

Couple interactions and relationship satisfaction in parents of children with Autism Spectrum Disorder

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Abstract

Despite the evidence of an increased stress, the knowledge on couple interactions in parents of children with Autism Spectrum Disorder (ASD) is still scarce. In this paper we examine the associations between parental stress, social support, positive and negative couple interactions, and relationship satisfaction in parents of children with ASD. The sample included 89 participants who met the criteria of being in a relationship, i.e. living in the same household with a partner, and parenting a child with a diagnosis of ASD. Questionnaires were administered through kindergartens, primary schools and centers for autism. Path analysis showed a significant indirect effect of parental stress on relationship satisfaction via more negative interactions, more co-parenting conflicts, and less positive interactions. The results also suggest an important role

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of social support: high parental stress was associated with negative interactions in couples with weak social support, whereas the same association was not substantial for couples with strong social support. Enhancing parent's intimate relationships should be included in planning support services. Programs should address the issues of positive and negative couple interactions and forms of effective social support.

Keywords: Autism Spectrum Disorder; Couple interactions; Relationship satisfaction; Parental stress; Social support.

1. Introduction

The birth of a child is commonly described as a joyful experience for the couple. However, empirical evidence suggests that the transition to parenthood is also associated with two processes: an increase in the level of stress experienced (e.g. Umberson, Pudrovska, & Reczek, 2010) and a decrease in relationship satisfaction (Randall & Bodenmann, 2009). Studies further show that these two processes might be related by the *spillover effect* in which stress (such as parental stress), which is external to the relationship itself in that it originates outside of the dyad, influences the processes *within* the relationship (e.g. Neff & Karney, 2009; Falconier, Nussbeck, Bodenmann, Schneider, & Bradbury, 2015). Therefore, couples that otherwise have mostly positive interactions in the relationship could show less of these interactions and/or more negative interactions under the circumstances of high parental stress.

Parental stress is usually experienced when parents perceive that the demands of the parental role outweigh their resources. Parents of children with Autism Spectrum Disorder (ASD) are especially at risk of feeling stressed since raising a child with ASD may bring additional parenting challenges. In fact, research has consistently shown elevated levels of stress among parents of children with ASD in comparison to parents of typically developing children (Saini, Stoddart, Gibson, Morris, Barrett, Muskat *et al.*, 2015). However, studies of parenting a child with ASD have largely focused on the child-related factors, such as the child's challenging behaviors, and little information has been collected regarding the parents' relationship. A review of the few studies that have been conducted thus far, focused on the couples' relationships, was descriptive of complex associations and inconsistent findings (Sim, Cordier, Vaz, & Falkmer, 2016). Scholars also suggest the need to investigate the role of broader contextual factors that have been neglected in past research (Brown, Whiting, Kahumoku-Fessler, Witting, & Jensen, 2020). In this paper, we examine the associations between experiencing parental stress, positive/negative couple interactions and co-parenting, and relationship satisfaction in parents of children with ASD. We also examine the couples' social support as a possible contextual protective factor.

Research has revealed that parental stress is especially high in the population of parents of children with ASD, which starts even before the diagnosis and lasts through the entire lifespan of the child (e.g. Karst & Van Hecke, 2012). Moreover, parenting a child with ASD is related to lower

levels of psychological well-being and to coping, rather than parenting, a child with other developmental disabilities, such as the Down syndrome (Abbeduto, Seltzer, Shattuck, Krauss, Orsmond, & Murphy, 2004). This may be due to the number and intensity of challenges that characterize ASD, which include both developmental delays (in social communication and, often, intellectual domain), as well as problems in behavior (temper tantrums, aggression, stereotypy, self-injury) and sleeping or eating difficulties (Jang, Dixon, Tarbox, & Granpeesheh, 2011). Another reason could be the lack of clarity in the diagnostic criteria (Martinez-Pedraza, 2012). Due to the nature of the disorder regarding the social deficits of the child, parents may also feel stigmatized and anxious about the child's adjustment (Martinez-Pedraza, 2012).

Of all stressors which parents of children with ASD face, one of the strongest are the child's challenging behaviors (McStay, Trembath, & Dissanayake, 2014). Some of the behaviors, such as repeated and unusual vocalizations and destruction of property, are demanding because they are not socially acceptable. Other behaviors are especially stressful because they are physically dangerous, such as self-injuring by hitting, pinching, or scratching, or leaving the supervision of the parent without permission (Jang *et al.*, 2011). Due to the nature and frequency of these challenging behaviors, research has shown that parents of children with ASD are faced with day-to-day hassles, which accumulate and, in the long run, transform into a chronic feeling of distress (McGrew & Keys, 2014). Studies have consistently reported that *chronic stressors* have the most significant impact on relationship quality (Randall & Bodenmann, 2009); therefore, it could be expected that raising a child with ASD could be associated with poor relationship outcomes. In concordance, parents of children with ASD show a decline in satisfaction through the child's adolescence and adulthood, while parents of typically developing children show an increase in satisfaction during the child's transition to adulthood (Hartley, Barker, Seltzer, Greenberg, & Floyd, 2011).

There is still a lack of research regarding the nature of the spillover effect among couples with a child with ASD. However, a conceptual framework for the association between parental stress and relationship satisfaction in parents of children with ASD can be provided by the *stress-divorce-model* (SDM; Bodenmann, 1995). According to the SDM model, parental stress might influence relationship interactions in several ways. Firstly, it could *decrease the time* partners spend with each other. Caring for a child with ASD might take so much time and be so emotionally cumbersome, that

parents do not have enough energy and time for positive couple behaviors (e.g. being affectionate or intimate with a partner). In accordance, a recent study by Hartley, Papp and Bolt (2018) found that fewer positive marital interactions during the day were associated with a more stressful parenting day in mothers of children with ASD. Secondly, stress *reduces the capacity for self-regulation*, necessary for adaptive couple communication, and could encourage partners to express negative individual traits (e.g. irritability or aggressiveness). High parental stress in parents of children with ASD could lead to less patience and empathy towards the partner, as well as more arguments between partners. This could result in more frequent conflicts and negative behaviors towards the partner. In line with this, a recent study by Goetz, Rodriguez and Hartley (2019) found that a more stressful parenting day was associated with increased negative couple interactions in families of children with ASD. Finally, stress also increases the likelihood of mental/physical health problems (e.g. mood disorders). In the long run, all the aforementioned processes could affect the relationship quality, relationship satisfaction, and stability of the relationship.

A study by Hartley and colleagues (Hartley, Papp, Blumenstock, Floyd, & Goetz, 2016) indicated a possible role of specific negative interactions between parents *concerning the child*. The study found the association of a child's problems in behavior on a given day and the next day's ratings of the couple's negative interactions in trying to solve the problems concerning the child. The authors hypothesized that more problems in behavior were related to more frequent interactions concerning the child, as opposed to other topics, and that these interactions were associated with a higher level of negative effects than interactions concerning other topics. Other studies have indicated that managing problems in the child's behavior is related to more disagreements in the co-parenting, i.e. mutual child upbringing (Sim, Cordier, Vaz, Netto, & Falkmer, 2017). These disagreements are probably due to the differing views on parenting styles and methods. The result could be an increase in the negative effect towards the partner, such as anger or resentment, and, consequently, partners could display emotional withdrawal and avoid being intimate (Hock, Timm, & Ramisch, 2012). A recent study by Chan and Leung (2020) also found that conflicts regarding the child's upbringing were related to lower marital love between parents of children with ASD.

Although research on parents of children with ASD has been largely focused on negative outcomes, qualitative studies suggest there is heterogeneity in the adaptation to parental stress among these couples, as

well as relationship stability (e.g. Marciano, Drasgow, & Carlson, 2015). It could be expected that mechanisms of adaptive coping buffer the stress effects and, therefore, preserve the relationship satisfaction, and one of these mechanisms is seeking and receiving support from family and friends. Studies including parents of children with other developmental disabilities have shown that parents who report having high levels of social support feel greater subjective well-being than parents who report using avoidance and other ineffective coping mechanisms (e.g. Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001). However, the influence that social support can have on the relationship quality is not clear.

Social support appears in different forms, from practical assistance and advice to validation of beliefs and emotions. More specifically, parents of children with disabilities may gain parenting support, i.e. assistance in parenting a child with a disability (e.g. advice on issues in parenting, help with child care responsibilities, etc.) and *general support*, i.e. instrumental and emotional help in different life domains that are unrelated to the child with a disability. Studies have reported that parenting support among parents of children with disabilities is associated with less perceived parental stress (Guralnick, Hammond, Neville, & Connor, 2008), while general social support is not associated with parental stress (Hauser-Cram, Warfield, Shonkoff, Krauss, Sayer, Upshur *et al.*, 2001). There is evidence that general social support is related to marital outcomes and well-being in the general population (Julien & Markman, 1991). However, research on the role of social support in relationship satisfaction is still needed since studies have been focused on the support within the couple rather than the support outside of the couple, such as support from family and friends.

2. Aims and hypotheses

Rare studies conducted thus far of the effects of specific parental factors on the relationship outcomes among parents of children with ASD reveal complex associations and inconsistent findings (Saini *et al.*, 2015; Sim *et al.*, 2016). There is also a lack of research regarding the nature of the spillover effect and the potential mechanisms which could mediate the relationship between parental stress and relationship satisfaction in these couples. Scholars also suggest the need for investigating the role of broader contextual factors, such as social support outside of the couple, which has been neglected in earlier research (Brown *et al.*, 2020). Therefore, this research aims to examine the associations between experiencing parental

stress, positive/negative couple interactions and co-parenting conflicts, and relationship satisfaction in parents of children with ASD. We also examine couples' general social support as a possible contextual protective factor.

Most of the earlier studies did not control for the possible effect of several socio-demographic factors, such as the length of the relationship, age of the child, parents' education degree, and income, thus we included those variables in our research. We also controlled for the level of the child's challenging behaviors, which contributed significantly in explaining the perceived parental stress, as the evidence suggests.

Since parents of children with ASD are faced with everyday stressors (McGrew & Keys, 2014), and studies show that chronic stressors have the most significant impact on relationship quality (Randall & Bodenmann, 2009), we expect that more parental stress among these couples should be associated with lower relationship satisfaction. According to the SDM model (Bodenmann, 1995), parental stress might influence relationship interactions by (1) decreasing the time and energy for positive couple interactions and (2) reducing the capacity for self-regulation, thus increasing the frequency of negative interactions. Therefore, we hypothesized that parental stress influenced the relationship satisfaction via less positive couple interactions and more negative couple interactions. Since recent studies (Hartley *et al.*, 2016; Chan & Leung, 2020) have indicated a possible role of specific negative interactions between parents concerning the child, we further hypothesized that parental stress could affect the relationship satisfaction via more co-parenting conflicts as well. Finally, since there is strong evidence that social support is an adaptive coping mechanism with stressors (e.g. Dunn *et al.*, 2001), we expected that social support had a moderating effect on associations among parental stress and other variables, in such a way that stronger social support could buffer the negative effects of stressors.

3. Methods

3.1. Sample

We employed the criteria sampling method. Inclusion criteria for participants were the following: a) being in a relationship and living in the same household with a partner, b) parenting at least one child with a diagnosis of ASD, enrolled in the (pre)school system of education and childcare in Croatia. The sample included 89 participants. Data was

collected between March and May 2019. There were more female (66.30%) than male participants. The average age of women vs. men who took part in the research was 38 years old vs. 42 years old. On average, couples spent 13 years together. Most of the participants in the study had a high school diploma or even a college degree. The majority (89.60%) of men were employed full-time. As regards women, 20.30% of women were employed full-time, 23.70% were on maternity leave, 27.10% worked part-time, and 33.80% were unemployed. Moreover, as regards the household income, 25.80% of the participants had a monthly household income that was below average (660 – 1000 EUR), while 27.00% had a monthly household income that was above average (over 2000 EUR). Most respondents (46.1%) had two children, one of whom had ASD, while 33.7% only had one child. As all children were enrolled in the (pre)school system of education and childcare in Croatia, parents participated in at least some form of short- or long-term support services.

On average, children diagnosed with ASD were 7.5 years old and most of them (83.10%) were males. Parents' assessment of the child's verbal abilities in our sample showed that a significant percentage of children used only sentences with two or three words (28.1%) or did not speak at all (18%), while about one-third of the sample had verbal abilities at the level of using sentences with four or more words (31.5%). These figures corroborate the findings of a longitudinal study conducted in the United Kingdom, which demonstrated that 46.2% of children with ASD who participated in formal education presented severe difficulties in verbal abilities (Keen & Ward, 2004). Parents in our sample reported that challenging behaviors occurred "frequently" in 28.1% of children, "occasionally" in 40.9% of children, and "rarely" in 18.2%. Overall, 87.2% of children exhibited challenging behaviors, which was consistent with other studies, showing a prevalence of challenging behaviors among children with ASD as high as 94% (e.g., McTiernan, Leader, Healy, & Mannion, 2011). When considering the rating support needs on a scale of 1 to 5 (with 1 indicating the need of a low level of support and 5 indicating the need of a very high level of support), we found that 65.2% of parents expressed the need for their children to receive a higher level of support (responses "4" and "5"). Finally, 16% of parents indicated that their child had another diagnosis, in addition to ASD, with epilepsy being the most common.

3.2. Instruments

3.2.1. Parental stress

The Parental Stress Scale (Berry & Jones, 1995) measures the quantity of parental stress, regarding both the negative and positive aspects of parenting. It consists of 18 questions with a Likert-type scale. The low score represents low levels of stress and vice versa. The scale was previously validated on a Croatian sample (Milić Babić & Laklija, 2013). In this research, internal consistency was .89.

3.2.2. Co-parenting conflicts

Co-parenting conflicts were measured using the short version of the Interparental Conflict: The Parent Problem Checklist (Dadds & Powell, 1991; see Kröger, Hahlweg, Heinrichs, Döpfner, & Plück, 2009 for the short version), which measures interparental conflict regarding the child's upbringing. The three questions concerned parents' differences of opinion, participating in discussions that end in an argument, and not following rules set by a parent. This Likert-type scale contains answers from "never" to "very often". The total score on this scale was calculated as an average response. The scale was previously validated on a Croatian sample (Alimović, Lisak, Cvitković, Wagner Jakab, Žic Ralić, & Stošić, 2016). In this research, internal consistency was .84.

3.2.3. Positive and negative interactions

Positive and negative interactions in a relationship were measured with the Inventory of Affection and Antagonism in Marriage (Huston, Kamenov, & Huić, 2010), which was developed for use in the Croatian population on the basis of the PAIR project study (Huston & Vangelisti, 1991). It consists of 17 questions and a 7-degree scale. All 17 questions can be divided into two subscales: positive interactions, which had an internal consistency of .91, and negative interactions, which had an internal consistency of .84.

3.2.4. Instrumental and emotional social support

The Scale of Instrumental and Emotional Social Support (Tadinac, Kamenov, Jelić, & Hromatko, 2007) measures the quantity of support given to parents by their partner, family, friends, and neighbors, and was developed for use in the Croatian population. In this study, the scale had a good internal consistency of .88.

3.2.5. Relationship satisfaction

The two subscales of the Marriage Quality Index (Norton, 1983) were used in this research. One subscale consisted of 5 questions on a 7-degree scale (from “disagree a lot” to “completely agree”). The other subscale only had one question (“Taking everything into account, how happy are you in a relationship with your partner?”) and a 10-degree scale. The total score was calculated as an average response to all 6 questions. This composite measure was previously validated on a Croatian sample (Salkicevic, Löw, & Tonković Grabovac, 2014). The internal consistency of this scale was .97.

3.2.6. Sociodemographic questionnaire

Sociodemographic variables were examined in the second part of the questionnaire that was designed solely for the purpose of this research. All of the measured variables fell into the following categories: age and sex of the participants, education level, years married, time spent living together, years in the relationship before getting married, employment status and working hours, monthly household income, members of the household, age and sex of the child with ASD, diagnosis and additional disabilities of the child with ASD, verbal competence, frequency of challenging behaviors, degree of needed support, age and sex of other children in the family.

3.3. Procedure

Participants were recruited from a large metropolitan city – the capital city of Zagreb – through the collaboration with kindergartens, primary schools, special education centers and the center for autism. The study was conducted in accordance with the Institutional ethical board standards (approval of the Ethical board of the Faculty; approval no. 19-15/02). Questionnaires were distributed to special education teachers/educational rehabilitators, employed at the aforementioned facilities, who reached out to parents. If parents had expressed interest to take part in the research, they were given the informed letter, the informed consent, and the questionnaire. The questionnaires were returned in sealed envelopes to protect the identity of parents and their children.

3.4. Data analyses

For descriptive indicators, we used SPSS non-parametric statistics. To examine the associations between the variables, we conducted a path

analysis on the variables observed using the MPlus 7.0 SEM software. In line with common practice, model fit was evaluated by chi-squared statistics, the Root Mean Squared Error of Approximation (RMSEA), the Comparative Fit Index, the Tucker-Lewis Index, and the Standardized Root Mean Square Residual, using the recent cut-off value guidelines (Hu & Bentler, 1999). However, in simulation studies, the RMSEA usually falsely indicates poor model fitting when the sample size is small; therefore, in such cases, it is recommended not to report it (Kenny, Kaniskan, & McCoach, 2015).

To address the non-normality of the data, which was probably the result of the small sample, we used a robust estimation method – Maximum likelihood with robust standard errors and a Satorra-Bentler statistics (MLM).

4. Results

Descriptive statistics and Spearman's correlations among variables are presented in Table 1. The median value of parental stress was $C = 41.00$ ($Q = 6.50$; theoretical range from 18 to 90). This result shows that participants in the study were moderately exposed to parental stress. The median value of co-parenting conflicts was $C = 7.00$ ($Q = 2.00$; theoretical range from 3 to 15), which indicates that parents who participated in this study rarely to sometimes expressed opposing attitudes towards their child's upbringing. The aforementioned results also indicate that parents rarely to sometimes took part in conflicts when they discussed their parental decisions with one another. On the subscale that measured positive interactions among partners, the median value was $C = 3.65$ ($Q = 1.15$; theoretical range from 1 to 7), which indicates that participants significantly perceived positive interactions with their partner at least twice a week or every other day. When it comes to negative interactions, such as criticizing one another, showing dominance during conversations, or being angry, the median value was $C = 2.14$ ($Q = .70$; theoretical range from 1 to 7). This indicates that participants engaged in negative interactions once or twice a week on average. The median value for perceived support from other people, e.g. parents, friends, neighbors, etc. was $C = 2.07$ ($Q = .35$; theoretical range from 1 to 3). On average, participants showed a high level of relationship satisfaction ($C = 39.00$, $Q = 5.88$; theoretical range from 6 to 45).

Table 1 – Descriptive statistics and Spearman's correlations among variables in the path model ($N = 89$)

Variable	$C(Q)$	Min	Max	Cronbach's alpha	1	2	3	4	5	6
1. Parental stress	41.00 (6.50)	22	76	.89	-	.43**	-.32**	.30**	-.50**	-.36**
2. Co-parenting conflicts	7.00 (2.00)	3	15	.84		-	-.43**	.64**	-.32**	-.63**
3. Positive interactions	3.65 (1.15)	1	6.30	.91			-	-.41**	.35**	.70**
4. Negative interactions	2.14 (.70)	1	6.71	.84				-	-.28**	-.70**
5. Social support	2.07 (.35)	1	3	.88					-	.42**
6. Relationship satisfaction	39.00 (5.88)	6	45	.97						-

Note: C = median; Q = interquartile range; Min = the lowest observation; Max = the highest observation.

** = $p < .01$; * = $p < .05$.

The correlation between co-parenting conflicts and parental stress was statistically significant ($r = .43$, $p < .01$). The higher level of conflicts between parents was associated with higher levels of parental stress. Higher results on the scale of co-parenting conflicts were also associated with higher results on the scale of negative interactions ($r = .64$, $p < .01$), indicating that parents who had more disagreement when it comes to the upbringing of their child also had more negative interactions. The higher results on the co-parenting scale of co-parenting conflicts were moderately and negatively correlated with the positive interactions scale ($r = -.50$, $p < .01$). Fewer disagreements between parents were associated with more positive interactions, e.g. giving compliments and showing interest in the problems of the partner. The same pattern was apparent when considering the correlation between co-parenting conflicts and the frequency of positive interactions. The correlation between these two variables was $r = -.54$, $p < .01$. The parents who had fewer disputes concerning their child invested more time in activities, such as going out, laughing together and talking. Co-parenting conflicts were also negatively correlated ($r = -.32$, $p < .01$) with the support received from parents, in-laws, friends, and neighbors. Disagreement over parental issues meant less support from family and friends, in contrast to emotional support, e.g. encouragement, or practical support, e.g. household help or taking care of the children.

Results on the parental stress scale were correlated with results on the positive interactions scale ($r = -.32$; $p < .01$). Partners that had higher levels of parental stress perceived less positive interactions from their partners. Likewise, results on the parental stress scale were also correlated ($r = -.46$, p

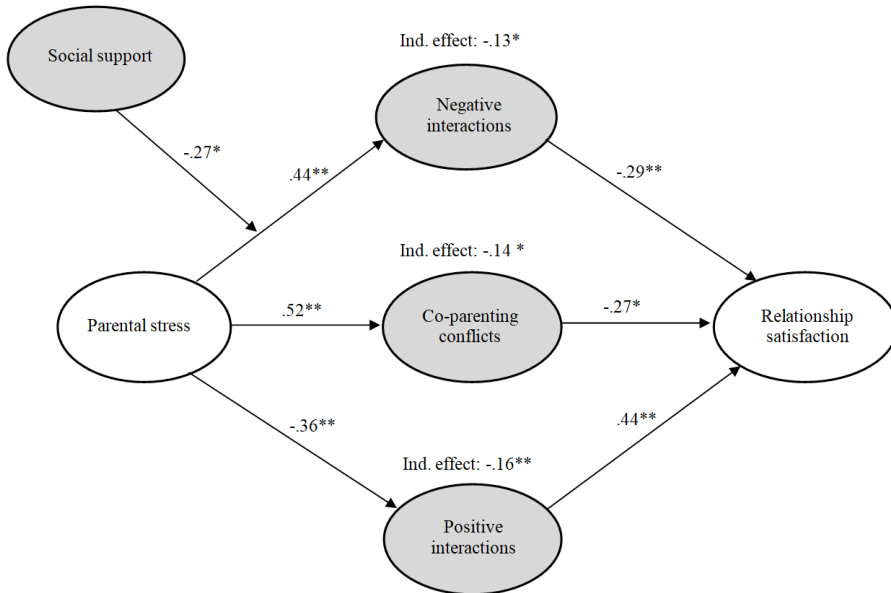
< .01) with results on the frequency of positive interactions scale, which indicates that partners who had higher levels of stress spent less time with their partner in pleasant activities. When it comes to negative interactions, they were positively correlated with parental stress ($r = .30, p < .01$). Negative interactions were more frequent in partners who had higher levels of parental stress. They were also correlated with the support received from friends and family, with the correlation being negative and moderate ($r = -.50, p < .01$). Parents who had higher levels of parental stress perceived less support from friends and family. On the contrary, results on the scale of negative interactions were moderately negatively correlated with results on the scale of positive interactions ($r = -.41, p < .01$), meaning parents who demonstrated more affection and interest in their partner had fewer negative interactions in their relationship, e.g. impatience, boredom or dominance in a conversation. A statistically significant and moderately positive correlation was determined between results on the positive interactions scale and results on the family and friends' support scale ($r = .35, p < .01$). Receiving frequent support from family and friends was associated with more positive interactions in their relationship. The correlation between results on the negative interactions scale and family and friends' support was $r = -.28, p < .01$. Thus, partners who perceived less support from family and friends also perceived more negative interactions in a relationship with their partner.

The results on the co-parenting conflicts scale were negatively correlated with relationship satisfaction ($r = -.63, p < .01$). Partners who had more disputes concerning the child's upbringing were less satisfied with their partner relationship. Parental stress was also negatively correlated with relationship satisfaction ($r = -.36, p < .01$). If they had higher levels of parental stress, partners perceived their relationship as less satisfying. On the contrary, partners who perceived more positive interactions in their relationship were more satisfied with it. The correlation between those two scales was $r = .70, p < .01$. Partners who spent their time talking, laughing together, or going out and enjoying themselves had higher chances of perceiving their relationship as satisfying. Negative interactions were associated with a less satisfying relationship with the correlation being $r = -.07, p < .01$. Partners who perceived more support from friends and family also viewed their relationship as more satisfying ($r = .42, p < .01$).

The results of the path analysis are summarized in Figure 1. We tested a model with parental stress as a predictor, positive/negative interactions and co-parenting conflicts as mediators, social support as a moderator, and relationship satisfaction as the dependent variable. The model demonstrated

a good fit and accounted for 66.30% of the variance of relationship satisfaction.

Figure 1 – Path model predicting relationship satisfaction ($N = 89$)



Note: Overall model fit: $\chi^2 (df) = 7.32 (4)$; $p > .05$; $CFI = .98$; $TLI = .93$; $SRMR = .01$. Standardized parameter estimates are shown.

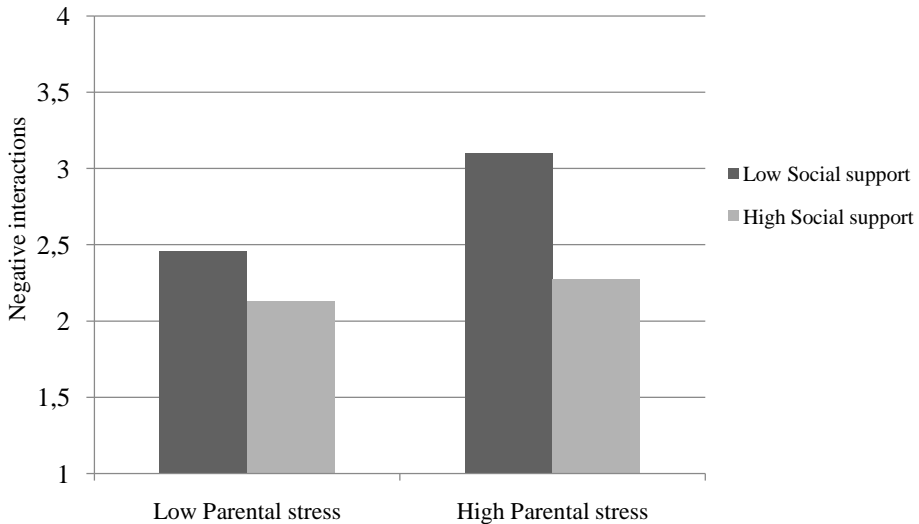
** = $p < .01$; * = $p < .05$.

As shown in Figure 1, parental stress had a significant indirect effect on relationship satisfaction via three paths. Higher parental stress was related to *more negative couple interactions*, *more co-parenting conflicts* and *less positive couple interactions*, which were all associated with *less relationship satisfaction*. The strongest indirect effect was via (less) positive interactions ($-.16$, $p < .01$), next through (more) co-parenting conflicts ($-.14$, $p < .05$), and finally via (more) negative interactions ($-.13$, $p < .05$). All three values ($-.13$ to $-.16$) indicated a *medium-size* indirect effect (Preacher & Kelley, 2011).

There was also a significant moderating effect of social support on the association between parental stress and negative interactions ($-.27$, $p < .05$). The moderating effect is shown in Figure 2. As is clear from Figure 2, couples with a weak social support and high parental stress displayed more negative interactions than couples with a weak social support and low parental stress. Interestingly, such a difference in negative interactions for

couples with a strong social support was not substantial. A value of .27 indicated a *large-size* moderating effect (Preacher & Kelley, 2011).

Figure 2 – Moderating effect of social support on the association between parental stress and negative couple interactions ($N = 89$)



5. Discussion

The theoretical background of this study was Bodemann's stress-divorce-model (SDM; Bodemann, 1995), which explains the impact of minor everyday stressors on the functioning of couples' relationship. The results of our study were in accordance with the SDM because they indicated spillover of stressors from one domain into another. Higher parental stress was related to more negative couple interactions, more co-parenting conflicts, and less positive couple interactions, which were all associated with less relationship satisfaction. From the family system approach, the spillover occurs more often in the context of higher stress because individuals have fewer resources for isolating negative effects of tension and behaviors, as well as negative emotions originating from one domain and being transferred to another one (Hartley *et al.*, 2018). The results were also in accordance with cross-sectional studies showing that global marital satisfaction was negatively associated with the global level of parenting stress (e.g. Hartley *et al.*, 2011). In line with this, our results showed that couples who had higher levels of parental stress perceived their relationship as less satisfying and

spent less time with their partner doing pleasant activities. Moreover, couples who had more negative interactions, such as arguments, criticism, yelling, or withdrawal, as well as couples who had more disputes concerning the child's upbringing, were less satisfied with their relationship. Lower parental stress was, in contrast, associated with more positive interactions, such as giving compliments, showing interest in the partner's problems, laughing together, or going out and enjoying themselves.

Parents of children with ASD report a higher level of parental stress and poorer psychological well-being compared to parents of children with other types of disabilities, as well as parents of typically developing children (e.g. Hartley, Selzter, Head, & Abbeduto, 2012). Not only are stress levels in parents of children with ASD high, but they are also stable over time (Lecavalier, Leone, & Wiltz, 2006). Data suggest that more than three-quarters of children with ASD require ongoing parental support due to cognitive and/or adaptive difficulties (Volkmar & Pauls, 2003). In addition, because children with ASD have difficulties in social and emotional reciprocity, they have a hard time expressing their needs to parents, and parents receive poor or no feedback on their parenting behaviors. This can lead to feelings of diminished parenting competence, which is a key component of parenting stress (Abidin, 1983). In addition to the individual domains of child functioning mentioned above, it appears to be a combination of difficulties in multiple domains, i.e., the "pervasiveness" of the disorder – that contributes most to parenting stress (Karst & Van Hecke, 2012). Even though the results of our study showed a moderate level of parental stress, participants reported that they only rarely to sometimes had opposing attitudes towards their child's upbringing. Participants also reported that they rarely to sometimes engaged in conflicts during the discussion on their parental decisions. Parents who had more disagreements when it comes to the upbringing of their child also had more negative interactions. This result was in accordance with Hartley and colleagues' (Hartley *et al.*, 2018) study who reported that a day with fewer positive marital interactions was related to a more stressful parenting day for mothers of children with ASD.

Some authors argue that social support is a type of coping mechanism that has been recognized as a buffer against stress (Bailey, Wolfe, & Wolfe, 1994; Dunn *et al.*, 2001). Our study showed that the partners who perceived more support from friends and family also had more satisfying views on their relationship. Results also showed a significant moderating effect of social support on the association between parental stress and negative

interactions: couples with a weak social support and high parental stress displayed more negative interactions than couples with a weak social support and low parental stress. In contrast, such a difference in negative interactions for couples *with strong social support was not relevant*. Interestingly, it has been shown that social support does not endorse positive interactions and the reduction of co-parenting conflicts. A possible explanation could be that the nature of the support which parents receive from family and friends is such that it unbinds resources that support parent self-regulation, which furthermore helps avoid couples' conflicts. But this type of support could not affect positive parental interactions (e.g. intimacy) or reduce conflicts concerning children's upbringing. These processes could, instead, be more dependent on parental personality traits. In accordance, Dunn and collaborators indicate that social support may be moderated by personality factors, such as external locus of control (Dunn *et al.*, 2001).

Furthermore, some authors (Quittner, Glueckauf, & Jackson, 1990; Karst & Van Hecke, 2012) indicate that persistent parenting stress is associated with a lower perception of social support; hence parents of children with ASD may not be fully aware of all the resources available to them. Thus, they may not use those resources that would help them to reinforce positive interactions and reduce co-parenting conflicts. It is also possible that, due to problems with the child's independence, parents lack time for social contact with friends and relatives. Social contact is also limited because many parents (especially mothers) do not work. Research shows that parents of children with ASD are more likely than parents of typically developing children to have mental health problems, such as depression, which also leads to reduced contact with the environment (Singer, 2006). Socialization is also affected by the child's limited ability to interact with peers due to difficulties in verbal and nonverbal communication, sensory sensitivity, and challenging behaviors (e.g. Schaaf, Toth-Cohen, Johnson, Outten, & Benevides, 2011). All of this can contribute to the social isolation of the family of children with ASD, which can have several negative consequences, especially in terms of reduced emotional and instrumental social support from the environment. These hypotheses should be examined in future studies.

Our research presented some limitations, which should be highlighted. Firstly, it consisted in a correlational study, measured at a one-time point, so it was not possible to determine a causal relationship between the variables. For example, we could assume both the effect of parental stress on marital interactions, as well as the effect of marital interactions on perceiving

parental stress. To this end, Hartley and colleagues (Hartley *et al.*, 2018) indicate that the spillover might flow from parenting to the marital domain and vice versa. Secondly, the sample was small and the sampling method was not probabilistic. Although we had a criterion sample, we recruited all our participants in the capital city of Zagreb. We approached participants through our colleagues, educational rehabilitators, who worked in institutions, such as kindergartens, elementary schools, centers for autism and special education centers, and who provided at least some form of short- or long-term support to parents. Furthermore, most of the participants in the study had a high school diploma or even a college degree. Three quarters of the participants had average or above average monthly household income. Although the children in the sample showed a common profile of children with ASD, it is clear from the description of the parents that this was a sample with above-average education and above-average income. Paired with the fact that we targeted parents who were already receiving some form of professional support, it is not surprising that our sample exhibited less parenting stress than is common among parents of children with autism. We would expect higher levels of parental stress and lower levels of estimated support in samples of parents not using professional services or parents coming from other parts of Croatia, particularly from the smaller, rural areas. The sample was also biased based on gender; therefore, conclusions should be made with caution. Thirdly, the study did not include some possible determinants of relationship satisfaction that could also moderate the relationship between the variables examined, such as work engagement or household labor division (e.g. Tonković Grabovac, Salkičević, & Lów, 2016).

Finally, how couple interactions affect relationship satisfaction depends on cultural norms (e.g. Rehman & Holtzworth-Munroe, 2007; Hilpert, Randall, Sorokowski, Atkins, Sorokowska, Ahmadi *et al.*, 2016). Therefore, the question whether findings on a Croatian sample could be applied to other cultural contexts remains open. To date, no other systematic research on relationships of parents of children with developmental disabilities in Croatia has been conducted, to the best of our knowledge. Moreover, there has only been one research on stress in relationships, and it has been conducted on a sample of unmarried couples under the age of 35 (Bahun & Huić, 2017). Cross-cultural studies on relationships in Croatia and other parts of the world are also scarce. In a cross-cultural study of determinants of relationship quality in Croatia and Iran (Tadinac, Bajoghli, Joshaghani, Hromatko, Jelic, & Kamenov, 2012), authors found that the highest

between-culture similarity was in couple interactions (especially positive interactions), while demographic variables, such as difference in age, income and education showed a between-culture difference. As the core of our investigated model is related to couple interactions, it might be assumed that cultural context would not be a substantial moderator of our results. However, as reported by Hilpert and colleagues in a study conducted in 35 nations in which dyadic coping was investigated as another variable related to stress in a relationship, it was observed that this variable had a stronger effect on marital satisfaction in East European nations than in most other nations (Hilpert *et al.*, 2016). Therefore, to make assumptions on the cultural similarities (and possible differences) in investigated associations between the variables, more research must be carried out.

In conclusion, parenting children with ASD is obviously a challenging and often stressful process with a high risk to affect the quality of couples' relationships. There is still a lack of research in this field. Evidence-based knowledge could have important implications for professional work and the creation of support services to families of children with ASD. Historically, children with disabilities have been at the center of professional work and working with families has been treated as complementary. The birth of a child with a disability is experienced as a crisis leading to family breakdown, and the role of professionals has been focused thus far on the teaching methods and techniques of working with children with disabilities (Turnbull & Turnbull, 2002). Today it is known that the family is a complex social system with unique features and needs and, as such, it is unavoidable in the center of attention of experts. Such a family-centered approach increases parents' well-being and satisfaction while decreasing parents' stress, and also encourages child development (King, King, Rosenbaum, & Goffing, 1999). A very important part of family support is, surely, education on the needs and approaches in raising children with disabilities, but it is equally important to support the family, especially parents, to preserve the quality and satisfaction with their intimate relationships. According to Derguy and collaborators, parents of children with ASD emphasized the need for material resources, information and educational guidance, while prioritizing the need for emotional and social support (Derguy, Michel, M'bailara, Roux, & Bouvard, 2015). These findings are important to consider while planning support services for families of children with ASD.

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