Journal of Child and Family Studies
https://doi.org/10.1007/s10826-023-02702-0

ORIGINAL PAPER

Parents' Stress, Parental Burnout, and Parenting Behavior during the COVID-19 Pandemic: Comparing Parents of Children with and without Complex Care Needs

Eline N. Desimpelaere[1] · Bart Soenens[2] · Peter Prinzie[3] · Joachim Waterschoot[2] · Maarten Vansteenkiste[2] · Sofie Morbée[2] · Charlotte Schrooyen[2] · Sarah S. W. De Pauw[1]

Accepted: 6 October 2023

Abstract

Parental burnout emerges as a response to chronic and overwhelming parenting stress and is related to dysfunctional parenting practices, such as neglectful or violent behavior. Grounded in Self-Determination Theory, the current study aims to evaluate parenting stress as an antecedent and the more general quality of parenting as an outcome of parental burnout. This objective is tackled within the context of the COVID-19 pandemic, which posed major challenges to parents, especially to those raising children with complex care needs (CCN; i.e., an intellectual and/or physical disability, and/or behavioral and/or emotional problems). Therefore, this study explores mean-level group differences in parenting stress, parental burnout, and parenting behaviors between parents raising children with and without CCN, and tests whether associations between these variables are similar for both groups of parents. A group of 506 parents (88% mothers, $M_{age} = 44$ years) participated in a widespread online survey during the first lockdown in Belgium. Based on mean-level differences, parents of children with CCN reported substantially higher levels of parenting stress and parental burnout but scored similarly on the assessed parenting behaviors. Multigroup structural equation models showed that in both groups, parenting stress was related positively to parental burnout which, in turn, was related to less autonomy-supportive and responsive parenting and to more psychologically controlling parenting. Although raising a child with CCN may be a risk factor for increased parental stress and burnout, the functional role of these parental experiences in the quality of parenting appears to be similar across both groups of parents.

Keywords Parenting stress · Parental burnout · Parenting behaviors · Complex care needs · COVID-19

Highlights

- This study examines associations between parenting stress, parental burnout, and parenting behaviors during COVID-19.
- Parenting stress positively related to parental burnout which, in turn, related to less need-supportive and more need-thwarting parenting.
- Although parents of children with CCN experienced more parental stress and burnout, they did not display lower quality of parenting.
- The role of parental stress and burnout in the quality of parenting was similar across parents of children with and without CCN.

✉ Eline N. Desimpelaere
Eline.Desimpelaere@UGent.be

[1] Faculty of Psychology and Educational Sciences, Department of Special Needs Education, Ghent University, Henri Dunantlaan 1, B-9000 Ghent, Belgium

[2] Faculty of Psychology and Educational Sciences, Department of Developmental, Personality and Social Psychology, Ghent University, Henri Dunantlaan 2, B-9000 Ghent, Belgium

[3] Department of Psychology, Education & Child Studies, Erasmus University Rotterdam, Burgemeester Oudlaan 50, 3062 Rotterdam, the Netherlands

Published online: 19 October 2023

Many parents consider parenthood as one of the most enjoyable and gratifying roles in adult life. Yet, parenting can also be experienced as very stressful and challenging (Nelson et al., 2014). Whereas most parents manage to keep the energy-enhancing and energy-draining aspects of parenting in balance, for some the demands of parenting outweigh their resources. If this happens for a prolonged period, this depletes parents' flexible adaptation to parenting stressors, a process that may lead to 'parental burnout' (Mikolajczak & Roskam, 2018). Parental burnout emerges as a response to chronic and overwhelming parenting stress and is particularly characterized by intense exhaustion in the parental role (Mikolajczak et al., 2019; Roskam et al., 2018). Recent research shows that parental burnout is related to specific dysfunctional parenting practices, such as neglect or violent behavior (Mikolajczak, Brianda, et al., 2018; Schittek et al., 2023). The question remains, however, to what extent parental burnout is associated with the more general quality of parenting, as reflected in the degree to which parents support or thwart their child(ren)'s basic psychological needs, based on the premises of the Self-Determination Theory (Ryan & Deci, 2017; Soenens et al., 2017).

In periods characterized by uncertainty and demands for multi-tasking, such as during the COVID-19 pandemic, experiences of burden and stress may surface more easily (Prime et al., 2020). For many parents, the pandemic meant more than closed schools and daycares, and a temporary obligation to stay at home with their child(ren). This period meant balancing childcare and schoolwork with full-time jobs and a huge loss of support networks, co-caregivers, and leisure activities (Lebow, 2020). Even though this quarantine was a blessing for some parents who suddenly felt less rushed and enjoyed the extra amount of quality time with their child(ren) (Evans et al., 2020; Le Vigouroux et al., 2022), emerging research indicates that this period posed major challenges to family life and placed many parents on the brink (e.g., Adams et al., 2021; Brown et al., 2020; Marchetti et al., 2020; Pierce et al., 2020).

During these times of health crisis, parents raising children with complex care needs (CCN), such as children with an intellectual and/or physical disability, and/or behavioral and/or emotional problems, faced even greater challenges compared to parents raising children without CCN (Willner et al., 2020), given their common reliance on professionals, health care, informal support, and community-based services (Cacioppo et al., 2021; Neece et al., 2020). For most, therapies or treatments could no longer be carried out or were replaced by online alternatives. These parents suddenly had to undertake even more tasks of childcare, training, and learning assistance (Hochman et al., 2022). Children with CCN also showed more adaptation difficulties, leading to more emotional and behavioral problems in these families (Asbury et al., 2021). Even outside pandemic times, a wide literature suggests that having a child with CCN is associated with higher levels of parenting stress (e.g., Craig et al., 2016; Gupta, 2007; Hayes & Watson, 2013; Valicenti-McDermott et al., 2015). However, very few studies have evaluated to what extent this increased stress leads to feelings of parental burnout, and how this relates to these parents' quality of parenting. This study aims to examine the interplay between parenting stress, parental burnout, and parenting quality in and across parents of children with and without CCN (Fig. 1), in the context of the COVID-19 pandemic.

From Parenting Stress to Parental Burnout

For most parents, parenting stress appears to be a perfectly normal, transient, and dynamic phenomenon, waxing and waning across time (Deater-Deckard & Panneton, 2017; Nomaguchi & Milkie, 2020). Yet, a relatively recent field of research suggests that about 5% of parents (up to 9% in some Western countries) persistently experience excessive levels of parenting stress (Roskam et al., 2021). Recognition now grows that, just as prolonged exposure to overwhelming stress in the work domain may lead to professional burnout, prolonged exposure to excessive stress in the domain of parenting may lead to parental burnout (Mikolajczak et al., 2018).

Research shows that parental burnout manifests through four key features (Mikolajczak et al., 2019; Roskam et al., 2018). The first and most salient aspect is exhaustion in the parenting role. Parents feel drained and tired when they get up in the morning and have to spend another day with their child(ren). They feel so run down by parenting that just thinking about their role as parents makes them feel like they have reached the end of their tether. Second, as a result, parents start to emotionally distance themselves from their child(ren). Parent-child interactions get limited to functional aspects at the expense of emotional aspects, which makes

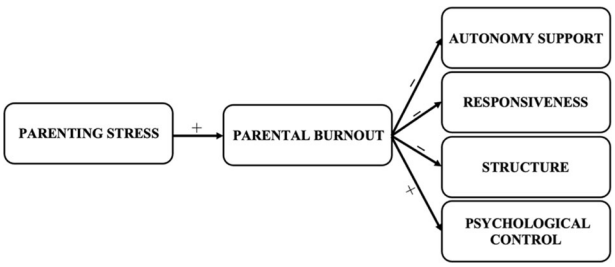

Fig. 1 Hypothesized model of the relations among parenting stress, parental burnout and the four parenting behavior dimensions for both groups. Solid lines represent the paths assumed in our model, with parenting stress considered as an antecedent and parenting behaviors as outcomes of parental burnout

parents less involved in the parent-child relationship. Third, parents no longer feel they are "good parents" and no longer enjoy spending time with their child(ren). They feel like they can't cope as a parent and feel fed up with parenting. Fourth, parents typically experience a contrast between the parents they were, they would like to be, and they have become, often resulting in feelings of guilt and shame (Hubert & Aujoulat, 2018; Roskam & Mikolajczak, 2021).

Even though it is generally assumed that parental burnout originates from very high and enduring levels of parenting stress, only a handful of studies examined the associations between parenting stress and parental burnout. A few cross-sectional studies generally concluded that even though significant relations between these concepts exist, parental burnout goes still beyond ordinary parenting stress (Kawamoto et al., 2018; Lebert-Charron et al., 2018; Roskam et al., 2017; van Bakel et al., 2018). In addition, initial evidence suggests that parenting stress positively predicts parental burnout over time (Ping et al., 2022). Nevertheless, further research is necessary to enhance the understanding of this association. If parental burnout indeed stems from excessive parenting stress, this study might reveal a strong (but not perfect) association between both sets of experiences.

Parental Burnout and Quality of Parenting

In addition to evaluating parenting stress as an antecedent, this study also examines the repercussions of parental burnout on the general quality of parenting. To date, research has shown that parental burnout has not only a significant impact on parents' own adjustment (e.g., more escape ideations) and their partner relationship (e.g., more couple conflicts), but also on the mental health of the child(ren) (Mikolajczak et al., 2019). Regarding the latter, recent studies reported that parents with parental burnout are more likely to engage in rather extreme and harsh parenting behaviors, such as neglect and violent behavior (Mikolajczak et al., 2018). The association with these dysfunctional parenting practices remains significant even after controlling for variables such as parents' educational level, income, and addiction. Although these findings are informative, still many questions linger about the associations with less extreme parenting practices and the more subtle manifestations of parental burnout in parents' parenting behaviors.

To better understand the role of parental burnout in parents' general quality of parenting, this study relies on Self-Determination Theory (SDT; Ryan & Deci, 2017), a broad theory on motivation and social development that is applied increasingly to research on parenting (Joussemet et al., 2008; Soenens et al., 2017, 2019). This macro-level theory states that each individual is equipped with three basic psychological needs (i.e., need for autonomy, relatedness, and competence) that require fulfillment for psychological growth, integrity, and well-being (Deci & Ryan, 2000; Vansteenkiste et al., 2020). According to SDT, parents can engage either in parenting strategies that support the child's needs, thereby fostering well-being and psychosocial adjustment, or in more need-thwarting parenting behaviors, that increase the risk for ill-being and psychopathology (Soenens et al., 2017). Specifically, SDT distinguishes between three dimensions of need-supportive parenting that each appeal primarily (but not exclusively) to one of the three basic psychological needs. A first dimension is autonomy support, which refers to parenting behavior that enhances the child's volitional functioning and involves practices such as providing choices or showing an active interest in the child's mental world (Joussemet et al., 2008; Soenens et al., 2007, 2017). A second dimension is responsiveness, referring to parenting behaviors that express parents' care and love for the child and reflect their desire to support their child (Davidov & Grusec, 2006). A third dimension is the provision of structure, including parenting practices that foster the child's sense of competence by providing clear communication and consistent guidelines (Soenens et al., 2017). These need-supportive dimensions of parenting can be contrasted with more need-thwarting dimensions, the most commonly studied is psychologically controlling parenting. Psychological control can be defined as intrusive parenting behavior that forces the child to think or feel in specific ways, by using insidious strategies such as guilt induction or shaming (Grolnick & Pomerantz, 2009; Soenens & Vansteenkiste, 2010).

Despite the troubling association between parental burnout and (extremely) dysfunctional parenting behaviors (Mikolajczak et al., 2018), research on the association with parents' general quality of parenting is still in its infancy. One recent study found that parental burnout is associated with authoritarian parenting, a parenting style that is mainly a combination of low autonomy support and responsiveness and high psychological control (Mikkonen et al., 2022). Although a few studies suggest that parenting style predicts parental burnout (Mikolajczak et al., 2018; Ping et al., 2022), the opposite direction of effects remains understudied.

To evaluate parenting quality as an outcome of parental burnout, we rely on SDT to provide a conceptually strong, well-validated, and balanced perspective that captures both adaptive (i.e., autonomy support, responsiveness, and structure) and maladaptive (i.e., psychological control) dimensions of parenting. Because engagement in need-supportive parenting requires mental space and energy (van der Kaap-Deeder et al., 2019), we hypothesize that higher levels of parental burnout will be associated with less need-supportive parenting behaviors. Parents experiencing more parental

burnout are indeed mentally drained and out of energy, increasing their risk to engage in more need-thwarting parenting behavior (i.e., psychological control) when encountering difficulties during parent-child interactions (Van der Kaap-Deeder et al., 2019). This need-thwarting behavior would then represent a desperate attempt to provide a quick solution to the problem at hand. These hypothesized directions of effects between parenting stress, parental burnout, and parenting dimensions are depicted in Fig. 1.

Parenting a Child with Complex Care Needs

To date, it remains unclear to what extent this presumed role of parenting stress and parental burnout in parents' quality of parenting is similar across parents of children with and without CCN. Because of the relatively recent scientific interest in parental burnout, there is a significant lack of research examining this interplay among parents raising a child with CCN. Scholars, however, have argued that parents raising a child with CCN may be at elevated risk for parental burnout due to the extra care, time, attention, and patience the child requires (Gérain & Zech, 2018; Kwiatkowski & Sekulowicz, 2017; Lindström et al., 2011; Mikolajczak et al., 2018). Indeed, decades of research among parents of children with CCN convincingly demonstrated that these parents are particularly vulnerable to parenting stress compared to parents of neurotypically developing children (e.g., Craig et al., 2016; Gupta, 2007). One important question remains to what extent this increased vulnerability relates to parental burnout and the quality of parenting, and whether this interplay differs from parents raising children without CCN. To address this, we examine both mean-level differences and structural relations between these variables across both groups of parents raising children with and without CCN.

Due to the unique challenges parents face when raising a child with CCN, it is suggested that these parents may be more vulnerable to relying on dysfunctional parenting behaviors in response to stress, compared to parents of children without CCN (Blacher et al., 2013; Heinonen & Ellonen, 2013; Hibbard & Desch, 2007; Pinquart, 2013). If this were true, we can hypothesize a lower quality of parenting behavior at the mean-level and expect the associations between parenting stress, parental burnout, and parenting behaviors to be more pronounced among parents raising a child with CCN. However, in sharp contrast, a recent cross-sectional study revealed only modest mean-level differences in parenting behaviors (De Clercq et al., 2019). Specifically, both groups of parents raising children with or without CCN reported fairly high levels of responsiveness and autonomy support, and low levels of psychological control. Nevertheless, these between-group differences yielded intriguing insights into disability-specific aspects of parenting behavior. For instance, parents of children with cerebral palsy (i.e., a physical disability) reported slightly higher levels of responsiveness compared to parents raising children without CCN, which could indicate an intense parent-child relationship resulting from their child's need for physical support (De Clercq et al., 2019; Dieleman et al., 2019; Whittingham et al., 2013). In addition, some studies demonstrate that parents raising children with autism exhibit more controlling behaviors (i.e., less autonomy support) than parents of children without CCN due to the challenges in social interaction and communication and the need for predictability in children with autism (Blacher et al., 2013; Ku et al., 2019). Overall, these mean-level group differences are rather limited in terms of effect size, and it is becoming increasingly clear that there is more within-group heterogeneity than between-group differences in terms of parenting behaviors (Blacher et al., 2013; Hodapp et al., 2019; Ventola et al., 2017).

Moreover, in spite of the limited mean-level group differences in parenting behaviors, increasing evidence demonstrates that need-supportive parenting is equally important for children with and without CCN (e.g., Aran et al., 2007; Brenning et al., 2015; Dieleman et al., 2020; Soenens et al., 2017). As such, in both parents raising children with or without CCN, need-supportive parenting behaviors are associated with greater psychological strengths in the child (e.g., Reutebuch et al., 2015; Roth et al. 2009), whereas need-thwarting parenting is linked to increased internalizing and externalizing problems in the child (De Clercq et al., 2019; Pinquart, 2017). Given the importance of these parenting behaviors for the well-being and development of both children with and without CCN, a better understanding of the factors that shape these parenting behaviors in both parent groups is crucial. Although one study demonstrated that the associations between the emotional quality of the family system (which is closely linked to parental stress and burnout) and parenting behaviors appear to be very similar between parents of children with and without CCN (De Clercq et al., 2022), research comparing the structural relations between parents' stress, burnout, and behaviors between both groups is essentially lacking to date.

The Present Study

Using data collected during the COVID-19 pandemic in Belgium, this study examines relations between parenting stress, parental burnout, and parenting behaviors, thereby comparing parents raising children with or without CCN. As a first aim, and for descriptive purposes, we explore mean-level

group differences to inspect whether parents of children with CCN experienced higher levels of parenting stress and parental burnout during the lockdown, in comparison to parents of children without CCN. We also test for differences in terms of parenting behaviors (Aim 1). The second aim of this study is to examine whether parenting stress relates to parental burnout and parenting behaviors in a sequential and structural way (Aim 2; see Fig. 1). At last, we test whether the relations between these study variables are similar in both parents of children with and without CCN (Aim 3).

Method

Procedure and Participants

From the end of March to mid-May 2020, the Belgian government imposed a set of measures to limit the spread of the coronavirus, including a strict stay-at-home lockdown with far-reaching implications. During this period, daycares, schools, nonessential shops, and catering facilities were closed. People had to avoid contact with others as much as possible and were only allowed to leave their homes for essential activities, such as grocery shopping, a doctor visit, or working in an essential sector. Between March 19th and April 15th 2020, a large-scale survey ($N = 19{,}269$) was conducted on the impact of the COVID-19 restrictions on the psychological well-being of Belgian (Dutch-speaking) citizens. Participants in this survey were recruited as an unselected sample via social media, newspapers, and organizations. After participants were introduced to the survey, informed consent was obtained, emphasizing that confidentiality was guaranteed and that participation was voluntary and could be discontinued at any time.

Before finishing, their interest to participate in follow-up research was assessed by the possibility of providing their email address. Here, it was clarified that this would only be used for research purposes and that they could unsubscribe at any time without negative consequences. A total of 4730 participants agreed to be contacted, of which 3092 actually participated in the follow-up between April 24th and May 6th 2020 (i.e., response rate of 65.37%). As part of this survey, participants were assigned to a particular survey depending on their sociodemographic profile. Those who reported having a child/children under the age of 18 living at home were provided with a questionnaire targeting parenting. Given the widespread and unique timing of this data collection, these data were used to address the research aims of the current study. The procedure to collect and analyze these data was approved by the Ethical Committee of Ghent University (nr. 2020/37).

In total, 506 participants ($M_{age} = 43.96$, $SD = 7.51$) completed the (follow-up) survey that was targeted at parents, containing 446 mothers (88.1%, $M_{age} = 43.13$, $SD = 7.29$) and 60 fathers (11.9%, $M_{age} = 50.17$, $SD = 6.15$). For the current study, parents were asked if they had at least one child with an intellectual and/or physical disability, and/or a behavioral and/or emotional problem. Of the total sample, 163 parents (32.2%) reported having at least one child with CCN. From this group, 74.23% of parents indicated an emotional problem, 51.53% reported a behavioral problem, 16.56% indicated an intellectual disability, and 12.88% reported a physical disability in at least one child in their family. In terms of family structure, 65.8% of the total sample indicated having an intact family with both parents present, 17.8% reported being a single parent, and 11.1% indicated being a blended family. Most parents in the survey had two children living at home during the last week (ranging from zero to five children, $Mdn = 2$). Regarding employment, 63.5% of the participants stated that they worked part-time or full-time at the time of the survey and 8.9% were currently unemployed due to COVID-19 restrictions. The remaining 27.6% were not working at the moment, searching for work, unable to work, or had a specific employment situation. 51.0% of the parents were partially or fully working from home. Only 1.19% of the data were missing, and Little's MCAR test indicated that missing values could be considered missing completely at random, $\chi^2(13) = 16.46$, $p = 0.225$.

Measures

All measures included in this study were administered in Dutch. For the sake of practicality and to avoid overburdening parents during the lockdown, brief measures were used (Allen et al., 2022). Unless indicated otherwise, all items were rated on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) and were prefixed by "During this COVID-19 crisis, …".

Parenting stress

Two items were used to measure parenting stress (Schrooyen et al., 2021). To ensure face validity, parents were simply asked to rate their amount of parental stress (i.e., "I experience stress in the upbringing/care of my child(ren)") and their need for professional help at that point in time ("I felt the need for help from experts because of problems in the upbringing/care of my child(ren)"; inter-item correlation of 0.51).

Parental burnout

To measure the concept of parental burnout, parents filled out three items from the Parental Burnout Assessment (Roskam et al., 2018). These items cover three key aspects

of parental burnout, including exhaustion (i.e., "I feel that I am really worn out as a parent"), feelings of being fed up (i.e., "I feel like I can't cope as a parent"), and contrast (i.e., "I have the impression that I am not myself anymore when I am interacting with my child(ren)"). Cronbach's alpha for this scale was 0.84.

Parenting behaviors

Parents' use of autonomy support was measured with four items of the Autonomy Support Scale from the Perceptions of Parents Scale (POPS; Grolnick et al., 1991; e.g., "During this period, I am usually willing to consider things from my child(ren)'s point of view"; $\alpha = 0.80$). Responsiveness was assessed by two items of the Child Report of Parent Behavior Inventory (CRPBI; Schaefer, 1965; e.g., "During this period, I am able to make my son/daughter feel better when he or she is upset"; inter-item correlation of 0.62). Further, the provision of structure in parents' behavior was assessed with three items of the Structure Scale of Parents as Social Context Questionnaire (PASCQ; Skinner et al., 1986; e.g., "During this period, I make it clear what will happen if my child(ren) doesn't (don't) follow the rules at home"; $\alpha = 0.57$). To measure psychological control, parents rated four items of the Psychological Control Scale (PCS; Barber, 1996; e.g., "During this period, I regularly show my disappointment in my child(ren)"; $\alpha = 0.66$).

Background variables

Parents were asked about their sociodemographic profile, such as their gender, age, if they had an intact two-parent family structure, and the number of children and young children (0–4 years) living in their family during the last week. Additionally, we requested participants to indicate if they worked from home at the time of the survey and to rate their financial burden on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) (i.e., "During the past week of the corona crisis, I was worried about my financial situation").

Plan of Analyses

Preliminary analyses

First, to investigate whether the background variables were associated with the current set of study variables (i.e., parenting stress, parental burnout, and the four parenting dimensions), multiple analyses were performed in SPSS (version 27). Specifically, MANOVAs and subsequent ANOVAs were conducted for the categorical variables (i.e., gender, intact family structure, telework) and Pearson correlations for the continuous variables (i.e., parental age, number of children, number of young children, financial burden). In addition, Pearson correlations between the study variables were calculated.

Second, a measurement model was tested with latent constructs representing the study variables by applying Structural Equation Modeling (SEM) using Mplus 8.7 software (Muthén & Muthén, 1998–2017). To take into account non-normality, we used robust maximum likelihood estimation (MLR). To evaluate the fit of this model, several indices were inspected: the comparative fit index (CFI; minimal threshold of 0.90), root mean square error of approximation (RMSEA; maximum threshold of 0.06), and standardized root mean square residual (SRMR; maximum threshold of 0.08; Hu & Bentler, 1999; Kline, 2005). Here, we also tested for measurement equivalence across the two groups of parents, thereby comparing an unconstrained measurement model with a model where factor loadings are equal across groups. When testing for measurement invariance, we used the difference-in-chi-square ($\Delta\chi^2$) and difference-in-CFI (ΔCFI) statistics. A non-significant $\Delta\chi^2$ and a ΔCFI value below 0.01 indicate that the difference between models is not significant (Cheung & Rensvold, 2002).

Primary analyses

To address the first aim of this study, we explored mean-level differences in the study variables across both parent groups raising children with or without CCN, by conducting a MANCOVA in SPSS (version 27) with CCN as the fixed variable, the background variables as covariates, and all study variables as dependent variables. Based on this MANCOVA, we performed subsequent ANOVAs for univariate analyses. The effect sizes on the outcomes were examined by inspecting the partial eta-squared values (η^2; 0.01 = small effect, 0.06 = medium effect, 0.14 = large effect; Cohen, 1992).

For the second aim, our hypothesized model (see Fig. 1) was tested by performing SEM in Mplus 8.7 (Muthén & Muthén, 1998–2017) using the MLR estimator. To evaluate the model fit, we inspected the CFI, RMSEA, and SRMR (Hu & Bentler, 1999; Kline, 2005). However, to examine whether the hypothesized model provides the best explanation for the data, we tested an alternative structural model by changing the placement of the study variables in the model. Because this is a comparison between two non-nested models, we relied on the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) fit indices, with lower values indicating better fit.

For the sake of the third aim, we examined to what extent the associations within this model are similar across both parent groups. Therefore, we performed multigroup SEM. We applied the Sattora-Bentler scaling correction (Satorra & Bentler, 1994) to adjust χ^2 in the χ^2-difference tests that were performed in our analyses to compare the models. Unstandardized coefficients were reported since the two

Table 1 Descriptives and Pearson correlations between the study variables

	M	*SD*	1	2	3	4	5	6	7	8	9
1. Parental age	43.96	7.51	–								
2. Number of children	1.92	0.95	0.03	–							
3. Number of young children	0.22	0.51	−0.51***	−0.01	–						
4. Financial burden	2.38	1.23	−0.04.	−0.07	0.02	–					
5. Parenting stress	2.47	1.09	−0.21***	0.06	0.15***	0.19***	–				
6. Parental burnout	2.09	0.10	−0.30***	0.04	0.25***	0.25***	0.73***	–			
7. Autonomy support	4.02	0.65	0.21***	0.09*	−0.19***	−0.14**	−0.20***	−0.31***	–		
8. Responsiveness	4.30	0.66	−0.09*	−0.08	0.07	0.02	−0.11*	−0.19***	0.36***	–	
9. Structure	3.57	0.71	−0.05	0.06	−0.07	−0.07	0.02	−0.07	0.17***	0.27***	–
10. Psychological control	2.45	0.69	0.08	0.09*	−0.13**	0.05	0.26***	0.21***	−0.11*	−0.14**	0.22***

*$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

groups had different covariate variances and these unstandardized coefficients were more likely to be invariant (Kline, 2005).

Results

Preliminary Analyses

Background variables

Before addressing the main research questions, we examined the role of the background variables. Multivariate effects were found for parents' gender, Wilk's $\lambda = 0.94$, $F(6, 493) = 5.31$, $p < 0.001$, $\eta^2 = 0.06$, having an intact family structure, Wilk's $\lambda = 0.97$, $F(6, 493) = 2.19$, $p = 0.04$, $\eta^2 = 0.03$, and doing telework, Wilk's $\lambda = 0.97$, $F(6, 493) = 2.51$, $p = 0.0.02$, $\eta^2 = 0.03$. Subsequent univariate analyses (see Supplementary Materials) revealed that mothers reported higher levels of parenting stress, parental burnout, responsiveness, and structure, in comparison to fathers. Further, parents who reported having an intact family structure experienced less parental burnout and used more structure in their parenting, compared to parents having no intact two-parent family structure. In addition, parents who were teleworking reported more autonomy support than parents who were not working from home.

Bivariate Pearson correlation analyses (presented in Table 1) showed that parental age was negatively related to parenting stress ($r = -0.21$, $p < 0.001$) and parental burnout ($r = -0.30$, $p < 0.001$), and positively related to autonomy support ($r = 0.21$, $p < 0.001$). In addition, the higher the number of young children in the family, the higher the levels of parenting stress ($r = 0.15$, $p < 0.001$) and parental burnout ($r = 0.25$, $p < 0.001$), and the lower the levels of autonomy support ($r = -0.19$, $p < 0.001$) and psychological control ($r = -0.13$, $p < 0.01$). Moreover, higher levels of perceived financial burden related to higher levels of parenting stress ($r = 0.19$, $p < 0.001$) and parental burnout ($r = 0.25$, $p < 0.001$) and lower levels of autonomy support ($r = -0.14$, $p < 0.01$). Therefore, we added parents' gender, family structure, teleworking, age, number of children and number of young children living in their family, and perceived financial burden as control variables when testing the equation models in further analyses.

Correlations between study variables

Table 1 also shows descriptive statistics and bivariate Pearson correlations between all study variables. As expected, parenting stress was strongly related to parental burnout ($r = 0.73$, $p < 0.001$). Additionally, sizeable yet moderate correlations with parenting behaviors were found, such that higher levels of parenting stress and parental burnout were significantly related to lower levels of autonomy support ($r = -0.20$ for parenting stress, and $r = -0.31$ for parental burnout, $ps < 0.001$) and responsiveness ($r = -0.11$, $p < 0.05$ for parenting stress, and $r = -0.19$, $p < 0.001$ for parental burnout), and higher levels of psychological control ($r = 0.26$ for parenting stress, $r = 0.21$ for parental burnout, $ps < 0.001$). In addition, correlational analyses showed that all four dimensions of parenting behavior were slightly to moderately interrelated (*r*s ranged from −0.14 to 0.36).

Measurement model

Next, we estimated and inspected the quality of the measurement model representing the study variables as latent variables. For each latent variable, we used the corresponding items as indicators. Estimation of this model yielded an acceptable fit (CFI = 0.90, SRMR = 0.06,

RMSEA = 0.07). However, based on the modification indices, we allowed the residuals of the items measuring autonomy support that are conceptually closely related to covary (i.e., items measuring attunement to the child's mental world: "I try to feel how my child(ren) see(s) things" (Ausup1) and "I consciously ask for my child(ren)'s opinion on certain issues" (Ausup2); and items assessing participation and dialog: "I let my child(ren) make their own decisions about certain things" (Ausup3) and "I give my child(ren) choice about certain things" (Ausup4); Soenens et al., 2017). After including these error covariances, the model fit improved considerably (ΔCFI = 0.06, CFI = 0.95, SRMR = 0.06, RMSEA = 0.05). The factor loadings of the indicators ranged from 0.37 to 0.86, all $ps < 0.001$ (see Supplementary Materials).

Prior to the multigroup comparisons, we examined measurement invariance (e.g., Dimitrov, 2010). Specifically, we compared the measurement model between the two groups of parents raising children without CCN and parents raising children with CCN. A fully unconstrained measurement model with free factor loadings was compared to a fully constrained model with equally fixed factor loadings. Results indicated that the constrained model fitted the data as well as the unconstrained model, ΔSBS-$\chi^2(8) = 10.95$, $p = 0.21$, ΔCFI = 0.001. This suggested that the factor loadings are equivalent across the two parent groups, allowing us to directly compare the relations between the latent variables.

Primary Analyses

Aim 1: Mean-level differences between parents of children with and without complex care needs

Results of the MANCOVA revealed a multivariate significant effect between the two groups of parents raising children with or without CCN, Wilk's $\lambda = 0.92$, $F(6, 486) = 7.56$, $p < 0.001$, $\eta^2 = 0.09$. As presented in Table 2, subsequent univariate analyses indicated higher levels of parenting stress and parental burnout in parents with at least one child with CCN compared to those raising children without CCN, with medium effect sizes (η^2 ranged from 0.04 to 0.06). Notably, no significant mean-level differences in parenting behaviors were found between the two groups. All parents (of children with and without CCN) reported fairly high levels of autonomy-supportive and responsive parenting behaviors, medium levels of structure, and relatively low levels of psychological control.

Aim 2: Examining structural relations between parents' stress, parental burnout, and behaviors

To examine the validity of our hypothesized model (Fig. 1), we performed structural equation modeling (SEM) with latent variables in the total sample by using Mplus 8.7 (Muthén & Muthén, 1998−2017). A structural model was built, in which we controlled for the effects of the background variables. This model (presented in Fig. 2) yielded a relatively acceptable fit to the data (CFI = 0.93, SRMR = 0.05, RMSEA = 0.05) and identified four significant associations. First, as expected, the direct effect between parenting stress and parental burnout showed that higher levels of parenting stress were highly and positively related to higher levels of parental burnout ($b = 0.91$, $p < 0.001$). Second, this model indicated that parental burnout was significantly associated with three of the parenting dimensions. Particularly, higher levels of parental burnout related to lower levels of autonomy-supportive ($b = -0.17$, $p < 0.001$) and responsive parenting ($b = -0.17$, $p < 0.001$) and to higher levels of controlling parenting ($b = 0.23$, $p < 0.001$). Only the relationship between parental burnout and structure was not corroborated in this study.

To gain more insight in the direction of effects in this hypothesized model, we also examined an alternative structural model in which parenting behavior was related to parenting stress, which in turn was associated with parental burnout. Estimation of this alternative model yielded fit indices that were in favor of our initially hypothesized model (AIC = 31,454.256 and BIC = 32,062.878 for the hypothesized model; AIC = 31,454.807 and BIC = 32,063.429 for the alternative model), as lower values for these fit indices indicate better fit. Although these findings lend support to the direction of effects assumed in our hypothesized model, the difference in fit indices was very small (even minimal). To truly clarify the direction of effects, longitudinal research is necessary.

Aim 3: Comparing the model across parents of children with and without complex care needs

To examine whether having (or not) a child with CCN moderated any of the structural relations in the hypothesized model, we conducted a multigroup analysis in Mplus 8.7

Table 2 Mean-level differences in the study variables between parents of children with and without CCN

	Parents of children without CCN ($n = 338$)		Parents of children with CCN ($n = 162$)			
	M	*SD*	*M*	*SD*	*F*	η^2
Parenting stress	2.30	1.03	2.84	1.12	29.07*	0.055
Parental burnout	1.96	0.93	2.36	1.08	18.89*	0.036
Autonomy support	4.00	0.68	4.05	0.57	0.56	0.001
Responsiveness	4.34	0.64	4.23	0.68	3.38	0.007
Structure	3.56	0.72	3.58	0.71	0.07	0.000
Psychological control	2.43	0.71	2.47	0.65	0.36	0.001

*$p < 0.001$

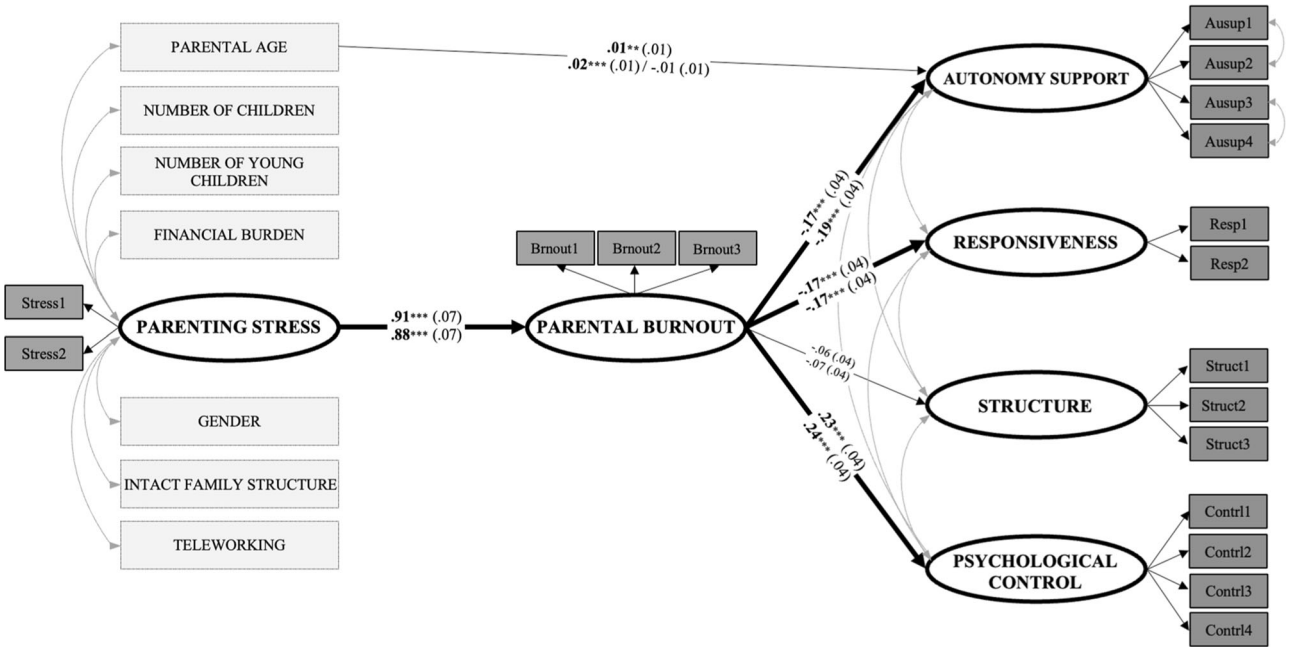

Fig. 2 Final structural model depicting associations between parenting stress, parental burnout, and parenting behaviors across parents raising children with and without CCN. *Note.* The six latent variables and their indicators are represented in respectively oval and square boxes. Unstandardized coefficients (standard errors) are reported on the arrows that indicate direct effects between parenting stress, parental burnout, and the parenting behavior dimensions. The coefficient (standard error) above each path refers to the model of the total sample, the coefficient (standard error) below refers to the multigroup model. Given that the effect of age on autonomy support varied across groups, different coefficients (standard errors) are represented below on this structural path, with the first referring to parents of children without CCN and the second to parents of children with CCN. $^{**}p < 0.01$, $^{***}=p < 0.001$

(Muthén & Muthén, 1998–2017). As the measurement model was shown to be invariant across the two groups of parents, we left the measurement model constrained (with equally fixed factor loadings between both groups) and added structural paths to this model. Analyses revealed a significant difference between the structural unconstrained model (CFI = 0.92, SRMR = 0.06, RMSEA = 0.05) and the fully constrained model (CFI = 0.92, SRMR = 0.07, RMSEA = 0.05), ΔSBS-$\chi^2(47) = 73.65$, $p = 0.01$. An exploration of the modification indices indicated that one structural path differed significantly across the two groups: the effect of age on autonomy support. Hence, we allowed this factor loading to vary between groups (0.02 in parents of children without CCN ($p < 0.001$), −0.01 in parents of children with CCN ($p = 0.13$)). This model showed a good model fit (CFI = 0.92, SRMR = 0.07, RMSEA = 0.05) and was applicable to both groups of parents, ΔSBS-$\chi^2(46) = 49.50$, $p = 0.34$.

In this final structural model (presented in Fig. 2), similar significant associations as in the total sample were held across both parent groups. Thus, for both parents raising children with and without CCN, parenting stress was positively related to parental burnout, which in turn, was associated with more dysfunctional parenting practices, specifically, less need-supportive (i.e., autonomy support and responsiveness) and more need-thwarting parenting behavior (i.e., psychological control).

Discussion

Although scholars have recently demonstrated an alarming association between parental burnout and specific dysfunctional parenting behaviors (Mikolajczak et al., 2018), there is hardly any research on the role of parental burnout in parents' general quality of parenting (Mikkonen et al., 2022). Especially in times such as the COVID-19 pandemic, a highly exceptional period resulting in wide variations in parents' adjustment (Evans et al., 2020; Janssen et al., 2020), examining the repercussions of parental burnout has become even more important. The primary aim of this study was to examine the associations between parenting stress, parental burnout, and parenting behaviors as conceptualized in SDT (Ryan & Deci, 2017). Second, we considered an important risk factor for increased levels of parenting stress and subsequent parental burnout: raising a child with CCN (Gupta, 2007; Mikolajczak et al., 2018).

The Strong Association between Parenting Stress And Parental Burnout

Because researchers increasingly agree that parental burnout develops in response to sustained exposure to parenting stress (Mikolajczak & Roskam, 2018), it is not surprising that the current study revealed a strong to very strong association

between these two variables. In fact, the association is so strong that one may wonder to what extent parental burnout and high levels of parenting stress are truly distinct. Is parental burnout really a qualitatively distinct condition that occurs as a result of excessive, long-term exposure to parenting stress? This latter assumption would support the findings of Brianda et al. (2020a, 2020b) that parents in early stages of parental burnout have increased hair cortisol secretion (which is an indicator of severe chronic stress), whereas this secretion is reduced in parents with the highest levels of parental burnout, suggesting a crash of the stress system. Therefore, further research is warranted to clarify the construct of parental burnout and to better understand its relation to parenting stress. An intensive longitudinal design with repeated assessments across a longer period, combined with biophysiological measures such as hair cortisol, would be ideal for this purpose.

The Adverse Effect of Parental Burnout on the Quality of Parenting

A second important finding of this study concerns the associations between parental burnout and parents' general quality of parenting, showing that parental burnout is related negatively to autonomy-supportive and responsive parenting, and positively to psychologically controlling parenting. This finding extends previous research showing that parental burnout is associated with extremely dysfunctional parenting practices, specifically, more neglectful and violent behavior towards the child(ren) (Mikolajczak et al., 2018). To the best of our knowledge, the present study is among the first to establish the relation between parental burnout and the general quality of parenting behavior, within the context of SDT (Ryan & Deci, 2017). Specifically, these novel and important findings lend support to the SDT-premise that parents' own psychological well-being substantially affects their parenting behavior.

In addition, the findings of this study are in line with previous SDT-based research suggesting that need-supportive parenting strategies require energy and vitality from the parent (van der Kaap-Deeder et al., 2015, 2019). More particularly, research has convincingly demonstrated that energy, which is fostered by need-satisfying experiences and depleted by need-frustrating experiences, is essential for engaging in need-supportive parenting behaviors, relating to the child in an open and responsive way, and being psychologically available (de Haan et al., 2013; van der Kaap-Deeder et al., 2019). Consistent with these studies, the findings of the present study show that parental burnout (which is characterized by completely running out of energy in the parental role) may jeopardize parents' capacity to support the needs of their child(ren) (i.e., the need for autonomy and relatedness), and may even result in more need-thwarting parenting (i.e., the use of psychological control). Considered through the lens of the SDT, which hypothesizes that need frustration and corresponding energy-depletion results in a more self-centered parental approach, we can assume that parents experiencing burnout may be more likely to engage in psychologically controlling parenting practices in a desperate attempt to reduce the task load and conserve some energy (de Haan et al., 2013; Mabbe et al., 2018). Although these significant associations do suggest that parental burnout has a negative impact on the overall quality of parenting, replication in longitudinal research is needed.

Such longitudinal research is also important to consider the possibility of bidirectional relations between parental experiences of stress and burnout and parenting behaviors. Indeed, it is very likely that not only do parents' need-related experiences affect their parenting behaviors, but that these behaviors, in turn, also affect parents' experiences and energy levels. For instance, when parents engage in psychologically controlling practices, they are more likely to experience distress or guilt afterwards. Moreover, children are likely to react negatively to parents' use of psychological control (e.g., with reactance), with these negative reactions contributing to further feelings of parental incompetence. These feelings may erode parents' energy levels and make them vulnerable to engaging again in more pressuring parenting on the next occasion (de Haan et al., 2013; van der Kaap-Deeder et al., 2019).

In contrast to this negative vicious cycle, a 'bright pathway' is equally plausible. That is, parents with a general tendency to act in an autonomy-supportive way could encourage their child(ren) to develop and thrive, thereby laying a foundation for a child's deep internalization of parental values and for a smooth parent-child dialog (Soenens et al., 2017). Parents would not have to constantly reiterate requests, while fostering a positive family climate and reducing the likelihood of conflicts with the child(ren) (van der Kaap-Deeder et al., 2015). As a result, a need-supportive parental approach may contribute to better parental adjustment through more adaptive behaviors in children. Additionally, research demonstrated that providing autonomy support directly contributes to experiences of need satisfaction and vitality (Deci et al., 2006; Mabbe et al., 2018). As such, need-supportive parents may even derive energy from the interactions with their child(ren), which could reduce parenting stress and protect them from developing parental burnout. Hence, although need-supportive parenting sometimes requires more effort and energy in the moment, it may be less stressful in the long run than controlling parenting. Moreover, since Ping and colleagues (2022) found initial evidence that parenting style predicts parental burnout over time, we can assume that there are reciprocal associations between parental burnout and parenting behaviors. Therefore, testing these associations from both a short- and long-term perspective may be an interesting avenue for future research.

Comparing Parents of Children with and without Complex Care Needs

Although the present study relied on a rather crude classification of parents raising children with and without CCN, it is among the first to investigate the role of having a child with CCN simultaneously in parenting stress, parental burnout, and the quality of parenting behavior. First, in terms of mean-level differences, the findings showed that parents of children with CCN reported higher levels of parenting stress and parental burnout during the COVID-19 pandemic. These findings are in line with studies conducted during non-pandemic times, showing higher levels of parental stress and a more stressed-out family climate among parents of children with CCN (e.g., Craig et al., 2016; De Clercq et al., 2022). Moreover, the results of our study support previous studies suggesting that these parents are more vulnerable to experience parental burnout (e.g., Gérain & Zech, 2018). Although the effect sizes of the differences between the two groups were of medium magnitude, they can still have practical significance. According to McCartney & Rosenthal (2000), the importance of effect sizes must be evaluated within the broader context of the phenomenon. Because parenting stress and parental burnout are not isolated events but form part of the foundation of daily parent-child interactions, focusing solely on these constructs at a single point in time risks underestimating their importance for both the parent and child development. Hence, the consistent pattern of mean-level differences observed in our study and in previous studies warrants careful consideration, as these findings emphasize the additional psychological burden experienced by parents of children with CCN and highlight the ongoing need for tailored support, not only during times of global crises but also in everyday life.

However, in contrast to the mean-level differences in parental stress and burnout, levels of parenting behaviors did not differ significantly between the two groups of parents. Consistent with previous research demonstrating modest group differences in parenting behaviors between parents of children with or without autism, cerebral palsy, or Down syndrome (De Clercq et al., 2019, 2022), the results of the present study showed that both groups reported fairly high levels of autonomy support and responsiveness, medium levels of structure and relatively low levels of psychological control. Thus, we can argue that, although parents of children with CCN may face diverse challenges in their parental role, this does not automatically lead to a lower quality of parenting. These results contradict the assumption that these parents might be more vulnerable to resort to dysfunctional parenting behaviors, compared to parents of children without CCN (Blacher et al., 2013; Heinonen & Ellonen, 2013; Pinquart, 2013). In this regard, and perhaps more importantly than the observed mean-level differences, our study revealed that the structural relations between parenting stress, parental burnout, and parenting behaviors generally held for parents of children with and without CCN. Specifically, in both groups, higher levels of parenting stress were related to higher levels of parental burnout, which in turn, were related to less need-supportive and more need-thwarting parenting behaviors. This is in line with the SDT-based assumption (Deci & Ryan, 2000) that parental need-based experiences (which are proximally involved in parental stress and burnout) play a universally important role in parenting behaviors (Dieleman et al., 2018, 2020, van der Kaap-Deeder et al., 2015).

Although most of these structural relations were consistent across the two groups of parents, the effect of parental age on autonomy support differed between groups. Whereas the association between parents' age and autonomy support was positive and significant for parents raising children without CCN, the association was negative but non-significant for parents raising children with CCN. This finding aligns with research conducted among general parent populations, showing that mean levels of parental autonomy support tend to remain stable or increase over time (Brenning et al., 2015; Vrolijk et al., 2020). However, there appears to be a slight deviation from this normative trend among parents of children with CCN. Although the association was not statistically significant, the absence of a positive association in this parent population between parents' age and their autonomy support could potentially be attributed to the circumstance that, as these parents age, their children's developmental progress might bring additional challenges (e.g., increased need for supervision or assistance). These challenges, in turn, may hinder parents' opportunities to provide age-appropriate autonomy support. As such, research in this parent population indicates that mean levels of autonomy support or positive parenting (involving autonomy support) can mildly decline over time (Blacher et al., 2013; Dieleman et al., 2017, 2021).

Despite this differential effect of one background variable, the functional role of parenting stress and parental burnout in the quality of parenting was found to be similar for both parent groups. Given that parents of children with CCN reported higher levels of parental stress and burnout, one may wonder why there were no corresponding mean-level differences in parenting behaviors. Possibly, additional sources of resilience (not measured in this study) may be present in parents of children with CCN that might strengthen their capacity to cope with the risks and thus act as a buffer against need-thwarting parenting behaviors. For instance, a handful of studies suggest that these parents become closer as a family and experience personal enrichment by their child with CCN, which might result in a shift in priorities, values, and views on life (Bayat, 2007; Dieleman et al., 2018, 2019; Povee et al., 2012). In addition, support from family, professionals, or other parents raising children with CCN has been extensively documented as a

source of resilience for these parents (e.g., Davis & Gavidia-Payne, 2009; Peer & Hillman, 2014).

Practical Implications

The present findings are relevant not only to theory but also to practice, as they underscore the importance of further examining the repercussions of parental burnout and tailoring early detection and parent support. First, our results suggest that prevention and interventions aimed at improving parents' parenting skills should not only target parenting behaviors but could be enriched by focusing on parents' experiences and energy in their parental role. As these experiences are fundamental determinants of parenting behaviors (van der Kaap-Deeder et al., 2015, 2019), intervention programs could contribute to higher quality of parenting by reducing parents' feelings of stress and burnout. Hence, since parental stress and burnout can be considered dynamic and changeable psychological variables, intervention efforts might help parents to rebalance their parental stressors and resources (Mikolajczak & Roskam, 2018) by encouraging them to invest more in need-satisfying and energizing activities (e.g., doing something with the child(ren) that they both enjoy) and teaching them to use strategies to overcome energy-draining experiences (i.e., need frustration). If parents learn to cope effectively with feelings of need frustration, this may reduce their levels of stress and burnout, and they may be less likely to respond in a need-thwarting way. Instead, they may become more available and responsive to the child's needs. Moreover, recent research indicates that providing a setting in which parents can share their parenting difficulties with someone who actively listens to them, significantly reduces their levels of parental burnout (Brianda et al., 2020). In this regard, professionals in pediatric primary care settings have an important position to listen carefully to parents in order to accurately assess their level of parental stress and burnout and to provide additional support if necessary. Of particular interest are parents of children with CCN, who have been shown to be more vulnerable to experiencing higher levels of parental stress and burnout. Although we do not have pre-pandemic data to compare with, our results suggest that parents of children with CCN had more psychological burden to bear during the lockdown. This emphasizes the need for tailored support in times of crisis and the importance of considering these families when responding to global emergencies.

Limitations and Directions for Future Research

When interpreting the current results, some limitations need to be taken into account. First, the cross-sectional design of the study does not allow for causal interpretations of the relations between parenting stress, parental burnout, and parenting behaviors. Therefore, a prospective longitudinal design is needed to determine the direction of effects and to test for reciprocal associations between these variables. Second, the generalizability of the findings is limited by the inclusion of a selective sample of participants and the reliance on mothers as the primary source of information. As such, parents who participated in this study were most likely to be relatively well-adjusted because they had the time and energy to complete an online survey during the demanding lockdown period. Future research should attempt to include more vulnerable families, by recruiting through parent support services or by conducting home visits. In addition, future research could benefit from including multiple informants, especially fathers, as prior research suggests that parental burnout in fathers is associated with more neglectful behavior toward the child(ren), compared to mothers experiencing parental burnout (Roskam & Mikolajczak, 2020). Third, the present study relied only on self-report measures and used a limited set of items to assess the variables. Future research would do well to use a multi-method approach or more comprehensive scales to replicate whether these relations also generalize to alternative measures of parenting stress, parental burnout, and parenting behaviors. Finally, the current study focused only on parenting stress as an antecedent and included only three of the four dimensions of parental burnout. To further improve our understanding of the antecedents and repercussions of parental burnout, future research should focus not only on parenting stress but also chart the effects of indicators that determine how parents cope with stress (e.g., parents' personality) and adopt a more elaborate investigation of all four dimensions of parental burnout. Although the present study provides valuable insight into the interplay between parenting stress, parental burnout, and the general quality of parenting, a more fine-grained insight into how each dimension of parental burnout relates to parenting stress and the quality of parenting could further advance this area of research.

Data Availability

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

Supplementary information The online version contains supplementary material available at https://doi.org/10.1007/s10826-023-02702-0.

Author Contributions J.W., M.V., S.M. and C.S. collected the data. E.D. executed the data analyses and wrote the main part of the paper. B.S. designed the study and collaborated thoroughly with the data analyses and writing of the paper. P.P. and S.D.P. assisted with the data analyses and collaborated in the writing of the manuscript. All authors collaborated in editing the final manuscript.

Funding This research was partly funded by a grant from the Fund for Scientific Research Flanders (FWO) awarded to Eline Desimpelaere (11F5122N). The data collection of this large-scale study was funded by a BOF grant received for COVID-19 related research rewarded to Maarten Vansteenkiste (BOF.COV.2020.0007.01).

Compliance with Ethical Standards

Conflict of interest The authors declare no competing interests.

Ethics approval The study was reviewed and approved by the ethics committee of the Faculty of Psychology and Educational Sciences at Ghent University, Belgium (nr. 2020/37).

Informed consent Informed consent was obtained from all individual participants included in the study.

References

Adams, E. L., Smith, D., Caccavale, L. J., & Bean, M. K. (2021). Parents are stressed! Patterns of parent stress across COVID-19. *Frontiers in Psychiatry*, *12*, 626456. https://doi.org/10.3389/fpsyt.2021.626456.

Allen, M. S., Iliescu, D., & Greiff, S. (2022). Single item measures in psychological science: A call to action. *European Journal of Psychological Assessment*, *38*(1), 1–5. https://doi.org/10.1027/1015-5759/a000699.

Aran, A., Shalev, R. S., Biran, G., & Gross-Tsur, V. (2007). Parenting style impacts on quality of life in children with cerebral palsy. *The Journal of Pediatrics*, *151*(1), 56–60. https://doi.org/10.1016/j.jpeds.2007.02.011.

Asbury, K., Fox, L., Deniz, E., Code, A., & Toseeb, U. (2021). How is COVID-19 affecting the mental health of children with special educational needs and disabilities and their families? *Journal of Autism and Developmental Disorders*, *51*, 1772–1780. https://doi.org/10.1007/s10803-020-04577-2.

Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development*, *67*, 3296–3319. https://doi.org/10.1111/j.1467-8624.1996.tb01915.

Bayat, M. (2007). Evidence of resilience in families of children with autism. *Journal of Intellectual Disability Research*, *51*, 702–714. https://doi.org/10.1111/j.1365-2788.2007.00960.x.

Blacher, J., Baker, B. L., & Kaladjian, A. (2013). Syndrome specificity and mother–child interactions: Examining positive and negative parenting across contexts and time. *Journal of Autism and Developmental Disorders*, *43*(4), 761–774. https://doi.org/10.1007/s10803-012-1605-x.

Brenning, K., Soenens, B., Van Petegem, S., & Vansteenkiste, M. (2015). Perceived maternal autonomy support and early adolescent emotion regulation: A longitudinal study. *Social Development*, *24*(3), 561–578. https://doi.org/10.1111/sode.12107.

Brianda, M. E., Roskam, I., & Mikolajczak, M. (2020a). Hair cortisol concentration as a biomarker of parental burnout. *Psychoneuroendocrinology*, *117*, 104681. https://doi.org/10.1016/j.psyneuen.2020.104681.

Brianda, M. E., Roskam, I., & Mikolajczak, M. (2020b). Psychoneuroendocrinology research is needed on parental burnout: A response to Walther, Walther, and Heald's comment on hair cortisol concentration as a biomarker of parental burnout. *Psychoneuroendocrinology*, *119*, 104786.

Brianda, M. E., Roskam, I., Gross, J. J., Franssen, A., Kapala, F., Gérard, F., & Mikolajczak, M. (2020). Treating parental burnout: Impact of two treatment modalities on burnout symptoms, emotions, hair cortisol, and parental neglect and violence. *Psychotherapy and Psychosomatics*, *89*(5), 330–332. https://doi.org/10.1159/000506354.

Brown, S. M., Doom, J. R., Lechuga-Peña, S., Watamura, S. E., & Koppels, T. (2020). Stress and parenting during the global COVID-19 pandemic. *Child Abuse & Neglect*, *110*(2), 104699. https://doi.org/10.1016/j.chiabu.2020.104699.

Cacioppo, M., Bouvier, S., Bailly, R., Houx, L., Lempereur, M., & Pons, C. (2021). Emerging health challenges for children with physical disabilities and their parents during the COVID-19 pandemic: The ECHO French survey. *Annals of Physical and Rehabilitation Medicine*, *64*(3), 101429. https://doi.org/10.1016/j.rehab.2020.08.001.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, *9*(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155.

Craig, F., Operto, F. F., De Giacomo, A., Margari, L., Frolli, A., Conson, M., Ivagnes, S., Monaco, M., & Margari, F. (2016). Parenting stress among parents of children with neurodevelopmental disorders. *Psychiatry Research*, *242*, 121–129. https://doi.org/10.1016/j.psychres.2016.05.016.

Davidov, M., & Grusec, J. E. (2006). Untangling the links of parental responsiveness to distress and warmth to child outcomes. *Child Development*, *77*(1), 44–58. https://doi.org/10.1111/j.1467-8624.2006.00855.

Davis, K., & Gavidia-Payne, S. (2009). The impact of child, family, and professional support characteristics on the quality of life in families of young children with disabilities. *Journal of Intellectual & Developmental Disability*, *34*, 153–162. https://doi.org/10.1080/13668250902874608.

Deater-Deckard, K., & Panneton, R. (2017). Unearthing the developmental and intergenerational dynamics of stress in parent and child functioning. In K. Deater-Deckard & R. Panneton (Eds.), *Parental Stress and Early Child Development: Adaptive and Maladaptive Outcomes* (pp. 1–11). Springer International Publishing. https://doi.org/10.1007/978-3-319-55376-4_1

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01.

Deci, E. L., La Guardia, J. G., Moller, A. C., Scheiner, M. J., & Ryan, R. M. (2006). On the benefits of giving as well as receiving autonomy support: Mutuality in close friendships. *Personality & Social Psychology Bulletin*, *32*(3), 313–327. https://doi.org/10.1177/0146167205282148.

De Clercq, L., Prinzie, P., Warreyn, P., Soenens, B., Dieleman, L. M., & De Pauw, S. S. W. (2022). Expressed emotion in families of children with and without autism spectrum disorder, cerebral palsy and Down syndrome: Relations with parenting stress and parenting behaviors. *Journal of Autism and Developmental Disorders*, *52*, 1789–1806. https://doi.org/10.1007/s10803-021-05075-9.

De Clercq, L., Van der Kaap-Deeder, J., Dieleman, L. M., Soenens, B., Prinzie, P., & De Pauw, S. S. W. (2019). Parenting and psychosocial development in youth with and without autism spectrum disorder, cerebral palsy, and Down syndrome: A cross-disability comparison. *Advances in Neurodevelopmental Disorders*, *3*(2), 220–234. https://doi.org/10.1007/s41252-019-00112-2.

de Haan, A. D., Soenens, B., Dekovic, M., & Prinzie, P. (2013). Effects of childhood aggression on parenting during adolescence: The role of parental psychological need satisfaction. *Journal of Clinical Child and Adolescent Psychology*, *42*, 393–404. https://doi.org/10.1080/15374416.2013.769171.

Dieleman, L. M., De Pauw, S. S., Soenens, B., Beyers, W., & Prinzie, P. (2017). Examining bidirectional relationships between parenting and child maladjustment in youth with autism spectrum disorder: A 9-year longitudinal study. *Development and Psychopathology*, *29*(4), 1199–1213. https://doi.org/10.1017/S0954579416001243.

Dieleman, L. M., Moyson, T., De Pauw, S. S. W., Prinzie, P., & Soenens, B. (2018). Parents' need related experiences and behaviors when raising a child with autism spectrum disorder. *Journal of Pediatric Nursing: Nursing Care of Children and Families*, *42*, 26–37. https://doi.org/10.1016/j.pedn.2018.06.005.

Dieleman, L. M., Soenens, B., Prinzie, P., De Clercq, L., & De Pauw, S. S. W. (2021). Parenting children with cerebral palsy: A longitudinal examination of the role of child and parent factors. *Exceptional Children*, *87*(3), 369–390. https://doi.org/10.1177/0014402920986462.

Dieleman, L. M., Soenens, B., Prinzie, P., De Clercq, L., Ortibus, E., & De Pauw, S. S. W. (2020). Daily parenting of children with cerebral palsy: The role of daily child behavior, parents' daily psychological needs, and mindful parenting. *Development and Psychopathology*, 1–17. https://doi.org/10.1017/S0954579419001688.

Dieleman, L. M., Van Vlaenderen, R., Prinzie, P., & De Pauw, S. S. W. (2019). Parents' need-related experiences when raising an adolescent with cerebral palsy. *Advances in Neurodevelopmental Disorders*, *3*(2), 204–219. https://doi.org/10.1007/s41252-019-00111-3.

Dimitrov, D. M. (2010). Testing for factorial invariance in the context of construct validation. *Measurement and Evaluation in Counseling and Development*, *43*(2), 121–149. https://doi.org/10.1177/0748175610373459.

Evans, S., Mikocka-Walus, A., Klas, A., Olive, L., Sciberras, E., Karantzas, G., & Westrupp, E. M. (2020). From "It has stopped our lives" to "Spending more time together has strengthened bonds": The varied experiences of Australian families during COVID-19. *Frontiers in Psychology*, *11*, 588667. https://doi.org/10.3389/fpsyg.2020.588667.

Gérain, P., & Zech, E. (2018). Does informal caregiving lead to parental burnout? Comparing parents having (or not) children with mental and physical issues. *Frontiers in Psychology*, *9*, 884 https://doi.org/10.3389/fpsyg.2018.00884.

Grolnick, W. S., & Pomerantz, E. M. (2009). Issues and challenges in studying parental control: Toward a new conceptualization. *Child Development Perspectives*, *3*, 165–170. https://doi.org/10.1111/j.1750-8606.2009.00099.x.

Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, *83*(4), 508–517.

Gupta, V. B. (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.

Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *43*(3), 629–642. https://doi.org/10.1007/s10803-012-1604-y.

Heinonen, A., & Ellonen, N. (2013). Are children with disabilities and long-term illnesses at increased risk of disciplinary violence? *Journal of Scandinavian Studies in Criminology and Crime Prevention*, *14*(2), 172–187. https://doi.org/10.1080/14043858.2013.794999.

Hibbard, R. A., & Desch, L. W. (2007). Maltreatment of children with disabilities. *Pediatrics*, *119*(5), 1018–1025. https://doi.org/10.1542/peds.2007-0565.

Hochman, Y., Shpigelman, C. N., Holler, R., & Werner, S. (2022). "Together in a pressure cooker": Parenting children with disabilities during the COVID-19 lockdown. *Disability and Health Journal*, *15*(3), 101273. https://doi.org/10.1016/j.dhjo.2022.101273.

Hodapp, R. M., Casale, E. G., & Sanderson, K. A. (2019). Parenting children with intellectual disabilities. In M. H. Bornstein (Ed.), *Handbook of Parenting: Children and Parenting* (pp. 565–596). Routledge/Taylor & Francis Group. https://doi.org/10.4324/9780429440847-17

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *1*(6), 1–55. https://doi.org/10.1080/10705519909540118.

Hubert, S., & Aujoulat, I. (2018). Parental burnout: When exhausted mothers open up. *Frontiers in Psychology*, *9*, 1021. https://doi.org/10.3389/fpsyg.2018.01021.

Janssen, L. H. C., Kullberg, M. J., Verkuil, B., van Zwieten, N., Wever, M. C. M., van Houtum, L. A. E. M., Wentholt, W. G. M., & Elzinga, B. M. (2020). Does the COVID-19 pandemic impact parents' and adolescents' well-being? An EMA-study on daily affect and parenting. *PLoS One*, *15*(10), e0240962. https://doi.org/10.1371/journal.pone.0240962.

Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspective on parenting. *Canadian Psychology*, *49*, 194–200. https://doi.org/10.1037/a0012754.

Kawamoto, T., Furutani, K., & Alimardani, M. (2018). Preliminary validation of Japanese version of the parental burnout inventory and its relationship with perfectionism. *Frontiers in Psychology*, *9*, 970. https://doi.org/10.3389/fpsyg.2018.00970.

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. Guilford Press.

Ku, B., Stinson, J. D., & MacDonald, M. (2019). Parental behavior comparisons between parents of children with autism spectrum disorder and parents of children without autism spectrum disorder: A meta-analysis. *Journal of Child and Family Studies*, *28*, 1445–1460. https://doi.org/10.1007/s10826-019-01412-w.

Kwiatkowski, P., & Sekulowicz, M. (2017). Examining the relationship of individual resources and burnout in mothers of children with disabilities. *International Journal of Special Education*, *32*(4), 823–841.

Le Vigouroux, S., Lebert-Charron, A., Wendland, J., Boujut, E., Scola, C., & Dorard, G. (2022). COVID-19 and parental burnout: Parents locked down but not more exhausted. *Journal of Family Issues*, *43*(7), 1705–1720. https://doi.org/10.1177/0192513X211030038.

Lebert-Charron, A., Dorard, G., Boujut, E., & Wendland, J. (2018). Maternal burnout syndrome: Contextual and psychological associated factors. *Frontiers in Psychology*, *9*, 885. https://doi.org/10.3389/fpsyg.2018.00885.

Lebow, J. L. (2020). Family in the age of COVID-19. *Family Process*, *59*(2), 309–312. https://doi.org/10.1111/famp.12543.

Lindström, C., Åman, J., & Lindahl Norberg, A. (2011). Parental burnout in relation to sociodemographic, psychosocial and personality factors as well as disease duration and glycaemic control in children with Type 1 diabetes mellitus. *Acta Paediatrica*, *100*(7), 1011–1017. https://doi.org/10.1111/j.1651-2227.2011.02198.x.

Mabbe, E., Soenens, B., Vansteenkiste, M., van der Kaap-Deeder, J., & Mouratidis, A. (2018). Day-to-day variation in autonomy-supportive and psychologically controlling parenting: The role of parents' daily experiences of need satisfaction and need frustration. *Parenting Science Parenting*, *18*(2), 86–109. https://doi.org/10.1080/15295192.2018.1444131.

Marchetti, D., Fontanesi, L., Mazza, C., Di Giandomenico, S., Roma, P., & Verrocchio, M. C. (2020). Parenting-related exhaustion during the Italian COVID-19 lockdown. *Journal of Pediatric*

Psychology, *45*(10), 1114–1123. https://doi.org/10.1093/jpepsy/jsaa093.

McCartney, K., & Rosenthal, R. (2000). Effect size, practical importance, and social policy for children. *Child Development*, *71*(1), 173–180. https://doi.org/10.1111/1467-8624.00131.

Mikkonen, K., Veikkola, H. R., Sorkkila, M., & Aunola, K. (2022). Parenting tyles of Finnish parents and their associations with parental burnout. *Current Psychology*, 1–12. https://doi.org/10.1007/s12144-022-03223-7.

Mikolajczak, M., & Roskam, I. (2018). A theoretical and clinical framework for parental burnout: The balance between risks and resources (BR^2). *Frontiers in Psychology*, *9*(886). https://doi.org/10.3389/fpsyg.2018.00886.

Mikolajczak, M., Brianda, M. E., Avalosse, H., & Roskam, I. (2018). Consequences of parental burnout: Its specific effect on child neglect and violence. *Child Abuse & Neglect*, *80*, 134–145. https://doi.org/10.1016/j.chiabu.2018.03.025.

Mikolajczak, M., Gross, J. J., & Roskam, I. (2019). Parental burnout: what is it, and why does it matter? *Clinical Psychological Science*, *7*(6), 1319–1329. https://doi.org/10.1177/2167702619858430.

Mikolajczak, M., Raes, M.-E., Avalosse, H., & Roskam, I. (2018). Exhausted parents: Sociodemographic, child-related, parent related, parenting and family-functioning correlates of parental burnout. *Journal of Child and Family Studies*, *27*(2), 602–614. https://doi.org/10.1007/s10826-017-0892-4.

Muthén, L. K., & Muthén, B. O. (1998-2017). Mplus User's Guide (8th ed.). Los Angeles, CA: Muthén & Muthén.

Neece, C., McIntyre, L. L., & Fenning, R. (2020). Examining the impact of COVID-19 in ethnically diverse families with young children with intellectual and developmental disabilities. *Journal of Intellectual Disability Research*, *64*(10), 739–749. https://doi.org/10.1111/jir.12769.

Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less well-being? *Psychological Bulletin*, *140*(3), 846–895. https://doi.org/10.1037/a0035444.

Nomaguchi, K., & Milkie, M. A. (2020). Parenthood and well-being: A decade in review. *Journal of Marriage and Family*, *82*(1), 198–223. https://doi.org/10.1111/jomf.12646.

Peer, J. W., & Hillman, S. B. (2014). Stress and resilience for parents of children with intellectual and developmental disabilities: A review of key factors and recommendations for practitioners. *Journal of Policy and Practice in Intellectual Disabilities*, *11*(2), 92–98. https://doi.org/10.1111/jppi.12072.

Pierce, M., Hope, H., Ford, T., Hatch, S., Hotopf, M., John, A., Kontopantelis, E., Webb, R., Wessely, S., McManus, S., & Abel, K. M. (2020). Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. *The Lancet Psychiatry*, *7*(10), 883–892. https://doi.org/10.1016/S2215-0366(20)30308-4.

Ping, Y., Wang, W., Li, Y., & Li, Y. (2022). Fathers' parenting stress, parenting styles and children's problem behavior: the mediating role of parental burnout. *Current Psychology*, 1–13. https://doi.org/10.1007/s12144-022-03667-x.

Pinquart, M. (2013). Do the parent-child relationship and parenting behaviors differ between families with a child with and without chronic illness? A meta-analysis. *Journal of Pediatric Psychology*, *38*(7), 708–721. https://doi.org/10.1093/jpepsy/jst020.

Pinquart, M. (2017). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. *Developmental Psychology*, *53*(5), 873–932. https://doi.org/10.1037/dev0000295.

Povee, K., Roberts, L., Bourke, J., & Leonard, H. (2012). Family functioning in families with a child with Down syndrome: A mixed methods approach. *Journal of Intellectual Disability Research*, *56*(10), 961–973. https://doi.org/10.1111/j.1365-2788.2012.01561.x.

Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, *75*(5), 631–643. https://doi.org/10.1037/amp0000660.

Reutebuch, C. K., El Zein, F., & Roberts, G. J. (2015). A systematic review of the effects of choice on academic outcomes for students with autism spectrum disorder. *Research in Autism Spectrum Disorders*, *20*, 1–16. https://doi.org/10.1016/j.rasd.2015.08.002.

Roskam, I., & Mikolajczak, M. (2020). Gender differences in the nature, antecedents and consequences of parental burnout. *Sex Roles*, *83*(7), 485–498. https://doi.org/10.1007/s11199-020-01121-5.

Roskam, I., & Mikolajczak, M. (2021). The slippery slope of parental exhaustion: A process model of parental burnout. *Journal of Applied Developmental Psychology*, *77*, 101354. https://doi.org/10.1016/j.appdev.2021.101354.

Roskam, I., Aguiar, J., Akgun, E., Arikan, G., Artavia, M., & Mikolajczak, M. (2021). Parental burnout around the globe: a 42-country study. *Affective Science*, *2*, 58–79. https://doi.org/10.1007/s42761-020-00028-4.

Roskam, I., Brianda, M. E., & Mikolajczak, M. (2018). A step forward in the conceptualization and measurement of parental burnout: The Parental Burnout Assessment (PBA). *Frontiers in psychology*, *9*, 758. https://doi.org/10.3389/fpsyg.2018.00758.

Roskam, I., Raes, M. E., Mikolajczak, M. (2017). Exhausted parents: Development and preliminary validation of the parental burnout inventory. *Frontiers in Psychology*, *163*(8). https://doi.org/10.3389/fpsyg.2017.00163.

Roth, G., Assor, A., Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The emotional and academic consequences of parental conditional regard: Comparing conditional positive regard, conditional negative regard, and autonomy support as parenting practices. *Developmental Psychology*, *45*, 1119–1142. https://doi.org/10.1037/a0015272.

Ryan, R. M., & Deci, E. L. (2017). *Self-Determination Theory: Basic psychological needs in motivation, development and wellness*. The Guilford Press.

Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In *Latent variables analysis: Applications for developmental research*. (pp. 399–419). Sage Publications, Inc.

Schaefer, E. S. (1965). Children's reports of parental behavior: An inventory. *Child Development*, *36*, 413–424. https://doi.org/10.2307/1126465.

Schittek, A., Roskam, I., & Mikolajczak, M. (2023). Parental burnout and borderline personality stand out to predict child maltreatment. *Scientific Reports*, *13*, 12153. https://doi.org/10.1038/s41598-023-39310-3.

Schrooyen, C., Soenens, B., Waterschoot, J., Vermote, B., Morbée, S., Beyers, W., Brenning, K., Dieleman, L., van der Kaap-Deeder, J., & Vansteenkiste, M. (2021). Parental identity as a resource for parental adaptation during the COVID-19 lockdown. *Journal of Family Psychology*, *35*(8), 1053–1064. https://doi.org/10.1037/fam0000895.

Skinner, E. A., Wellborn, J. G., & Regan, C. (1986). *The "Parents as Social Context Questionnaire" (PASCQ): Parent- and child-reports of parent involvement, structure, and autonomy support. (Tech Rep.)*. Rochester, NY: University of Rochester.

Soenens, B., & Vansteenkiste, M. (2010). A theoretical upgrade of the concept of parental psychological control: Proposing new insights on the basis of Self-Determination Theory. *Developmental Review*, *30*(1), 74–99. https://doi.org/10.1016/j.dr.2009.11.001.

Soenens, B., Deci, E. L., & Vansteenkiste, M. (2017). How parents contribute to children's psychological health: The critical role of psychological need support. In L. Wehmeyer, T. D. Little, S. J. Lopez, K. A. Shogren, & R. Ryan (Eds.), *Development of*

self-determination through the life-course (pp. 171–187). Springer. https://doi.org/10.1007/978-94-024-1042-6_13.

Soenens, B., Vansteenkiste, M., & Beyers, W. (2019). Parenting adolescents. In M. H. Bornstein (Ed.), *Handbook of parenting* (3rd ed., Vol. 1: Children and parenting, pp. 101–167). Routledge. https://doi.org/10.4324/9780429440847-4.

Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., & Ryan, R. M. (2007). Conceptualizing parental autonomy support: Adolescent perceptions of promotion of independence versus promotion of volitional functioning. *Developmental Psychology*, *43*(3), 633–646. https://doi.org/10.1037/0012-1649.43.3.633.

Valicenti-McDermott, M., Lawson, K., Hottinger, K., Seijo, R., Schechtman, M., Shulman, L., & Shinnar, S. (2015). Parental stress in families of children with autism and other developmental disabilities. *Journal of Child Neurology*, *30*(13), 1728–1735. https://doi.org/10.1177/0883073815579705.

van Bakel, H. J., Van Engen, M. L., & Peters, P. (2018). Validity of the parental burnout inventory among Dutch employees. *Frontiers in Psychology*, *9*, 697. https://doi.org/10.3389/fpsyg.2018.00697.

van der Kaap-Deeder, J., Soenens, B., Mabbe, E., Dieleman, L., Mouratidis, A., Campbell, R., & Vansteenkiste, M. (2019). From daily need experiences to autonomy-supportive and psychologically controlling parenting via psychological availability and stress. *Parenting*, *19*(3), 177–202. https://doi.org/10.1080/15295192.2019.1615791.

van der Kaap-Deeder, J., Vansteenkiste, M., Soenens, B., Loeys, T., Mabbe, E., & Gargurevich, R. (2015). Autonomy-supportive parenting and autonomy-supportive sibling interactions: The role of mothers' and siblings' psychological need satisfaction. *Personality and Social Psychology Bulletin*, *41*(11), 1590–1604. https://doi.org/10.1177/0146167215602225.

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Trends, critical themes, and future directions. *Motivation and Emotion*, *44*, 1–31. https://doi.org/10.1007/s11031-019-09818-1.

Ventola, P., Lei, J., Paisley, C., Lebowitz, E., & Silverman, W. (2017). Parenting a child with ASD: Comparison of parenting style between ASD, anxiety, and typical development. *Journal of Autism and Developmental Disorders*, *47*(9), 2873–2884. https://doi.org/10.1007/s10803-017-3210-5.

Vrolijk, P., Van Lissa, C. J., Branje, S. J., Meeus, W. H., & Keizer, R. (2020). Longitudinal linkages between father and mother autonomy support and adolescent problem behaviors: Between-family differences and within-family effects. *Journal of Youth and Adolescence*, *49*(11), 2372–2387. https://doi.org/10.1007/s10964-020-01309-8.

Whittingham, K., Wee, D., Sanders, M. R., & Boyd, R. (2013). Sorrow, coping and resiliency: Parents of children with cerebral palsy share their experiences. *Disability and Rehabilitation*, *35*(17), 1447–1452. https://doi.org/10.3109/09638288.2012.737081.

Willner, P., Rose, J., Kroese, B. S., Murphy, G. H., Langdon, P. E., Clifford, C., Hutchings, H., Watkins, A., Hiles, S., & Cooper, V. (2020). Effect of the COVID-19 pandemic on the mental health of carers of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *33*(6), 1523–1533. https://doi.org/10.1111/jar.12811.