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Research Article

# Stress and coping strategies among Balkan mothers of children with developmental disorders

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ABSTRACT

This study explored stress in Balkan parents of children with developmental disorders (DD), taking into account the type of child's DD, sociodemographic factors, and coping strategies. Sample comprised 139 mothers from Serbia (42%), Montenegro (27%), Bosnia and Herzegovina (14%), Croatia (16%), and Slovenia (2%), whose children were diagnosed with specific developmental disorders of speech and language (37%), autism spectrum disorders (39%) and mixed specific developmental disorders (24%). Mothers completed the Parenting Stress Index-SF and Brief COPE, and provided information on sociodemographic characteristics. The one-way ANOVA revealed that mothers of children with ASD reported the highest stress intensity. Linear regression suggests that having a child with autism spectrum disorder, lower education, and the use of Self-blame contribute to the prediction of stress. The results of several mediation analyses indicate that Religion and Behavioral disengagement mediate the relationship between parental stress and

the child's age: parents of older children with DD show a greater tendency to use these coping strategies, which consequently leads to higher stress levels.

*Keywords:* parenting stress, developmental disorders, coping strategies, autism spectrum disorder, specific developmental disorders of speech and language

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## Introduction

The scientific community increasingly recognizes the importance of observing developmental disorders through a system, family perspective. Receiving a diagnosis of a developmental disorder in a child represents an extraordinary crisis to which family members need to adapt. Due to their nature, crises of this type tend to evolve into chronic stress that family members must learn to live with (Kosić et al., 2021; Weiss & Lunsky, 2011; Weiss et al., 2014).

Children with developmental disorders (hereafter referred to as DD) and their parents undergo numerous evaluations and medical examinations before receiving a diagnosis (Pistoljevic et al., 2021), which contributes to prolonged exposure to increased stress intensity (Negri & Castorina, 2014). Furthermore, learning about a child's diagnosis often elicits mixed emotions, a heightened sense of burden, and a feeling of unresolved grief (Negri & Castorina, 2014; Stoll-Egger, 2019; Stuart & McGrew, 2009). While all parents experience stress when caring for a child, it can be particularly pronounced in parents of children with DD. Numerous studies have shown that stress is the most common consequence of raising a child with a DD (Bhushan Gupta, 2007; Lopez et al., 2008). The typical parenting styles, skills, and approaches recommended for children with typical development often prove ineffective, making raising a child with a DD a significant challenge for parents (Preece & Almond, 2008). Additionally, many studies indicate that the quality of the partner relationship (Gau et al., 2012; Harper et al., 2013; May et al., 2015; Sim et al., 2017), as well as general family functioning (Gau et al., 2012), may be impaired.

Parenting stress, as delineated by Abidin and colleagues (2022), encompasses stressors inherent in fulfilling the parental role, intertwining psychological phenomena with physiological responses. It emerges from a blend of internal and external factors, shaping interactions within the parental role and with children. This unique stress type arises when perceived parenting demands exceed available resources, comprising both child-related and parent-related domains (Abidin, 1995). Notably, parental stress strongly correlates with parenting practices, distinguishing it from other forms of stress (Abidin, 1992).

Some studies indicate that both mothers and fathers report elevated levels of parental stress associated with caring for a child with DD (Shtayermman, 2013), while others suggest that fathers report less stress than mothers (Herring et al., 2006; Tehee et al., 2008). Parental stress tends to be higher among older parents (Duarte et al., 2005; Östberg & Hagekull, 2000), those with lower levels of education (Smith et al., 2001), unemployed individuals (Sinha et al., 2016), and divorced or widowed parents (Norizan & Shamsuddin, 2010), as well as those with a larger number of children (Duarte et al., 2005; Östberg & Hagekull, 2000).

Despite growing international interest in DD, there remains a dearth of information regarding the situation of children with DD in developing countries. Specifically, in most Balkan countries, services for child and adolescent psychiatry are underdeveloped and lack integration with other services for children and youth, leading to insufficient intersectoral cooperation (Službeni glasnik, 2019). For instance, in Serbia and Bosnia and Herzegovina, there is no official register of persons with disabilities due to a lack of systematic collection of statistical data (UNICEF, 2017).

In Montenegro, the recent establishment of the Center for Autism suggests that concrete outcomes from its operations are anticipated in the near future (Ministry of Health - Government of Montenegro, 2018). Meanwhile, data from Croatia reveal that the predominant reasons for child hospitalization include specific mixed developmental disorders, specific developmental disorders of speech and language, and pervasive developmental disorders (Croatian Institute of Public Health, 2022). The results of a study conducted in the Balkan countries, specifically in Serbia, Montenegro, and Bosnia and Herzegovina, further support the concerns mentioned above – the study reports high percentages of children who screened positive for cognitive, language, sensory, and motor disabilities (Bornstein & Hendricks, 2013).

Global studies indicate that the intensity of parental stress can vary depending on the child's diagnosis (type of DD). Research suggests that parents of children with autism spectrum disorder (ASD) face the highest risk of experiencing elevated stress levels (Brobst et al., 2008; Giovagnoli et al., 2015;

Harper et al., 2013; Pastor-Cerezuela et al., 2016; Rao & Beidel, 2009; Smith et al., 2010). Similar results were found in research conducted in Serbia and Croatia – parents of children with DD reported medium to high-stress levels (Matišić, 2021; Milačić Vidojević, 2008). Also, parents of children with ASD reported higher levels of stress compared to parents of typically developing children (Bunijevac & Čanadanović-Marinković, 2023; Čarakovac & Milačić Vidojević, 2019a).

In addition to ASD (a group of disorders characterized by qualitative abnormalities in reciprocal social interactions, patterns of communication, and a restricted, stereotyped, repetitive repertoire of interests and activities) (ICD-10, 2011), the other two most frequent disorders of psychological development in our region (Croatian Institute of Public Health, 2022) are Specific developmental disorders of speech and language (disorders in which normal patterns of language acquisition are disturbed from the early stages of development; these conditions are not directly attributable to neurological or speech mechanism abnormalities, sensory impairments, intellectual impairments, or environmental factors) (ICD-10, 2011) and Mixed specific developmental disorders (a residual category for disorders in which there is some admixture of specific developmental disorders of speech and language, scholastic skills, and motor function, but in which none predominates sufficiently to constitute the prime diagnosis; these disorders are usually, but not always, associated with some degree of general impairment of cognitive functions) (ICD-10, 2011).

However, while research on parental stress in parents of children with ASD has indicated the particularly stressful nature of raising these children, studies comparing the stress experienced by parents of children with other DDs are lacking in the Balkans.

When considering other child factors, research has shown that the intensity of parental stress is related to the child's age (Barker et al., 2011; Milačić Vidojević, 2008; Tehee et al., 2009), but not to the gender (Herring et al., 2006) of a child with DD.

Previous research indicates that the strongest predictors of parental stress are individuals' coping responses, defined as attempts to prevent or

reduce threat, harm, or loss, and to alleviate distress (Cramer, 2003). While some authors argue that so-called emotion-focused strategies, aimed at minimizing stress-induced distress (such as self-pacing, expressing negative emotions, focusing on negative thoughts, attempting to avoid stressful situations, acceptance, humor, and positive redefining), are maladaptive (Piazza et al., 2014; Sivberg, 2002; Vernhet et al., 2019; Wang et al., 2011), others contend that maladaptive strategies are actually those that are problem-focused, such as planning, active coping, and seeking instrumental support (Cooper et al., 2008). On the other hand, researchers generally concur that avoidance strategies (aimed at evading threats or related emotions, including avoidance, substance use, denial, self-blame, and emotional venting) contribute to increased stress levels, while task-oriented strategies (such as planning, acceptance, and positive reframing) are associated with resilience (Hastings et al., 2005; Whitehead et al., 2015). However, data on the relationship between so-called engagement strategies (which involve dealing with stressors or emotions and include seeking support, emotional regulation, acceptance, and cognitive restructuring) and stress intensity remain limited (Skinner et al., 2003).

Unfortunately, there is limited research on coping strategies in the Balkan countries. For example, a study from Bosnia and Herzegovina showed that parents of children with ASD use problem-focused coping strategies (Gosto, 2016). Additionally, a study conducted in Serbia and Bosnia and Herzegovina indicates that in stressful situations, parents mostly use the strategy of redefining the problem, differing from parents of children with typical development only in their more frequent use of seeking help from experts (Čarakovac & Milačić Vidojević, 2019b). Another study from North Macedonia showed that increased usage of distraction and disengagement heightened the level of parental stress, while family support acted as a buffer for managing stress in parents of children with ASD (Nolcheva & Trajkovski, 2015).

Despite the extensive literature on stress and coping strategies in other countries, no such trend has been observed in the Balkans. The Balkan countries share a culture distinct from both Western and Eastern countries. Specifically,

since the 1990s, the Western Balkan region has been marked by severe conflicts, including the war and disintegration of Yugoslavia and NATO bombing, leading to economic collapse. Additionally, the global financial crisis further slowed economic growth and exacerbated high unemployment (Dabrowski & Myachenkova, 2018). While some Western Balkan countries, like Slovenia and Croatia, are already EU members, most of them are in the early stages of the accession process, necessitating accelerated reforms and resolution of key issues in family laws and education. However, patriarchal gender norms still dominate the region, making it challenging for both men and women to depart from traditional gender roles (Pešić, 2009). Consequently, women often bear the primary responsibility for childcare.

The crises experienced in the Balkans have had significant consequences that affect children with DDs and their families. While the system of early intervention has been established in much of the world since the last century, the Balkans still face systemic deficiencies and lack general system support (Nedović et al., 2016).

For example, in Slovenia and Croatia, there have been strides in developing comprehensive healthcare systems and increasing access to early intervention services for children with DDs. However, despite this, a recent study in Croatia showed that knowledge of DDs was inconsistent and inaccurate understandings were common. Additionally, the researchers found that attitudes regarding the inclusion of learners with DDs were ambivalent, and that training in 'good practice' approaches was extremely limited (Stošić et al., 2022). Countries like Serbia, Montenegro, North Macedonia, and Bosnia and Herzegovina face challenges related to limited resources, fragmented healthcare systems, and insufficient funding for services and support programs. For example in Bosnia and Herzegovina, despite parents typically reporting developmental problems in their children around the age of 17 months, diagnoses of DDs are often delayed by an average of one and a half years, prolonging stressful circumstances for these families (Pistoljevic et al., 2021). In some cases, DDs go unnoticed or are misinterpreted by parents, preschool teachers, or professional associates (Ilić et al., 2020; Pistoljevic et al., 2021).

Furthermore, a chronic lack of standardized tests and adequate assessment instruments further complicates the diagnostic process, resulting in late identification of children with DDs (Ilić et al., 2020) and unsystematic, inappropriate intervention programs (Ibrahimagic et al., 2015). Parents of children with DDs from Serbia and Bosnia and Herzegovina express frustration with accessing professional services (Pejovic-Milovancevic et al., 2018) and receive minimal government assistance (Čolić, 2023), often relying on centralized, limited non-governmental organizations for support (Gosto, 2016). However, there are insufficient adequate and diverse community-based services for those families (Džamonja Ignjatović et al., 2017), and the parents of children with DDs bear the burden of care on their own, which creates immense pressure on these families (May & Hansen, 2016). Because of the difficulties with the availability of services and getting appointments, as well as the problems with accessing public healthcare services, parents from Serbia, Croatia, and North Macedonia report that they have to pay for private services (Međaković et al., 2024), even though they are also facing social isolation, economic crisis, and poverty (Džamonja Ignjatović et al., 2017).

The opportunities regarding policies, resources, and treatment possibilities for children with DDs vary across Balkan countries, and disparities exist due to differences in healthcare systems, funding, and infrastructure. However, while efforts have been made to improve services and support for children with DDs in these countries, there are still challenges. It seems that, despite country differences, disparities in access and service utilization speak to common regional needs.

In order to obtain significant data to improve practices in Balkan mental health clinics, deepen knowledge on this topic, and address gaps and contradictions in existing literature, we have set the following aims for this study: 1) compare the intensity of stress among Balkan parents in relation to the type of developmental disorder in their children; 2) explore the sociodemographic factors and coping strategies that contribute to parental stress among Balkan parents; 3) examine whether the relationship between

sociodemographic variables and parental stress is mediated by specific coping strategies.

Based on previous findings (Brobst et al., 2008; Harper et al., 2013; Rao & Beidel, 2009; Smith et al., 2010), we hypothesized that parents of children with ASD will report the highest stress intensity (H1). We predict that certain sociodemographic factors will contribute to parental stress, consistent with previous research. Specifically, we expect parental stress to be higher in older (Duarte et al., 2005; Östberg & Hagekull, 2000), less educated (Smith et al., 2001), and unemployed parents (Sinha et al., 2016), as well as those with a larger number of children (Duarte et al., 2005; Östberg & Hagekull, 2000) (H2a). Additionally, based on previous research (Hastings et al., 2005), we anticipate that avoidance strategies (such as substance use, denial, self-blame, and emotional venting) will predict increased stress levels (H2b). Furthermore, research indicates that parental stress is higher in those with a larger number of children (Duarte et al., 2005; Östberg & Hagekull, 2000), while research on the impact of a child's age on parental stress yields inconsistent results. While some authors suggest higher stress in parents of younger children (e.g., Barker et al., 2011), others report increasing stress with age (e.g., Milačić Vidojević, 2008; Tehee et al., 2009). Moreover, one study (Peters-Scheffer et al., 2012) found no relationship between children's age and maternal stress. Considering that certain coping strategies mediate the relationship between parental stress and factors like parental quality of life (Ni'matuzahroh et al., 2022), child's symptoms severity (Miranda et al., 2019), and child externalizing behavior (Chen et al., 2024), we hypothesize that some coping strategies may act as mediators between parental stress and sociodemographic variables (such as child's age and number of children), potentially explaining the inconsistencies in previous research findings (H3).

# Method

## Participants and procedure

Taking into account that the predominant reasons for child hospitalization in the Balkans include Specific Developmental Disorders of Speech and Language (SDDSL), Autism Spectrum Disorder (ASD), and Mixed Specific Developmental Disorders (MSDD) (cf. Bornstein & Hendricks, 2013; Croatian Institute of Public Health, 2022), and that these DDs are highly correlated with parental stress (cf. Bunijevac & Čanadanović-Marinković, 2023; Čarakovac & Milačić Vidojević, 2019a; Matišić, 2021), we wanted to focus the study specifically on parents who have children diagnosed with these three conditions.

Therefore, this research was conducted as a cross-sectional study using a convenience sample. The participants in this study were 139 mothers of children with DDs. The maternal age ranged from 24 to 54 years ($M$ = 36.44, $SD$ = 5.40). Less than 1% of mothers had completed elementary school, while 36% had a high school education. The majority of mothers held a university diploma (42%), and 20% had postgraduate education. Almost one-third of mothers in the study were unemployed (29.5%), while the rest of them were employed (70.5%). The majority of mothers in the study were married or cohabitating (93%), while 7% were divorced. More than half of the mothers (52.5%) had two children, while 29.5% had only one child, and 18% of mothers had three or more children. The mothers were from Serbia (42%), Montenegro (27%), Bosnia and Herzegovina (14%), Croatia (16%), and Slovenia (2%).

Their children were diagnosed with Specific Developmental Disorders of Speech and Language (SDDSL) (37%), Autism Spectrum Disorder (ASD) (39%), and Mixed Specific Developmental Disorders (MSDD) (24%) by a qualified child psychiatrist, within a clinical assessment, prior to this research.

The children's ages ranged from 2 to 12 years ($M$ = 5.34, $SD$ = 2.09). The majority of the children were male (77%).

Mothers were recruited within the Institute for Experimental Phonetics and Speech Pathology (IEPSP) "Đorđe Kostić" in Belgrade, Serbia, where their children received speech and language therapy. All mothers completed the questionnaire while their children were receiving therapy at the IEPSP.

While some parents self-financed their child's treatment (e.g., parents from Serbia, Croatia, and Slovenia), others received funding from their health insurance funds (e.g., parents from Montenegro and Bosnia and Herzegovina)[1].

It is important to note that all the mentioned countries were once part of the former Republic of Yugoslavia. Therefore, we can infer that participants in our study come from similar linguistic regions, which enables them to understand the questionnaire in the Serbian language. This linguistic similarity contributes to the consistency of responses and minimizes potential language-related biases.

This study was conducted in accordance with the Declaration of Helsinki and complied with APA ethical standards. This study was also approved by the Ethics Committee of the Institute for Experimental Phonetics and Speech Pathology in Belgrade, Serbia (No 2/19, date: 19.9.2019.).

Mothers voluntarily completed the questionnaire and did not receive any payment. The purpose of the research was briefly explained to all respondents, and they were given instructions on how to use the questionnaire. Mothers provided their informed consent to participate in the study. Confidentiality of data was guaranteed, and it was ensured that they would not face any consequences regarding their children's treatment if they refused to participate in the research.

Bartlett's test of sphericity was not significant, indicating that the assumption for conducting ANOVA was satisfied. Statistical comparisons showed that maternal subsamples (in terms of child`s diagnosis) were matched with respect to maternal age ($F_{(2,136)} = .03$, $p = .973$), number of children ($F_{(2,136)} = 2.03$, $p = .135$) and child's age ($F_{(2,136)} = 3.01$, $p = .053$). Furthermore, no more than

[1] Due to the lack of specialists, system support, and insufficient capacities, health insurance funds send children to obtain treatment in other institutions.

20% of the expected counts were less than 5 and all individual expected counts were 1 or greater. These conditions indicate that the requirement for conducting a Chi-square analysis was also satisfied. Statistical comparisons showed that maternal subsamples (in terms of child`s diagnosis) were matched with respect to education ($\chi^2_{(4)} = 5.36$, $p = .252$) and child's gender ($\chi^2_{(2)} = 5.32$, $p = .070$).

## Instruments

*Parenting Stress Index-Short Form (PSI-SF)*

PSI-3/SF[2] (Abidin, 1995) is a self-report inventory comprising 36 statements designed to measure stressful behaviors and feelings related to parenting. Parents rate their agreement with each statement on a five-point Likert scale ranging from 1 (*I do not agree at all*) to 5 (*I completely agree*). The items are loaded on three 12-item factors (subscales): 1) Parental distress (PD) - refers to the stress experienced by an individual as a parent, stemming from various parenting-related factors (items examples: "*I find myself giving up more of my life to meet the needs of my child than I ever expected*" and "*I feel trapped by my responsibilities as a parent*"); 2) Parent-child dysfunctional interaction (PCDI) – refers to the parental perception of the existence or non-existence of dysfunctional interaction with their child (items examples: "*I expected to have closer and warmer feelings for my child than I do, and this bothers me*" and "*My child rarely does things for me that make me feel good*"); 3) Difficult child (DC) - assesses some characteristics of the child that make them more or less demanding (items examples: "*My child seems to cry or fuss more than most children*" and "*My child makes more demands on me than most children*"). The individual subscale scores are added up to form a total score, which indicates the intensity of Total Stress (TS). All three scales in the Parental Stress Instrument have reliability above the recommended .80 level (PCDI: $\alpha$=.818, DC:

[2] For the purposes of this study, an unauthorized translation of the PSI/SF was utilized. The permission letter to use this unauthorized translation was obtained. For additional information on authorized versions of PSI/SF, please contact PAR (https://www.parinc.com/).

α=.912, PD: α=.928). Research conducted in Serbia and Bosnia and Herzegovina examining the stress of parents of children with DDs, as well as studies comparing the stress of parents of children with DDs and typically developing children, have demonstrated the utility of this instrument. Indeed, this instrument has demonstrated its capability to not only detect elevated levels of stress in parents of children with DDs but also to discern differences between various groups of parents. Specifically, it can differentiate between parents of children with DDs and those of typically developing children (cf. Čarakovac & Milačić Vidojević, 2019a; Kostić et al., 2017; Milačić Vidojević, 2008; Sudimac, 2017).

*Brief COPE (BC)*

The Brief COPE (Carver, 1997) is an instrument consisting of 28 statements, scored on a four-point Likert-type scale ranging from 1 (*I have not used this strategy at all*) to 4 (*I have used this strategy often*). The questionnaire assesses 14 coping strategies for dealing with stress: Self-distraction, Active coping, Denial, Substance use, Emotional support, Instrumental support, Behavioral disengagement, Venting, Positive reframing, Planning, Humor, Acceptance, Religion, and Self-blame. Each coping strategy is measured by two items. The reliability of the instrument ranges from .42 to .89, with some subscales exhibiting lower reliability due to having only two items per scale. Considering that the instrument's author notes that there is no general coping index, as different samples exhibit different patterns of relations (Carver, 1997), we decided to follow the author's suggestion and separately use scores from the 14 subscales. The Brief COPE has been used in our region not only with parents of children with DDs but also to examine the relationship between coping strategies and stress (cf. Nolcheva & Trajkovski, 2015).

*Sociodemographic data*

Mothers were asked to provide sociodemographic data for themselves and their children. They could select from offered options or provide written answers for the following variables: their age, level of education, marital status, employment status, and number of children. Additionally, mothers provided

information about their child with DD, including the type of DD, age, and gender. While the parents provided information about the diagnosis, it was based on assessments by qualified clinicians – the data provided by the mothers were additionally confirmed and verified by official medical documentation.

### Statistical methods

Descriptive statistics were calculated to analyze and describe the sample. One-way ANOVA was used to examine differences between three maternal subsamples in terms of maternal age, number of children, child's age, and stress intensity. Linear regression analyses were conducted to further examine which sociodemographic factors and coping strategies contributed the most to predicting parental stress. To explore whether the relationship between sociodemographic variables and parental stress was mediated by some coping strategies, a series of mediation analyses using the PROCESS macro (Hayes, 2012) for SPSS was conducted.

## Results

### Descriptive measures

Table 1 shows descriptive statistics for the PSI-SF and Brief COPE questionnaires. The results are presented for each subgroup of mothers individually.

**Table 1**

*Descriptive measures*

| | ASD | SDDSL | MSDD |
|---|---|---|---|
| | *M* (*SD*) | *M* (*SD*) | *M* (*SD*) |
| PSI Total stress | 110.68 (23.97) | 82.38 (26.71) | 92.61 (21.79) |
| PSI PD | 39.75 (11.98) | 30.92 (11.55) | 33.45 (12.13) |
| PSI PCDI | 31.15 (7.91) | 23.38 (7.66) | 26.06 (6.53) |
| PSI DC | 39.51 (9.54) | 27.02 (9.99) | 32.84 (9.96) |
| Self-distraction | 5.18 (1.88) | 4.69 (1.64) | 4.68 (2.11) |
| Active coping | 7.24 (.99) | 7.08 (1.08) | 7.23 (1.13) |
| Denial | 4.41 (2.09) | 3.32 (1.56) | 3.27 (1.77) |
| Substance use | 2.85 (1.79) | 2.35 (.72) | 2.68 (1.65) |
| Self-blame | 5.00 (2.21) | 4.47 (1.87) | 4.82 (2.22) |
| Behavioral disengagement | 2.56 (1.14) | 2.28 (.93) | 2.50 (1.11) |
| Venting | 4.89 (1.74) | 4.23 (1.66) | 4.50 (1.80) |
| Instrumental support | 6.06 (1.64) | 5.89 (1.81) | 6.22 (1.74) |
| Emotional support | 5.87 (2.04) | 5.96 (1.81) | 5.81 (1.91) |
| Humor | 4.87 (2.10) | 4.74 (2.12) | 4.53 (2.36) |
| Acceptance | 7.02 (1.37) | 6.43 (1.28) | 6.76 (1.39) |
| Positive reframing | 7.11 (1.30) | 6.44 (1.20) | 6.49 (1.48) |
| Planning | 7.04 (1.21) | 7.08 (1.04) | 6.85 (1.15) |
| Religion | 5.83 (2.28) | 4.51 (2.13) | 5.94 (2.44) |

*Note*. ASD: Autism Spectrum Disorders; SDDSL: Specific Developmental Disorders of Speech and Language; MSDD: Mixed Specific Developmental Disorders; PSI PD: Parenting Stress Index – Parental Distress; PSI PCDI: Parenting Stress Index – Parent-Child Dysfunctional Interaction; PSI PD: Parenting Stress Index – Difficult Child.

## The intensity of maternal stress in relation to the type of child's developmental disorder

One-way ANOVA revealed significant differences between maternal groups in terms of stress intensity (*Total stress*: $F_{(2,123)}$ = 6,33, $p$ < .001, partial $\eta^2$ = .21; *Parental distress*: $F_{(2,132)}$ = 7,44, $p$ < .05, partial $\eta^2$ = .10; *Parent-child disfunctional interaction*: $F_{(2,132)}$ = 13,97, $p$ < .001, partial $\eta^2$ = .17; *Difficult child*: $F_{(2,126)}$ = 19,64, $p$ < .001, partial $\eta^2$ = .24).

Furthermore, the post-hoc Tukey HSD test indicated that the mean score on the Total stress for the ASD group was significantly higher than the score for the SDDSL group ($p$ < .001) and for the MSDD group ($p$ < .01). Similar results were also obtained at the subscale level. Specifically, the mean score on the *Parental distress* subscale for the ASD group was significantly higher than the score for the SDDSL group ($p$ < .01) and for the MSDD group ($p$ < .05). The mean score on the *Parent-child dysfunctional interaction* subscale for the ASD group was significantly higher than the score for the SDDSL group ($p$ < .001) and for the MSDD group ($p$ < .01). And finally, the mean score on the *Difficult child* subscale for the ASD group was significantly higher than the score for the SDDSL group ($p$ < .001) and the MSDD group ($p$ < .01), and the mean score for the SDDSL group was significantly lower than the mean score for the MSDD group ($p$ < .05). All descriptive measures are shown in Table 1.

Considering that the distribution of certain dependent variables was not normal, the Kruskal-Wallis test was employed as a replacement for the between-subject ANOVA. The results of the Kruskal-Wallis test for all three subscales of parental stress are significant, aligning with the results of ANOVA. Therefore, since ANOVA provides more detailed insight into the results and the possibility of determining the effect size, those results are interpreted.

Taken together, the presented results suggest significant differences between maternal groups in terms of stress intensity. Specifically, our results suggest that mothers who have a child with ASD report the highest stress intensity.

## Sociodemographic variables and coping strategies as predictors of parental stress

First, we aimed to determine whether the conditions necessary to conduct the regression analysis were satisfied. The minimal sample needed to conduct a regression analysis with 22 predictors was determined using G*Power, employing a priori analysis for linear multiple regression with an $R^2$ of .44, a power of .95, and an alpha error of .05. This analysis indicated a minimal sample size of 60 participants, which is less than the collected. Additionally, all variables exhibited VIF values lower than 5, indicating no issues with multicollinearity. Autocorrelation was also found to be non-significant (DW[3] = 1.74, $p$ = .094), and the Breusch-Pagan test revealed no heteroscedasticity (BP = 30.3, $p$ = .111). Therefore, all conditions were met to proceed with the regression analysis.

Furthermore, we conducted confirmatory factor analyses to determine if a one-factor solution for PSI-SF could be accepted. We utilized the ULS estimator due to the small sample size, and the model test was based on the Satorra-Bentler scaled test statistic. The model ($\chi^2_{(560)}$ = 1751.03, $p$ < .001) demonstrated a good fit in terms of the Comparative Fit Index (CFI = 0.944) and the Tucker-Lewis Index (TLI = 0.941). The cut-off values were as follows: poor < 0.859 < fair < 0.916 < close, indicating that the model showed a good fit. However, the Root Mean Square Error of Approximation indicated a less satisfactory fit (RMSEA = 0.152). Given that these two measures of fit may provide divergent results (Lai & Green, 2016), and considering the already established and suggested factor structure, we opted to accept this solution and utilize the total score in our study.

Regression analyses with Total stress as the outcome variable were conducted to further examine which sociodemographic factors and coping strategies contribute to predicting parental stress. Categorical sociodemographic variables were transformed into dichotomous variables so

[3] Durbin-Watson statistic used to detect the presence of autocorrelation.

that they could be used in linear regression analysis. In other words, we created indicator and dummy variables according to Lunt (2015).

Thus, the three-level categorical variable "diagnosis" was transformed into three separate variables: SDDSL, ASD, and MSDD (SDDSL with levels 0-other diagnosis and 1-SDDSL, as well as for ASD and MSDD). The same was done with the "parental education" variable: the three-level categorical variable for education was transformed into three separate variables: Elementary and high school education, University education, and Postgraduate education (Elementary and high school education with levels 0-other levels of education and 1-Elementary and high school education, as well as for University education and Postgraduate education). Hence, the prediction shown in Table 2 involves contrasting the two presented categories of variables with the third category for both "diagnosis" and "education" variables. More specifically, the third, reference value for the variable "diagnosis" was "ASD", while the reference value for the variable "education" was "Elementary and high school education".

Regression was conducted in two steps. In the first step, only sociodemographic variables were included, and in the second step, coping strategies were added. Both models were significant, and since the increase in prediction from the first to the second model was significant ($F_{\text{change (14, 88)}} = 3.47$, $p < .01$), a second model with all variables was kept ($F_{(23, 88)} = 4.84$, $p < .01$). This model explains 44.4% of the variance in Total stress. Variables that show a significant contribution to the prediction of stress in the model are SDDSL, MSDD, Self-blame, and Elementary and high school education. Coefficients for all variables are shown in Table 2.

The obtained results indicate that parents of children with SDDSL and MSDD report lower stress in comparison to parents of children with ASD. Furthermore, parents with elementary and high school education, as well as those who use the coping strategy of Self-blame, report higher stress intensity.

Table 2

*Sociodemographic factors and coping strategies as predictors of parental stress*

| Variable | *B* | *SE* | Beta (β) | *t* | *p* |
|---|---|---|---|---|---|
| Child's age | -1.19 | 1.04 | -.10 | -1.14 | .255 |
| Number of children | 2.37 | 2.53 | .08 | .94 | .352 |
| Parental age | .42 | .43 | .09 | .99 | .326 |
| Employment | -6.85 | 4.63 | -.12 | -1.48 | .142 |
| SDDSL | -17.35 | 5.09 | - .31 | -3.41 | .001* |
| MSDD | -11.84 | 5.33 | -.19 | -2.22 | .029* |
| University degree | -13.61 | 4.74 | -.26 | -2.87 | .005** |
| Postgraduate education | -8.72 | 5.83 | -.13 | -1.50 | .138 |
| Self-distraction | 1.40 | 1.34 | .10 | 1.05 | .298 |
| Active coping | -2.24 | 2.63 | -.09 | -.85 | .398 |
| Denial | 1.62 | 1.25 | .12 | 1.30 | .198 |
| Substance use | 2.45 | 1.50 | .15 | 1.64 | .105 |
| Self-blame | 3.01 | 1.27 | .24 | 2.36 | .020* |
| Behavioral disengagement | 2.68 | 2.21 | .12 | 1.22 | .227 |
| Venting | -.85 | 1.34 | -.05 | -.63 | .530 |
| Instrumental support | -.66 | 1.60 | -.04 | -.41 | .683 |
| Emotional support | -2.65 | 1.55 | -.19 | -1.71 | .091 |
| Humor | .97 | 1.12 | .08 | .87 | .389 |
| Acceptance | 1.28 | 2.29 | .06 | .56 | .577 |
| Positive reframing | -.30 | 1.93 | -.02 | .16 | .875 |
| Planning | 2.84 | 2.02 | .13 | 1.41 | .163 |
| Religion | 1.18 | .96 | .10 | 1.23 | .224 |

*Note*. SDDSL: Specific Developmental Disorders of Speech and Language; MSDD: Mixed Specific Developmental Disorders. * $p < .05$. ** $p < .01$.

## The mediation effect of coping strategies on the relationship between parental stress and sociodemographic factors

To examine whether the relationship between sociodemographic variables and parental stress is mediated by some of the coping strategies, several mediation analyses using the PROCESS macro (Hayes, 2012) for SPSS were conducted. The outcome variable was always Total stress, while predictor variables were either the number of children or the child's age, as these significantly correlated with stress. To satisfy the conditions for mediation analysis, only coping strategies that significantly correlated with both predictors were considered. Consequently, for the child's age as a predictor, the mediators tested were Self-distraction, Substance use, Self-blame, Behavioral disengagement, and Religion. For the number of children, the tested mediators were Behavioral disengagement and Emotional support.

The results have shown that only Religion and Behavioral disengagement mediate the relationship between total stress and a child's age, while the relationship with the number of children is not mediated. The direct effect of a child's age on total stress is not significant ($b$ = 1.76, $t$ = 1.55, $p$ = .124, bootstraped 95% CI [-0.49, 4.02]). The indirect effect of Religion as a mediator is significant, as the confidence interval does not include zero ($b$ = 0.57, 95% CI [0.024, 1.384]). Having a significant indirect effect and a non-significant direct effect implies that this is a case of full mediation. The same applies to Behavioral disengagement. The direct effect of a child's age on total stress is not significant ($b$ = 1.26, $t$ = 1.19, $p$ = .236), while the indirect effect is ($b$ = 1.16, 95% CI [0.27, 2.33]). The obtained results indicate that the significant correlation between a child's age and total stress is fully explained by religion and behavioral disengagement. There is no inherent connection between stress and these demographic variables; this connection is explained through coping mechanisms used. In other words, parents of older children are more stressed because they are more prone to using these coping strategies, which increase their stress.

## Discussion

Our study indicated that the type of child's DD has a significant effect on maternal perceptions of stress intensity. It was determined that mothers of children with autism spectrum disorders (ASD) report the highest intensity of stress. Such findings are in line with previous research from other countries (Brobst et al., 2008; Giovagnoli et al., 2015; Harper et al., 2013; Pastor-Cerezuela et al., 2016; Rao & Beidel, 2009; Smith et al., 2010), as well as from the Balkans (Bunijevac & Čanadanović-Marinković, 2023; Čarakovac & Milačić Vidojević, 2019a), indicating that parents of children with ASD are under the most stress.

Our results indicate that mothers of children with ASD experience high levels of stress in their parental role. They have impaired awareness of their parental competence, feel stress as a result of limitations in other areas of life, conflict with another parent, and lack of social support. Additionally, these mothers perceive their children as more demanding, as they feel that their children do not meet their expectations, and interaction with the child does not empower them in their parental role. They potentially feel separated or rejected by their children, which indicates that the relationship with the child is compromised or has never been properly established (Pinjatela, 2011). Considering the disorder's clinical picture and the challenges it brings, the obtained results are not surprising. Numerous studies have shown that raising children with ASD is full of everyday challenges and can lead to a decreased sense of parental competence (Preece & Almond, 2008) and self-efficacy (May et al., 2015). ASD symptoms, such as difficulties in achieving social communication and interaction, can affect the establishment of attachment (Rutgers et al., 2007), so we are not surprised by the result that these mothers feel that their relationship with their children is compromised.

Also, sensory difficulties, as well as stereotypical and repetitive patterns of behavior, which are also part of the disorder's clinical picture (DSM-5, 2013), can be particularly pronounced – usually, when ASD is accompanied by intellectual disability, children can also exhibit hyperactive and impulsive behaviors (McClain et al., 2017).

Indeed, the challenges associated with autism spectrum disorder (ASD) often lead parents to prioritize spending their free time at home, which can significantly alter their social lives and contribute to feelings of social isolation (Benderix et al., 2007). This combination of factors, including the clinical features of ASD and their associated consequences, appears to contribute to heightened maternal stress intensity in caring for children with ASD. The parents who participated in our study do not seem to differ significantly from those in Western contexts in terms of the stress they experience (Brobst et al., 2008; Giovagnoli et al., 2015; Harper et al., 2013; Pastor-Cerezuela et al., 2016; Rao & Beidel, 2009; Smith et al., 2010) – despite geographical and cultural differences, the experience of having a child with ASD appears to be a universal stressor.

Mothers of children with ASD experience higher stress levels compared to parents of children with SDDSL and MSDD, probably due to the complex nature of ASD symptoms. These symptoms significantly impact daily functioning and necessitate specialized support services, including speech therapy and behavioral interventions (Gillberg & Fernell, 2014), in comparison to children with SDDSL or MSDD, who may require fewer specialized interventions. Moreover, the pervasive challenges of ASD, such as difficulties in social interactions and academic performance, contribute to parental stress. Stigma and social isolation surrounding ASD exacerbate this stress (Daniels, et al., 2017), as parents may feel isolated and face negative perceptions from others. Additionally, the lifelong nature of ASD and uncertainty about the child's future needs further heighten parental stress, including concerns about independent living, employment, and long-term support.

To enhance the well-being of mothers of children with ASD and improve outcomes for both mothers and their children, we propose several practical implications based on our study. Firstly, early access to intervention services is crucial. These services can proactively address ASD-related challenges, reducing parental stress and fostering positive parent-child relationships. Secondly, tailored support for mothers is essential. Targeted programs focusing on stress management and coping strategies specific to ASD-related challenges can alleviate maternal stress. Additionally, comprehensive parental education

programs can equip mothers with the necessary skills to manage stress effectively and enhance their sense of competence in caring for children with ASD. Thirdly, facilitating connections with other parents and providing opportunities for social interaction can mitigate feelings of isolation and offer valuable emotional support. Lastly, recognizing the universality of stressors associated with raising a child with ASD, support programs should be culturally sensitive to diverse caregiving practices and beliefs.

The study revealed no significant differences in the mean scores on the Total Stress, Parental Distress subscale, and Parent-Child Dysfunctional Interaction subscale between parents of children with SDDSL and parents of children with MSDD. However, a significant difference was observed on the Difficult Child subscale. This indicates that parents of children with SDDSL perceive their child's behavior as less challenging compared to parents of children with MSDD. This finding suggests that children with SDDSL may exhibit less severe behavioral patterns or difficulties than those seen in children with MSDD. Considering the symptomatology of these disorders, the results are unsurprising: while SDDSL disrupt normal language acquisition patterns from early development stages, MSDD involve not only language issues but also distorted motor function acquisition and typically some level of cognitive impairment (ICD-10, 2011).

When considering predictors of maternal stress, it's been observed that mothers with elementary and high school education report the highest stress intensity, aligning with previous research findings (Smith et al., 2001). It's reasonable to assume that parents with lower education levels also have lower socioeconomic status, which may result in a greater focus on meeting the child's basic and material needs (Brezis et al., 2015). Additionally, they often report inadequate access to information about professional support services (Pickard & Ingersoll, 2016). Conversely, more educated parents of children with ASD likely possess a greater capacity to recognize and understand their child's difficulties, thereby having better opportunities to provide appropriate treatment. Previous research suggests that parents of children with ASD from higher-income households may demonstrate a stronger commitment to their parenting roles

and interaction with the child (Brezis et al., 2015). Moreover, their children tend to receive more professional evaluations and receive diagnoses at an earlier age (Thomas et al., 2011). Mentioned structural barriers can impede the diagnostic process, depriving the child of timely treatment and the parents of the ability to provide effective care, consequently leading to heightened stress levels.

Our results stress the need for tailored support services for mothers with lower education levels. Recognizing the impact of socioeconomic status on parental stress, and early access to evaluations and diagnoses is crucial, especially for children from lower socioeconomic backgrounds. Efforts to address socioeconomic disparities and improve access to resources could alleviate stress and promote better outcomes for these families. Programs focusing on stress management, providing information about support services, and offering assistance in funding treatments could help ease maternal stress. Empowering parents with comprehensive information about available resources can help them better understand their child's needs and access appropriate support.

Furthermore, our study contributes to the discourse surrounding the efficacy and adaptability of various coping strategies. We found that a more frequent use of Self-blame predicts higher stress intensity, suggesting that heightened usage of this strategy correlates with increased parental stress. Self-blame is classified as an *avoidance strategy* (Hastings et al., 2005; Whitehead et al., 2015) and is considered maladaptive, a finding supported by our study. Essentially, mothers who engage in self-criticism regarding past events tend to report higher stress levels. While avoidance coping aims to mitigate distress, it generally proves ineffective in the long term and fails to address the underlying threat and its impact (Skinner et al., 2003), thereby contributing to heightened stress intensity.

The findings suggest that mothers from our study exhibit similarities with Western parents, as our results align with Western studies indicating that avoidance strategies contribute to higher stress levels (Hastings et al., 2005; Whitehead et al., 2015). These results imply that despite geographical and cultural differences, similarities in stress profiles among families of children with

DDs persist. Furthermore, the results suggest a potential inclination among mothers who participated in our study to attribute their children's developmental difficulties to themselves. This could imply a cultural influence, as well as a lack of comprehensive information among mothers regarding the etiology and symptomatology of DDs. More specifically, parents who engage in self-blame may feel a sense of responsibility for their child's DD, perceiving that they somehow contributed to its development or could have done more for their child. This sense of self-blame may stem from a belief that they are being punished for past wrongdoings or inadequacies (Nixon, 1993). Additionally, frequent criticism directed at parents of children with DDs, who may outwardly appear similar to their typically developing peers, may contribute to feelings of inadequacy and self-blame, as the cause of the child's behavior is often attributed to parental shortcomings rather than the disorder itself (Francis, 2012). In the Balkans, societal attitudes towards disability and DDs may play a significant role in shaping parental sense of stigma (Daniels, et al., 2017). Furthermore, cultural norms regarding family roles and responsibilities may also influence the prevalence of Self-blame among parents in the Balkans. Traditional gender roles and expectations within families (Pešić, 2009) may place undue pressure on parents, particularly mothers, to fulfill caregiving duties and assume responsibility for their child's developmental challenges.

We suggest healthcare professionals and support programs prioritize identifying and addressing maladaptive coping strategies among parents of children with DDs. Educational programs aimed at parents and the general public can dispel misconceptions and reduce stigma, thus easing feelings of self-blame and inadequacy. Parents who experience self-blame may benefit from interventions addressing feelings of responsibility and guilt, promoting self-compassion and resilience. Raising awareness and fostering acceptance can support parents, reducing external judgment and improving well-being and parental stress levels. Collaboration among researchers, clinicians, and support organizations is key to developing more effective interventions and support systems for families of children with DDs.

The results suggest that Religion and Behavioural disengagement play a mediating role in the relationship between Total stress and a child's age. Parents of older children may experience higher stress levels because they are more likely to utilize coping strategies that ultimately exacerbate their stress. They may turn to work or other activities to distract themselves from the challenges they face or seek solace in religious or spiritual beliefs. As children grow older, families may experience increased stress due to heightened parental concerns about their child's ability to navigate developmental and educational milestones during various phases of the family life cycle (Connolly & Gersch, 2016). Studies have shown that religious coping strategies, such as prayer and seeking solace in spiritual beliefs, are commonly utilized by individuals facing challenging circumstances (Pargament et al., 1998). In the Balkans, religion often plays a significant role in individuals' lives, influencing various aspects of coping with stress and adversity (Pratto et al., 2017). In the context of parenting children with DDs, parents in the Balkans may turn to religious practices as a means of finding comfort and strength in the face of stress and uncertainty.

Additionally, behavioral disengagement, which involves mentally withdrawing from stressful situations and disengaging from problem-solving efforts, may also be observed among parents in the Balkans. Cultural factors, such as stigma surrounding disabilities (Daniels, et al., 2017) and limited access to support services (Međaković et al., 2024), may contribute to feelings of helplessness and resignation among parents, leading to the adoption of avoidance coping strategies. Given the lack of systemic and professional support for older children and adults with DDs in the Balkans (Gosto, 2016), parents may resort to avoidance coping mechanisms more frequently. They may feel disillusioned with seeking assistance and instead turn to prayers and spiritual practices, perhaps because they perceive a lack of available support from existing systems.

Understanding the impact of Religion and Behavioral disengagement on parental stress in relation to a child's age is crucial. Recognizing heightened stress among parents of older children emphasizes the need for tailored support across various family life stages. Addressing the lack of professional assistance

for older children and adolescents with DDs underscores the urgent need for enhanced access to resources in the Balkans, including occupational therapy centers, accommodation and daycare facilities for children and youth, and support centers for parents and family members. Encouraging parents to seek assistance from professional networks beyond religious avenues can enhance stress management strategies. Collaborating with policymakers and community organizations is essential for improving systemic support, and advocating for increased resources and services.

The limitations of our sample should be acknowledged. Firstly, only mothers participated in our study, indicating a potential gender bias. Future studies should aim to include parents of both genders to provide a more comprehensive understanding of parental stress in families of children with DDs. Additionally, the inclusion criteria for our sample involved mothers who had already sought treatment for their children's developmental issues. This may have influenced their coping strategies and stress levels, as they may have been more proactive in seeking support and resources. Moreover, the majority of participants in our study had higher levels of education and some self-financed their children's treatments. This suggests a potential bias towards individuals with higher socioeconomic status. Future research should aim to include a more diverse sample that encompasses individuals from various socioeconomic backgrounds to capture a broader spectrum of experiences related to parental stress and coping strategies. It's important to note that our study was conducted using a convenience sample of parents, which may limit the generalizability of our findings to the broader population of parents in the mentioned countries. Indeed, future studies should explore parental stress in older children as well. Longitudinal studies could offer valuable insights into how stress intensity and coping strategies evolve over time for both parents and children. Additionally, including parents of children with various DDs would enrich our understanding of how different conditions impact parental stress and coping strategies.

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*Conflict of interest*

We have no conflicts of interest to disclose.

*Data availability statement*

Data used in this paper are available upon a reasonable request.

## References

Abidin, R. R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*(4), 407–412. https://doi.org/10.1207/s15374424jccp2104_12

Abidin, R. R. (1995). *Parenting Stress Index: Professional manual.* Psychological Assessment Resources.

Abidin, R. R., Smith, L. T., Kim, H., & Youngstrom, E. A. (2022). Parenting stress. *WikiJournal of Medicine, 9*(1), 3. https://doi.org/10.15347/wjm/2022.003

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders (5th ed.).* https://doi.org/10.1176/appi.books.9780890425596

Barker, E. T., Hartley, S. L., Seltzer, M. M., Floyd, F. J., Greenberg, J. S., & Orsmond, G. I. (2011). Trajectories of emotional well-being in mothers of adolescents and adults with autism. *Developmental Psychology, 47*(2), 551-561. https://doi.org/10.1037/a0021268

Benderix, Y., Nordström, B., & Sivberg, B. (2007). Parents' experience of having a child with autism and learning disabilities living in a group home: A case study. *Autism, 10*(6), 629–641. https://doi.org/10.1177/1362361307070902

Bhushan Gupta, V. (2007). Comparison of parenting stress in different developmental disabilities. *Journal of Developmental and Physical Disabilities, 19*(4), 417-425. https://doi.org/10.1007/s10882-007-9060-x

Bornstein, M. H., & Hendricks, C. (2013). Screening for developmental disabilities in developing countries. *Social Science & Medicine, 97*, 307-315. https://doi.org/10.1016/j.socscimed.2012.09.049

Brezis, R. S., Weisner, T. S., Daley, T. C., Singhal, N., Barua, M., & Chollera, S. P. (2015). Parenting a child with autism in India: Narratives before and after a parent–child intervention program. *Culture, Medicine, and Psychiatry, 39*(2), 277–298. https://doi.org/10.1007/s11013-015-9434-y

Brobst, J. B., Clopton, J. R., & Hendrick, S. S. (2008). Parenting children with autism spectrum disorders: The couple's relationship. *Focus on Autism and other Developmental Disabilities, 24*(1), 38-49. https://doi.org/10.1177/1088357608323699

Bunijevac, M., & Čanadanović-Marinković, J. (2023). The effect of stress on the quality of the parental role of children with autism. *Research in Education and Rehabilitation, 6*(1), 46-55. https://doi.org/10.51558/2744-1555.2023.6.1.46

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine, 4*(1), 92-100. https://doi.org/10.1207/s15327558ijbm0401_6

Chen, K. L., Iao, L. S., & Wu, C. C. (2024). Impact of child behavior problems on parenting stress and depressive symptoms among mothers of children with autism spectrum disorder: mediation of coping strategies. *Journal of Developmental and Physical Disabilities, 36*, 489–509. https://doi.org/10.1007/s10882-023-09919-3

Connolly, M., & Gersch, I. (2016). Experiences of parents whose children with autism spectrum disorder (ASD) are starting primary school. *Educational Psychology in Practice, 32*(3), 245–261. https://doi.org/10.1080/02667363.2016.1169512

Cooper, C., Katona, C., Orrell, M., & Livingston, G. (2008). Coping strategies, anxiety and depression in caregivers of people with Alzheimer's disease. *International Journal of Geriatric Psychiatry, 23*(9), 929–936. https://doi.org/10.1002/gps.2007

Cramer, P. (2003). Personality change in later adulthood is predicted by defense mechanism use in early adulthood. *Journal of Research in Personality, 37*(1), 76–104. https://doi.org/10.1016/S0092-6566(02)00528-7

Croatian Institute of Public Health (2022). Mentalni poremećaji u Republici Hrvatskoj. Zagreb: Croatian Institute of Public Health. Retrieved from: https://www.hzjz.hr/wp-content/uploads/2022/09/Bilten_Mentalni-poremecaji_2022.pdf

Čarakovac, M., & Milačić Vidojević, I. (2019a). Correlation between the stress of parental role and the intensity and frequency of negative mass life events in the parents of children with autism spectrum disorder, in comparison to the parents of children with typical development. *KNOWLEDGE - International Journal, 30*(5), 1273–1277. Retrieved from: https://rfasper.fasper.bg.ac.rs/bitstream/id/3261/document.pdf

Čarakovac, M., & Milačić Vidojević, I. (2019b). *Differences in coping strategies of parents of children with autism spectrum disorder and parents of typically developing children*. 10th International scientific conference Special education and rehabilitation today. Belgrade, October, 25-26th, 2019. Retrieved from: https://rfasper.fasper.bg.ac.rs/bitstream/handle/123456789/3124/Proceedings-2019-CD.pdf?sequence=1&isAllowed=y

Čolić, M. (2023). Autism in Serbia: Insights into parental experiences, support networks, and systemic obstacles. *International Journal of Developmental Disabilities, 1–10*. https://doi.org/10.1080/20473869.2023.2294390

Dabrowski, M., & Myachenkova, Y. (2018). *The Western Balkans on the road to the European Union*. Bruegel Policy Contribution, No. 2018/04, Bruegel, Brussels. Retrieved from: https://www.econstor.eu/bitstream/10419/208011/1/1014693047.pdf

Daniels, A. M., Como, A., Hergüner, S., Kostadinova, K., Stosic, J., & Shih, A. (2017). Autism in Southeast Europe: A survey of caregivers of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 47*, 2314–2325. https://doi.org/10.1007/s10803-017-3145-x

Duarte, C. S., Bordin, I. A., Yazigi, L., & Mooney, J. (2005). Factors associated with stress in mothers of children with autism. *Autism, 9*(4), 416–427. https://doi.org/10.1177/1362361305056081

Džamonja Ignjatović, T., Milanović, M., & Zegarac, N. (2017). How services for children with disabilities in Serbia affect the quality of life of their families. *Research in Developmental Disabilities, 68*, 1-8. https://doi.org/10.1016/j.ridd.2017.06.009

Francis, A. (2012). Stigma in an era of medicalization and anxious parenting: How proximity and culpability shape middle-class parents' experiences of disgrace. *Sociology of Health & Illness, 34*(6), 927-942. https://doi.org/10.1111/j.1467-9566.2011.01445.x

Gau, S. S. F., Chou, M. C., Chiang, H. L., Lee, J. C., Wong, C. C., Chou, W. J., & Wu, Y. Y. (2012). Parental adjustment, marital relationship, and family function in families

of children with autism. *Research in Autism Spectrum Disorders, 6*(1), 263-270. https://doi.org/10.1016/j.rasd.2011.05.007

Gillberg, C., & Fernell, E. (2014). Autism plus versus autism pure. *Journal of Autism and Developmental Disorders, 44*(12), 3274-3276. https://doi.org/10.1007/s10803-014-2163-1

Giovagnoli, G., Postorino, V., Fatta, L. M., Sanges, V., De Peppo, L., Vassena, L., De Rose, P., Vicari, S., & Mazzone, L. (2015). Behavioral and emotional profile and parental stress in preschool children with autism spectrum disorder. *Research in Developmental Disabilities, 45–46*, 411-421. https://doi.org/10.1016/j.ridd.2015.08.006

Gosto, A. (2016). *Having a child with autistic spectrum disorders in Bosnia and Herzegovina: parents´ experiences with coping strategies* (Master's Thesis). Department of Special Needs Education, Faculty of Educational Sciences, University of Oslo. Retrieved from: https://www.duo.uio.no/bitstream/handle/10852/51294/1/THESIS.pdf

Harper, A., Dyches, T. T., Harper, J., Roper, S. O., & South, M. (2013). Respite care, marital quality, and stress in parents of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 43*(11), 2604-2616. https://doi.org/10.1007/s10803-013-1812-0

Hastings, R., Kovshoff, H., Brown, T., Ward, N., Espinosa, F., & Remington, B. (2005). Coping strategies in mothers and fathers of preschool and school-age children with autism. *Autism, 9*(4), 377–391. https://doi.org/10.1177/1362361305056078

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling* [White paper]. Retrieved from http://www.afhayes.com/ public/process2012.pdf

Herring, S., Gray, K. M., Taffe, J. R., Tonge, B. J., Sweeney, D. J., & Einfeld, S. L. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: Associations with parental mental health and family functioning. *Journal of intellectual disability research, 50*(Pt 12), 874-882. https://doi.org/10.1111/j.1365-2788.2006.00904.x

Ibrahimagic, A., Junuzovic-Zunic, L., Duranovic, M., & Radic, B. (2015). Autism treatment in special schools in Bosnia and Herzegovina. *Special Education, 1*, 119-131.

Ilić, S. B., Nikolić, S. J., Ilić-Stošović, D. D., & Golubović, Š. S. (2020). Early identification of children with developmental delay and behavioural problems according to parents concerns in the Republic of Serbia. *Early Child Development and Care, 190*(16), 2605–2611. https://doi.org/10.1080/03004430.2019.1595610

Kosić, R., Duraković Tatić A., Petrić, D., & Kosec, T. (2021). The impact of autism spectrum disorders on the family. *Medicina Fluminensis, 57*(2), 139-149. https://doi.org/10.21860/medflum2021_371644

Kostić, J., Milosavljević, L., & Stanković, M. (2017). Evaluation of stress and support to parents of children with developmental disabilities–our experience. *European Psychiatry, 41*(S1), S215-S215. https://doi.org/10.1016/j.eurpsy.2017.01.2191

Lai, K., & Green, S. B. (2016). The problem with having two watches: Assessment of fit when RMSEA and CFI disagree. *Multivariate Behavioral Research*, *51*(2-3), 220-239. https://doi.org/10.1080/00273171.2015.1134306

Lopez, V., Clifford, T., Minnes, P., & Ouellette-Kuntz, H. (2008). Parental stress and coping in families of children with and without developmental delays. *Journal on Developmental Disabilities, 14*(2), 99-104.

Lunt, M. (2015). Introduction to statistical modelling 2: Categorical variables and interactions in linear regression. *Rheumatology, 54*(7), 1141–1144. https://doi.org/10.1093/rheumatology/ket172

Matišić, I. (2021). *Stres i otpornost obitelji djeteta s poremećajem spektra autizma* (Master's thesis). University of Zagreb, Faculty of Education and Rehabilitation Sciences. Retrieved from: https://urn.nsk.hr/urn:nbn:hr:158:334675

May, C., Fletcher, R., Dempsey, I., & Newman, L. (2015). Modeling relations among coparenting quality, autism-specific parenting self-efficacy, and parenting stress in mothers and fathers of children with ASD. *Parenting: Science and Practice, 15*(2), 119-133. https://doi.org/10.1080/15295192.2015.1020145

May, M., & Hansen, B. (2016). Strength-based assessment for children with autism and related disabilities in Bosnia. *Journal of Undergraduate Research, 2016*(1), article 7. Retrieved from: https://scholarsarchive.byu.edu/jur/vol2016/iss1/7

McClain, B., Hasty Mills, A. M., & Murphy, L. E. (2017). Inattention and hyperactivity/impulsivity among children with attention-deficit/hyperactivity-disorder, autism spectrum disorder, and intellectual disability. *Research in Developmental Disabilities, 70*, 175-184. https://doi.org/10.1016/j.ridd.2017.09.009

Međaković, J., Čivljak, A., Zorčec, T., Vučić, V., Ristić-Medić, D., Veselinović, A., Čivljak, M., & Puljak, L. (2024). Perceptions on support, challenges and needs among parents and caregivers of children with developmental disabilities in Croatia, North Macedonia and Serbia: A cross-sectional study. *BMC Pediatrics, 24*, 297. https://doi.org/10.1186/s12887-024-04770-7

Milačić Vidojević, I. (2008). Stress in parents of autistic children. *Psihijatrija Danas*, *40*(1), 37-49. Retrieved from: http://rfasper.fasper.bg.ac.rs/handle/123456789/169

Ministry of Health - Government of Montenegro (2018). *Strategija zaštite i unapređenja mentalnog zdravlja u Crnoj Gori 2019–2023*. Retrieved from: https://www.gov.me/dokumenta/60af25aa-a65e-4957-84d8-e77a3182ab9b

Miranda, A., Mira, A., Berenguer, C., Rosello, B., & Baixauli, I. (2019). Parenting stress in mothers of children with autism without intellectual disability. *Mediation of Behavioral Problems and Coping Strategies. Frontiers in Psychology, 10*(464). https://doi.org/10.3389/fpsyg.2019.00464

Nedović, G., Sretenović, I., Potić, S., & Arsić, R. (2016). Early intervention in the world: implications for improvement in Serbia. In *Early intervention in special education and rehabilitation* (Ed. S. Nikolić, R. Nikić, V. Ilanković). pp. 25-41. University of Belgrade – Faculty of Special Education and Rehabilitation. Retrieved from: http://rfasper.fasper.bg.ac.rs/handle/123456789/2525

Negri, L. M., & Castorina, L. L. (2014). Family adaptation to a diagnosis of autism spectrum disorder. *Handbook of Early Intervention for Autism Spectrum Disorders*, 117-137.

Negri, L., & Castorina, L. (2014). Family Adaptation to a Diagnosis of Autism Spectrum Disorder. In: Tarbox, J., Dixon, D., Sturmey, P., Matson, J. (Eds.) *Handbook of Early Intervention for Autism Spectrum Disorders*. Autism and Child Psychopathology Series. Springer, New York, NY. https://doi.org/10.1007/978-1-4939-0401-3_7

Ni'matuzahroh, S. M. W., Ningrum, V., Widayat, Y. M. S., Hasanati, N., & Wang, J. H. (2022). The association between parenting stress, positive reappraisal coping, and quality of life in parents with autism spectrum disorder (ASD) children: A systematic review. *Healthcare, 10*(1), 52. https://doi.org/10.3390/healthcare10010052

Nixon, C. D. (1993). *Reducing self-blame and guilt in parents of children with severe disabilities*. In G. H. S. Singer & L. E. Powers (Eds.), Families, disability, and empowerment: active coping skills and strategies for family interventions (pp. 175-201). Baltimore, MD: Paul H. Brookes Publishing Co.

Nolcheva, M., & Trajkovski, V. (2015). Exploratory study: Stress, coping and support among parents of children with autism spectrum disorders. *Journal of Special Education and rehabilitation, 16*(3–4), 84–100. https://doi.org/10.1515/jser-2015-0013

Norizan, A., & Shamsuddin, K. (2010). Predictors of parenting stress among Malaysian mothers of children with Down syndrome. *Journal of Intellectual Disability Research, 54*(11), 992-1003. https://doi.org/10.1111/j.1365-2788.2010.01324.x

Östberg, M., & Hagekull, B. (2000). A structural modeling approach to the understanding of parenting stress. *Journal of Clinical Child Psychology, 29*(4), 615-625. https://doi.org/10.1207/S15374424JCCP2904_13

Pastor-Cerezuela, G., Fernández-Andrés, M. I., Tárraga-Mínguez, R., & Navarro-Peña, J. M. (2016). Parental stress and ASD: Relationship with autism symptom severity, IQ, and resilience. *Focus on Autism and Other Developmental Disabilities, 31*(4), 300-311. https://doi.org/10.1177/1088357615583471

Pejovic-Milovancevic, M., Stankovic, M., Mitkovic-Voncina, M., Rudic, N., Grujicic, R., Herrera, A. S., Stojanovic, A., Nedovic, B., Shih, A., Mandic-Maravic, V., & Daniels, A. (2018). Perceptions on support, challenges and needs among parents of children with autism: The Serbian experience. *Psychiatria Danubina, 30*(6), 354-364. Retrieved from: https://hrcak.srce.hr/262938

Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion, 37*(4), 710–724. https://doi.org/10.2307/1388152

Pešić, J. (2009). *Patrijarhalnost na Zapadnom Balkanu, komparativna analiza vrednosnih orijentacija* – in: Porodice u Srbiji danas u komparativnoj perspektivi (A. Milić, S. Tomanović, eds.) Beograd, Institut za sociološka istraživanja Filozofskog fakulteta u Beogradu i Čigoja štampa.

Peters-Scheffer, N., Didden, R., & Korzilius, H. (2012). Maternal stress predicted by characteristics of children with autism spectrum disorder and intellectual disability. *Research in Autism Spectrum Disorders, 6*(2), 696–706. https://doi.org/10.1016/j.rasd.2011.10.003

Piazza, V. E., Floyd, F. J., Mailick, M. R., & Greenberg, J. S. (2014). Coping and psychological health of aging parents of adult children with developmental disabilities. *American Journal on Intellectual and Developmental Disabilities, 119*(2), 186-198. https://doi.org/10.1352/1944-7558-119.2.186

Pickard, K. E., & Ingersoll, B. R. (2016). Quality versus quantity: the role of socioeconomic status on parent-reported service knowledge, service use, unmet service needs, and barriers to service use. *Autism, 20*(1), 106-15. https://doi.org/10.1177/1362361315569745

Pinjatela, R. (2011). *Influence of biopsychosocial factors on early mother-child interaction*. (Dissertation). Zagreb: Edukacijsko-rehabilitacijski fakultet.

Pistoljevic, N., Dzanko, E., & Ghaziuddin, M. (2021). Practice patterns and potential barriers to early diagnosis of autism in Bosnia and Herzegovina: A preliminary

study. *Journal of Autism and Developmental Disorders, 51*, 4447–4455. https://doi.org/10.1007/s10803-021-04875-3

Pratto, F., Žeželj, I., Maloku, E., Turjačanin, V., & Branković, M. (Eds.). (2017). *Shaping social identities after violent conflict: Youth in the Western Balkans*. Cham, Switzerland: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-62021-3

Preece, D., & Almond J. (2008). Supporting families with children on the autism spectrum to use structured teaching approaches in the home and community. *Good Autism Practice, 9*(2), 44–53. Retrieved from: http://www.ingentaconnect.com/content/bild/gap/2008/00000009/00000002/art00009

Rao, P. A., & Beidel, D. C. (2009). The impact of children with high-functioning autism on parental stress, sibling adjustment, and family functioning. *Behavior Modification, 33*(4), 437-451. https://doi.org/10.1177/0145445509336427

Rutgers, A. H., van Ijzendoorn, M. H., Bakermans-Kranenburg, M. J., Swinkels, S. H. N., van Daalen, E., Dietz, C., Naber, F. B. A., Buitelaar, J. K., & van Engeland, H. (2007). Autism, attachment and parenting: A comparison of children with autism spectrum disorder, mental retardation, language disorder, and non-clinical children. *Journal of Abnormal Child Psychology, 35*(5), 859–870. https://doi.org/10.1007/s10802-007-9139-y

Shtayermman, O. (2013). Stress and marital satisfaction of parents to children diagnosed with autism. *Journal of Family Social Work, 16*(3), 243-259. https://doi.org/10.1080/10522158.2013.786777

Sim, A., Cordier, R., Vaz, S., Netto, J., & Falkmer, T. (2017). Factors associated with negative co-parenting experiences in families of a child with autism spectrum disorder. *Developmental Neurorehabilitation, 20*(2), 83-91. https://doi.org/10.3109/17518423.2015.1069414

Sinha, D., Verma, N., & Hershe, D. (2016). A comparative study of parenting styles, parental stress and resilience among parents of children having autism spectrum disorder, parents of children having specific learning disorder and parents of children not diagnosed with any psychiatric disorder. *Annals of International Medical and Dental Research, 2*(4), 106-111. https://doi.org/10.21276/aimdr.2016.2.4.30

Sivberg, B. (2002). Family system and coping behaviors: A comparison between parents of children with autistic spectrum disorders and parents with non-autistic children. *Autism, 6*(4), 397–409. https://doi.org/10.1177/1362361302006004006

Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*(2), 216–269. https://doi.org/10.1037/0033-2909.129.2.216

Službeni glasnik (2019). *Program o zaštiti mentalnog zdravlja u Republici Srbiji za period 2019-2026. godine*. br. 84/2019. Retrieved from: https://www.zdravlje.gov.rs/view_file.php?file_id=1199&cache=sr

Smith, T. B., Oliver, M. N. I., & Innocenti, M. S. (2001). Parenting stress in families with children with disabilities. *American Journal of Orthopsychiatry, 71*(2), 257-261. https://doi.org/10.1037/0002-9432.71.2.257

Smith, L. E., Hong, J., Mailick Seltzer, M., Greenberg, J. S., Almeida, D. M., & Bishop, S. L. (2010). Daily experiences among mothers of adolescents and adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 40*(2), 167–178. https://doi.org/10.1007/s10803-009-0844-y

Stoll-Egger, S. (2019). *Complicated grief of ambiguous loss in parents of children with autism* (Doctoral thesis). Faculty of Pacific Graduate School of Psychology Palo Alto University. Retrieved from: https://www.proquest.com/docview/2298099540/abstract/9E364C183E4448D2PQ/1

Stošić, J., Lisak Šegota, N., & Preece, D. (2022). Primary teachers' knowledge and attitudes about autism, and experience of good practice approaches: Implications for policy and practice in Croatia. *Support for Learning, 37*(4), 573-588. https://doi.org/10.1111/1467-9604.12429

Stuart, M., & McGrew, J. H. (2009). Caregiver burden after receiving a diagnosis of an autism spectrum disorder. *Research in Autism Spectrum Disorders, 3*(1), 86-97. https://doi.org/10.1016/j.rasd.2008.04.006

Sudimac, S. (2017). *Parental perceptions of socio-emotional responsiveness of children with ASD and children's impact on the family as factors of parental stress*. Proceedings of the XXIII scientific conference empirical studies in psychology, March 24-26, Faculty of philosophy, University of Belgrade, pp. 170-175.

Tehee, E., Honan, R., & Hevey, D. (2009). Factors contributing to stress in parents of individuals with autistic spectrum disorders. *Journal of Applied Research in Intellectual Disabilities, 22*(1), 34-42. https://doi.org/10.1111/j.1468-3148.2008.00437.x

Thomas, P., Zahorodny, W., Peng, B., Kim, S., Jani, N., Halperin, W., & Brimacombe, M. (2011). The association of autism diagnosis with socioeconomic status. *Autism, 16*(2), 201–213. https://doi.org/10.1177/1362361311413397

UNICEF (2017). *Situaciona analiza o položaju djece sa poteškoćama u Bosni i Hercegovini.* UNICEF. Retrieved from: https://www.unicef.org/bih/media/376/file/Situaciona%20analiza%20o%20polo%C5%BEaju%20djece%20sa%20pote%C5%A1ko%C4%87ama%20u%20BiH.pdf

Vernhet, C., Dellapiazza, F., Blanc, N., Cousson-Gélie, F., Miot, S., Roeyers, H., & Baghdadli, A. (2019). Coping strategies of parents of children with autism spectrum disorder: A systematic review. *European Child & Adolescent Psychiatry, 28,* 747–758. https://doi.org/10.1007/s00787-018-1183-3

Wang, P., Michaels, C. A., & Day, M. S. (2011). Stresses and coping strategies of chinese families with children with autism and other developmental disabilities. *Journal of Autism and Developmental Disorders, 41*(6), 783–795. https://doi.org/10.1007/s10803-010-1099-3

Weiss, J. A., & Lunsky, Y. (2011). The brief family distress scale: A measure of crisis in caregivers of individuals with autism spectrum disorders. *Journal of Child and Family Studies, 20*, 521–528. https://doi.org/10.1007/s10826-010-9419-y

Weiss, J. A., Wingsiong, A., & Lunsky, Y. (2014). Defining crisis in families of individuals with autism spectrum disorders. *Autism, 18*(8) 985–995. https://doi.org/10.1177/1362361313508024

Whitehead, K., Dorstyn, D., & Ward, L. (2015). Psychological adjustment in families affected by autism spectrum disorder. *Journal of Developmental and Physical Disabilities, 27*(5), 703–717. https://doi.org/10.1007/s10882-015-9446-0

World Health Organization (2011). *International Statistical Classification of Diseases and Related Health Problems: Instruction Manual.* 10th revision. Vol. 2. Geneva: WHO.