burden.

Parental age and stress

Research examining age-related differences in parental stress among families of children with disabilities remains limited. Studies involving parents of typically developing children suggest that younger parents tend to experience higher stress, which decreases during adulthood and in-

crease again later (Oyarzún-Farías et al., 2021). These patterns have been attributed to financial insecurity and lower parenting self-efficacy among younger adults.

In the present study, however, older parents reported higher stress levels for the factor related to parental satisfaction and optimism, while no significant differences emerged in relation to total stress. Given the uneven distribution of parents across age groups, these differences should be interpreted cautiously. One possible interpretation is that younger parents may be more accustomed to seeking information and support through digital resources, which may enhance coping. At the same time, the observed differences were small and should be interpreted cautiously, as the stress experienced by parents is likely shaped by multiple overlapping factors, including disability type, behavioural difficulties, and contextual demands. Prior work also notes that older parents may experience reduced feelings of control when managing their child's needs (Algarvio et al., 2018), which may contribute to higher stress in some domains.

Parental education and stress

Contrary to our hypothesis, higher levels of parental education were associated with higher stress scores across the total PSS scale, as well as in relation to several factors. This finding diverges from previous research suggesting that lower educational attainment is linked to higher parental stress due to socioeconomic disadvantages and limited access to support (Algarvio et al., 2018).

Several explanations may account for the opposite trend observed in the present study. Higher educational attainment is often associated with occupations involving greater responsibility, cognitive workload, and time pressure. Contemporary labour market demands, increasing digitalisation, and expectations of constant availability may exacerbate work-life balance challenges among highly educated parents. These pressures may limit time and energy available for managing complex caregiving responsibilities. At the same time, the growing accessibility of higher education and shifting work patterns may contribute to

new stressors that were not as prominent in earlier research. Highly educated parents may also have higher expectations regarding their own parenting performance, which can increase perceived stress. Further studies are needed to clarify these associations, as well as to examine how work characteristics, socioeconomic status, and family support interact with parental education to influence stress.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the sample was obtained through voluntary participation, which may have introduced a self-selection bias. The sample composition was strongly imbalanced in favour of mothers, thus limiting the strength of conclusions about gender differences in parental stress. Second, the study relied exclusively on self-report measures, which are subject to subjective interpretation and social desirability bias. Third, the cross-sectional design precludes conclusions about causality or changes in parental stress over time.

The exploratory factor analysis of the Slovenian version of the Parental Stress Scale yielded a coherent four-factor structure; however, this structure should be interpreted as exploratory and context-specific, and future studies should examine its stability using confirmatory factor analysis on independent samples. In addition, the heterogeneity of disability types in the sample may have contributed to variability in stress levels within subgroups. Future studies would benefit from larger and more gender-balanced samples, particularly with a higher proportion of fathers, to provide clearer insights into potential gender differences. Comparative studies involving parents of typically developing children could also clarify the extent to which elevated stress levels are specifically related to disability-related demands. Further research could examine whether parental stress varies according to the child's educational level (preschool, primary, or secondary school), the child's age, or the length of time the parent has been caring for a child with disabilities. These additional perspectives would strengthen our un-

derstanding of parental stress in the Slovenian context.

CONCLUSION

The findings of the present study show that parents of children with disabilities experience substantial levels of stress in their parenting role and express a clear need for psychological and practical support. Particular attention may be required for parents of children with intellectual disabilities, autism spectrum disorders, and emotional or behavioural disorders, as these groups were associated with the highest levels of stress. As the first study in Slovenia to apply the Parental Stress Scale in this population, the research provides important initial insights into how parental characteristics and disability-related factors are associated with stress.

Despite its limitations, the study contributes valuable information for the Slovenian context and highlights the importance of strengthening support systems for families of children with disabilities. The findings may assist professionals, non-governmental organisations, parent associations, and self-help groups in tailoring interventions to better meet the needs of parents and enhance family wellbeing. Further research with broader and more diverse samples will be important for deepening our understanding of the challenges faced by these families and for informing more effective support and policy measures.

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Appendix A

This appendix contains additional descriptive statistics for all PSS subscales across age groups.

Table A1. Descriptive statistics for PSS Factor 1 across age groups

Age group	N	Me	M	SD
20-30 years	12	1.42	1.51	0.55
31-40 years	160	1.50	1.59	0.57
41-50 years	199	1.67	1.81	0.71
51-60 years	41	2.00	1.83	0.58

Note: *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Table A2. Descriptive statistics for PSS Factor 2 across age groups

Age group	N	Me	M	SD
20-30 years	12	3.38	3.19	0.75
31-40 years	160	2.75	2.69	0.98
41-50 years	199	2.75	2.80	1.01
51-60 years	41	3.00	2.77	0.93

Note. *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Table A3. Descriptive statistics for PSS Factor 3 across age groups

Age group	N	Me	M	SD
20-30 years	12	1.67	1.85	0.61
31-40 years	160	1.83	1.91	0.61
41-50 years	199	1.83	1.99	0.80
51-60 years	41	1.83	1.97	0.77

Note. *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Table A4. Descriptive statistics for PSS Factor 4 across age groups

Age group	N	Me	M	SD
20-30 years	12	4.25	3.92	1.00
31-40 years	160	4.00	3.95	0.84
41-50 years	199	4.00	3.63	1.07
51-60 years	41	4.00	3.78	1.01

Note: *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Appendix B

This appendix contains additional descriptive statistics for all PSS subscales across educational levels.

Table B1. Descriptive statistics for PSS Factor 1 across educational levels

Highest level of formal education	N	Me	M	SD
Primary school or less	11	1.83	1.73	0.62
Vocational upper-secondary school (2- or 3-year programme)	81	1.33	1.58	0.57
General or technical upper-secondary school (4- or 5-year programme)	122	1.50	1.74	0.77
Post-secondary vocational college	26	1.58	1.66	0.57
First-cycle higher education (professional bachelor's degree)	62	1.67	1.70	0.66
Second-cycle university degree (Master's degree)	96	1.83	1.80	0.55
Scientific master's degree or doctoral degree (PhD)	14	2.00	2.02	0.53

Note: *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Table B2. Descriptive statistics for PSS Factor 2 across educational levels

Highest level of formal education	N	Me	M	SD
Primary school or less	11	2.00	2.32	0.89
Vocational upper-secondary school (2- or 3-year programme)	81	2.25	2.47	0.98
General or technical upper-secondary school (4- or 5-year programme)	122	2.75	2.69	0.90
Post-secondary vocational college	26	2.25	2.53	1.03
First-cycle higher education (professional bachelor's degree)	62	2.63	2.75	0.97
Second-cycle university degree (Master's degree)	96	3.00	3.09	0.97
Scientific master's degree or doctoral degree (PhD)	14	3.88	3.73	0.72

Note: *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Table B3. Descriptive statistics for PSS Factor 3 across educational levels

Highest level of formal education	N	Me	M	SD
Primary school or less	11	1.67	1.78	0.85
Vocational upper-secondary school (2- or 3-year programme)	81	1.83	1.94	0.73
General or technical upper-secondary school (4- or 5-year programme)	122	1.83	1.94	0.72
Post-secondary vocational college	26	1.83	1.89	0.75
First-cycle higher education (professional bachelor's degree)	62	1.83	1.88	0.69
Second-cycle university degree (Master's degree)	96	2.00	2.01	0.69
Scientific master's degree or doctoral degree (PhD)	14	2.25	2.35	0.83

Note: *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.

Table B4. Descriptive statistics for PSS Factor 4 across educational levels

Highest level of formal education	N	Me	M	SD
Primary school or less	11	4.00	3.45	1.04
Vocational upper-secondary school (2- or 3-year programme)	81	4.00	3.60	1.01
General or technical upper-secondary school (4- or 5-year programme)	122	4.00	3.89	0.91
Post-secondary vocational college	26	4.00	3.73	1.12
First-cycle higher education (professional bachelor's degree)	62	4.00	3.66	1.02
Second-cycle university degree (Master's degree)	96	4.00	3.79	0.96
Scientific master's degree or doctoral degree (PhD)	14	4.75	4.46	0.82

Note: *M*, mean; *Me*, median; PSS, Parental Stress Scale; *SD*, standard deviation.