Parental Identity as a Resource for Parental Adaptation During the COVID-19 Lockdown

Schrooyen, Charlotte[1]

Soenens, Bart[1]

Waterschoot, Joachim[1]

Vermote, Branko[1]

Morbée, Sofie[1]

Beyers, Wim[1]

Brenning, Katrijn[1]

Dieleman, Lisa[1]

Van der Kaap-Deeder, Jolene[2]

Vansteenkiste, Maarten[1]

[1] Department of Developmental, Personality, and Social Psychology, Ghent University, Ghent, Belgium

[2] Department of Psychology, Norwegian University of Science and Technology, Trondheim, Norway

Author Note

The authors declare that they have no conflict of interest.

Corresponding author: Charlotte Schrooyen, Faculty of Psychology and Educational Sciences, Department of Developmental, Social, and Personality Psychology Ghent University, Henri Dunantlaan 2, B-9000, Ghent, Belgium.

Email: Charlotte.Schrooyen@UGent.be. https://orcid.org/0000-0003-1693-7327

Parental Identity as a Resource for Parental Adaptation During the COVID-19 Lockdown

Abstract

The lockdown measures that were taken to contain the worldwide outbreak of COVID-19 caused many parents to stay at home with their children. This unusual situation created both risks and opportunities for families. In the current study, we examined the role of parental identity as a resource for parental adaptation during this challenging period, thereby considering both parenthood experiences and parents' general mental health while also taking into account the cumulative risk to which parents were exposed (e.g., single parenthood). Further, to shed light on the mechanisms behind the effects of parental identity, this study addressed the mediating role of parental satisfaction of their basic psychological needs for autonomy, competence, and relatedness. During the lockdown period in Belgium, 492 parents (88% mothers, M_{age} = 44 years, 63.7% in intact family, 31.2% with a university degree) completed online questionnaires on parental identity, need-based experiences, positive and negative parenthood experiences, and mental health. Several weeks earlier, these participants also rated their mental health and a variety of risks they were exposed to as part of a larger study. Results showed that a clear and self-endorsed parental identity was related to better parental adaptation, with parental need satisfaction playing a mediating role in these associations. Moreover, these associations remained significant after controlling for prior levels of parental mental health and for cumulative risk. Overall, findings suggest that parental identity serves as a source of resilience in an uncertain period such as the COVID-19 pandemic. Practical implications and directions for future research are discussed.

Keywords: COVID-19, parental identity, basic psychological needs, cumulative risk, parental adaptation, Self-Determination Theory

During the COVID-19 pandemic, governments across the world declared lockdown measures to contain the spreading of the coronavirus, including the obligation to work from home, the closure of schools, and the restriction of social contacts. These measures implied that many parents had to stay at home with their children. This lockdown entailed a highly unusual situation disrupting family routines and causing families to spend considerably more time together than before. To date, most reports on parents' psychological adaptation to this situation emphasized the risks associated with these measures (e.g., Brown et al., 2020). As the lockdown measures limited many social and leisure activities, this constrained family climate may have increased parent-child conflicts and tension (Humphreys et al., 2020). Day-to-day support decreased and whereas some parents were temporarily unemployed, other parents were obligated to work from home, which may have led to difficulties combining work and family (Lawson et al., 2020). Not surprisingly, many parents experienced considerable stress (Prime et al., 2020), with some parents even encountering feelings of parental burn-out (Griffith, 2020) and suffering from symptoms of anxiety and depression (Russell et al., 2020). Although the research available to date has focused mainly on the challenges posed by the COVID-19 crisis, it may also entail opportunities for parents. During this lockdown, parents could (re)discover the joys of parenthood. As many parents have busy lives, trying to combine their parental role with work, housekeeping, and social activities, they often feel that they lack quality time with their children (Milkie et al., 2010). The COVID-19 crisis provided a unique opportunity for parents to engage in activities with their children. A few studies showed that some parents fared well and experienced this period as a welcome time-out from their regular life (Günther-Bel et al., 2020). However, parents differed substantially in their adaptation to this period and to explain these individual differences, it is important to examine the role of resources that protect parents against stress and ill-being and that enable them to enjoy being with their children and to experience life satisfaction. Based on Erikson's (1968) model of psychosocial development and

Self-Determination Theory (SDT; Ryan & Deci, 2017), we examine to what extent a clear and self-endorsed parental identity could play such a protective role. We also examine parental psychological need satisfaction as a mediator and we consider the role of these psychological resources in the context of the cumulative risks encountered by parents. This study relied on Erikson's theory and SDT because both theories share a number of fundamental meta-theoretical assumptions and, as such, yield converging predictions. Both theories assume that people have an innate tendency for psychosocial growth and that people, under supportive circumstances, naturally develop towards higher levels of maturity (Erikson, 1968; Ryan & Deci, 2017). Moreover, both theories assign a pivotal role to identity as a cornerstone of individuals' personality and as a key resource for adjustment and resilience.

Parental Identity as a Source of Resilience

Clear Parental Identity

According to classic developmental theories, a stable and mature identity represents a crucial source of well-being and resilience in the face of adversity (Erikson, 1968). With a clear view on who they are and what they want to achieve, people experience greater self-continuity and direction in life (Marcia, 1980). This sense of direction helps people to maintain confidence during confusing times. Although a large literature of research conducted among adolescents and emerging adults has shown that a more mature identity is related to higher well-being (Berzonsky & Adams, 1999; Meeus, 2011), studies on identity development specifically in the context of parenthood are rather scant. However, research has begun to show that parental identity plays an important role in parents' mental health and in their interactions with family members (Cast, 2004; Cowan & Cowan, 2000). Within this nascent field of research, parental identity is defined as the degree to which parents have clear and coherent commitments in their parenting role (Fadjukoff et al., 2016). With a more mature parental identity, parents have well-articulated parental goals and have a clear and comprehensive view on the type of parent they

want to be. In contrast, parents with a more poorly developed identity (i.e., diffused parental identity) have repeated doubts about their parental role. They feel rather uncertain and ruminate about decisions they need to make as a parent (Piotrowski, 2018). Fadjukoff et al. (2016) showed that a clear parental identity related positively to mental health, while a diffused parental identity was related to more parenting stress. Similarly, Piotrowski (2018) observed that mothers with clear commitments as a parent experienced less anxiety and more life satisfaction. In contrast, rumination about the parental role related positively to maternal anxiety. More recently, Meca et al. (2020) found in a sample of current and expecting parents that doubts about parental identity commitments were related to more internalizing problems. An examination of parental identity during the COVID-19 crisis provides an opportunity to address the protective role of parental identity in the face of adversity.

Autonomous Parental Identity

In addition to the degree to which parents have a clear view on their parental role (i.e., the strength of identity commitments), it is important to consider the degree to which parents adopt identity commitments for self-endorsed or autonomous reasons (i.e., the quality of motivation). According to Erikson (1968), there is more to identity formation than the adoption of clear commitments per se. Ideally, identity commitments are personally endorsed and truly reflective of who people really are (rather than adopted for social expectations). Similarly, SDT (Ryan & Deci, 2017) has emphasized the importance of the internalization of individuals' identity commitments with their most fundamental values and preferences. As such, both the strength and the motivational quality of these commitments matter for individuals' adjustment (Ryan & Deci, 2003; Soenens & Vansteenkiste, 2011). When high on autonomous motivation, people personally value their commitments or anticipate enjoyment and interesting challenges in the pursuit of these commitments. More specifically, parents with an autonomous regulation of their parental role are involved with their children because they find it worthwhile or deeply

rewarding to do so. Research conducted in the context of parenthood demonstrated that autonomous motivation for the parental role is related to more positive parental experiences and higher life satisfaction (Jungert et al., 2015). Further, autonomous motivation for parenthood was found to play a protective role in the transition to parenthood, a period characterized by many challenges for ill-being. With more autonomous motivation, parents displayed lower prenatal (Brenning et al., 2015) and postnatal depressive symptoms (Gauthier et al., 2010). Given these findings, autonomous motivation was incorporated in the assessment of parental identity. Based on the identity literature and SDT-based research, it can be argued that a clear and autonomous parental identity contributes to mental health and protects against ill-being during challenging times (Soenens & Vansteenkiste, 2011). Such an identity would provide parents with a sense of trust and direction amidst quickly evolving and uncertain changes in their life. If the assumptions about the role of parental identity hold true, an important question is which processes are involved in this beneficial effect. Based on SDT, it can be argued that satisfaction of parents' basic psychological needs represents one such intervening mechanism.

Parents' Basic Psychological Needs

According to SDT, people have three basic psychological needs, the satisfaction of which is essential to their well-being and social adjustment, that is, the needs for autonomy, competence and relatedness (Ryan & Deci, 2017; Vansteenkiste, Ryan, & Soenens, 2020). In the context of parenthood, the need for autonomy entails parental experiences of volition and authenticity versus feelings of pressure during parenting tasks. The need for competence refers to parents' experiences of confidence and effectiveness versus failure in their parenting role. The need for relatedness involves parents' feelings of warmth and mutuality versus coldness as a parent. Recently, research has begun to examine the role of parental psychological need satisfaction in parents' adjustment. It requires tremendous energy for parents to display flexibility, to show creativity to solve problems, and to be psychologically available to their

child's perspective. In the absence of psychological need satisfaction, however, parents are more quickly stressed out by the daily hassles of parenting. Diary-based research demonstrated that parents experienced more psychological well-being (Brenning et al., 2019) and interacted in a more supportive way with their children (Mabbe et al., 2018) on days their needs were satisfied. Because parental need satisfaction matters for parents' adjustment and because it may play a particularly prominent role during challenging times, we argue for its importance in parents' adaptation to this crisis. The crisis likely posed many challenges to parents' psychological needs, yet also offered opportunities to have their needs met. Therefore, it can be expected that there is much variability in parents' need-based experiences, with this variability relating meaningfully to parents' evaluation of parenthood during this crisis and to their mental health. One previous study showed that parental need satisfaction was related positively to parental vitality and negatively to parental stress during the COVID-19 crisis (Neubauer et al., 2020).

The Mediating Role of Need-based Experiences

It is plausible to assume that parental identity is related to parents' need-based experiences and that these experiences, in turn, explain at least partly the adaptive role of parental identity in parents' adaptation. Parents with a clearer and more autonomous identity are likely to be more proactive in seeking need-satisfying activities with their children. Because these parents have deeply endorsed goals and preferences in their parental role, they know better what they want and they see opportunities to foster need satisfaction. The argument that parental identity relates positively to need satisfaction and subsequent adaptation has received indirect support. Brenning et al. (2015) showed that expecting mothers' autonomous motivation for parenthood was related to their prenatal well-being with need satisfaction playing a mediating role in this association. Ross-Plourde and Basque (2019) similarly found that associations between autonomous motivation for the parental role and postnatal satisfaction were mediated by satisfaction of the basic psychological needs. No research to date, however, has examined

this mediation sequence using a more complete measure of parental identity (including both commitment strength and quality of motivation) and in the context of the COVID-19 pandemic.

Cumulative Risk

Given the impact of the COVID-19 crisis, it is important to consider the assumed protective role of psychological resources in the context of the risk factors encountered by parents. A highly stressful period, such as the COVID-19 crisis, can awaken the vulnerabilities of parents in high-risk conditions (e.g., single parents or families with a low socioeconomic status), resulting in a cascade of negative events (Prime et al., 2020). Previous research (Evans et al., 2013; Trentacosta et al., 2008) and theories on family functioning, including the Family Stress Model (Conger & Conger, 2002), suggested that an increasing number of risk factors increases parents' susceptibility to stressful events. For instance, parents in high-risk conditions typically have reduced resources and have less social support systems available to deal with adversity. Confronted with acute stress, these demands quickly exceed parents' coping resources, resulting in both mental health problems and strained family relationships, with these two types of problems reinforcing each other mutually in a negative vicious cycle. According to a cumulative risk approach, the combination of several risk factors plays a more pronounced role in parents' adaptation than individual risk factors. This is because these risk factors would exacerbate each other's effects, with a culmination of risk factors overburdening parents' ability to deal effectively in stressful situations (Evans et al., 2013). Because parents with higher cumulative risk are likely to experience parenthood more negatively and to display more general distress, the question can be raised whether parental identity and parental need satisfaction explain variance in parental adaptation over and above effects of cumulative risk. Moreover, it is important to examine the potential interplay between the cumulative risk and these psychological resources. Because both identity (Erikson, 1968) and need satisfaction (Weinstein

& Ryan, 2011) are assumed to play an important role as sources of resilience, their role in parental adjustment could matter the most among parents exposed to higher levels of risks.

The Present Study

The main aim of this study was to examine the role of parental identity, as indicated by clear commitments and autonomous motivation for the parental role, in parents' adaptation during the COVID-19 lockdown in Belgium. To provide a comprehensive picture of parents' adaptation, this study included measures of specific parenthood experiences and more general mental health indicators. Also, to complement a risk perspective on parental adaptation with a strengths-based perspective, it included not only measures of ill-being and distress but also measures of positive experiences and life satisfaction. We addressed two hypotheses and one more explorative research question. First, we expected that a clear and autonomous parental identity would relate positively to positive parenthood experiences and life satisfaction and negatively to negative parenthood experiences and ill-being. To provide a conservative test of the role of parental identity, we examined whether it would relate to parents' current mental health even when controlling for prior levels of parental mental health (assessed a few weeks earlier). Second, we expected that these associations would be mediated by the satisfaction of the needs for autonomy, competence, and relatedness. Third, we examined whether these associations would hold even when taking into account the role of cumulative risk. We explored the interactive interplay between parents' cumulative risk on the one hand and parental identity and need satisfaction on the other hand. Specifically, we considered the possibility that the role of these protective factors would be more pronounced with increasing levels of risk.

Method

Participants and Procedure

The Belgian government imposed several restrictions to contain the coronavirus, ultimately announcing a lockdown from March 18th until May 10th 2020. During this strict

lockdown period, schools, non-essential shops and catering facilities were closed and people had to avoid contact with other people as much as possible. The participants for this study were selected from a larger survey conducted from March 26th to April 24th (N = 19269). Participants were recruited via an advertising campaign on social media and through a collaboration with organizations who distributed the online questionnaire with built-in informed consent. This initial survey included participants older than 18 with a broad age range (18-83 years; 62.5% female). Before finishing the survey, participants were asked if they were willing to participate in a follow-up assessment. A total of 4730 participants agreed to participate in the follow-up between April 24th and May 6th and provided a valid e-mail address, of which 3092 actually participated (i.e., a response rate of 65.8%). First, participants answered some general questions (e.g., "*Are you a parent*?"; *"Are you currently working from home?*") and based on their responses, they were assigned to different surveys (i.e., targeting students, employees, late adults, and parents). Only the survey targeting parents is used in the current study. After selecting only the participants who reported being a parent and having a child/children under 18 who lived at home, 492 parents (76.4%; 88.2% female, M_{age} = 43.97 years, SD = 7.52) actually participated. This sample size was considered to be adequate in terms of power for the research questions and mediation (MacKinnon et al., 1995) and interaction analyses (Aiken & West, 1991). We also conducted a post-hoc power analysis, the results of which indicated sufficient power (see Table 4 in the Supplementary Materials). Most parents reported having two biological children (M = 2.08, SD = 1.03). Of the total sample, 63.7% reported having an intact family with both parents present, 17.0% reported being a single parent, and 10.1% formed a reconstituted family. The remaining 8.5% of the participants reported having another family structure (e.g., foster or adoptive family). In terms of educational level, 31.2% of the participants obtained a university degree, 41.0% a college degree, and 22.5% did not attend higher education. Of the remaining 5.3% this information was unknown. A majority of the

sample (82.4%) reported having a sufficient income, with 64% of the participants working part-time or full-time. The procedure used in this study was approved by the ethical committee of Ghent University (nr. 2020/37).

Measures

All measures were administered in Dutch. We chose to use brief measures in order not to overburden parents during this period and to increase the response rate. Unless indicated otherwise, all items were rated on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Parental Identity

To measure the concept of parental identity, we combined three different indicators. Two of these indicators represent the strength of parental identity, that is, parental commitment and parental rumination (reflecting a lack of clear commitments) and one concerns the motivational quality, that is, the autonomous regulation of parental commitments. The first two indicators were measured with an adapted version of the well-validated Dimensions of Identity Development Scale[1] (DIDS, Luyckx, et al., 2008 The items were slightly adjusted to the context of the parental role. Research has demonstrated convincingly the internal structure and validity of the original DIDS (Luyckx, et al., 2011) and recent research further confirmed the reliability and validity of the adaptation of the DIDS to the parental role, showing that its subscales relate in theoretically meaningful ways to measures of life satisfaction, parental stress and burnout, and parenting quality (Schrooyen et al., 2019). In the current study, both parental identity commitment (e.g., "*I have decided on the kind of parent I want to be"*; α = .75) and parental rumination (e.g., "*I worry about what I am supposed to do as a parent*"; α = .72) were measured with three items. Parents' autonomous motivation for the parental role was measured with three items from the Parenting Motivation Scale (Jungert et al., 2015) (e.g., "*Taking care of my child(ren) is important to me and part of my values*" α = .75). To examine whether these three variables could be combined in a total score for parental identity, a Principal Components

Analysis was conducted. This resulted in one component having an eigenvalue higher than 1, explaining 64.55% of the variance. Whereas identity commitment (.87) and autonomous motivation (.75) loaded positively on this component, rumination loaded negatively (-.79). To create a composite score for parental identity, the items for rumination were scored reversed and averaged with the items for identity commitment and autonomous motivation (α = .83).

Parental Psychological Needs

To assess parents' psychological need satisfaction for autonomy, competence, and relatedness, we used an adjusted 12-item version of the Basic Psychological Need Satisfaction and Need Frustration Scale (Chen et al., 2015). The reliability, internal structure, and validity have been demonstrated across the world (e.g., Chen et al., 2015). Whereas the original scale measures individuals' psychological needs in general, the version used in this study taps into parents' needs in the context of parent-child interactions (see Brenning et al., 2019). Following the stem (i.e., "*When I spend time with my child(ren) during this crisis period…*"), participants were asked to indicate their psychological need satisfaction (2 items) and frustration (2 items) per psychological need. Example items are: *" I feel a sense of choice and freedom in the things I do as a parent*" (i.e., autonomy satisfaction) and "*it feels like I am doing things with my child(ren) because 'I have to"*" (i.e., autonomy frustration). In line with previous research (e.g., Chen et al., 2015), a composite score for satisfaction (versus frustration) was calculated for each need, thereby averaging the need satisfaction items with the reverse-scored need frustration items for each need. This approach yielded good internal consistencies (autonomy: α = .78, competence: α = .85, and relatedness: α = .76).

Parenthood Experiences

To measure negative parenthood experiences, we first included three items from the Parental Burnout Assessment (Roskam et al., 2018) (e.g., *"I feel like I can't cope as a parent*"). Second, we asked parents to rate the amount of parenting stress they currently experience (i.e.,

"I experience stress in the upbringing/care of my child(ren)"). Third, we asked parents whether they experience a need for professional help *("I felt the need for help from experts (advice, care, support, guidance) because of problems in the upbringing/care of my child(ren)*"). To obtain a total score for negative parenthood experiences, we calculated the mean of these five items (α = .87). To measure positive parenthood experiences, three face valid items were constructed to tap into positive feelings parents may experience when spending time with their children (e.g., *"I enjoy doing things with my child(ren)*"; α = .83).

General Subjective Well-Being and Ill-Being

The measures for general well-being and ill-being were administered twice, with on average a 2-week interval between the two surveys. To measure participants' ill-being, both experiences of anxiety and depression during the last week were assessed, using a scale from 1 (*seldom or never*) to 4 (*mostly or all the time*). Feelings of anxiety were measured using four items from the shorted State Trait Anxiety Inventory (Marteau & Bekker, 1992) (e.g., "*I felt worried*"), supplemented with the most face valid item from the full version (i.e., "*I felt anxious*"). Depressive symptoms were measured with the 6-item version (Van Hiel & Vansteenkiste, 2009) (e.g., "*I felt sad*") of the Center for Epidemiological Studies – Depression scale (Radloff, 1977). Because the scores for anxiety and depression were highly correlated (r = .74, $p < .001$), the items were averaged in a total score for ill-being. Internal consistency was acceptable both at T1 (α = .90) and at T2 (α = .91). To measure subjective well-being, participants' life satisfaction was measured. In line with previous research (Fujita & Diener, 2005), the most face valid item from the Satisfaction with Life Scale (Pavot & Diener, 1993) was used. Using a scale from 1 (*seldom or never*) to 4 (*mostly or all the time*) participants were asked to what extent they were satisfied with their life during the past week.

Cumulative Risk

To create a cumulative risk score, we took a data-driven approach. We considered all relevant sociodemographic variables and measures of contextual risk assessed in the survey (see Table 1 in the Supplementary Materials). These variables could be grouped into three categories, one dealing with characteristics of the family itself (i.e., family structure, number of children, age of the children), one dealing with characteristics of the children (i.e., physical health, emotional or behavioral problems), and one dealing with the context of the family (i.e., socio-economic status, living area, working conditions). For each category, we performed a multivariate analysis of variance, examining effects of these risk variables on the study variables. Each variable that was found to have a multivariate effect on the study variables was retained in the cumulative risk index. Parents were considered at risk when (1) the *family structure was non-intact* (35.6%), (2) they had one or more *children aged 0-4 years* (18.3%), (3) they had one or more *children aged 5-9 years* (34.1%), (4) they had one or more *children with an emotional problem* (23.9%), (5) they had one or more *children with a behavioral problem* (16.8%), (6) their *perceived household income* was not sufficient (17.4%), and (7) they engaged in *full-time teleworking* (32.7%). In line with recommendations and standard procedures in the literature (Evans et al., 2013), the cumulative risk was constructed by dichotomizing each of the 7 retained risk factors (0 = no risk; 1 = risk) and by summing these dichotomous scores.

Results

Descriptive Statistics and Correlations

Descriptive statistics and bivariate Pearson-correlations can be found in the Supplementary Materials (see Table 2). Paired-samples *t*-tests revealed that the scores on relatedness satisfaction were significantly higher than scores on competence satisfaction ($t(487) = 20.37$, $p < .001$) which, in turn, were significantly higher than scores on autonomy satisfaction ($t(487) = 9.87$, $p < .001$). Descriptive statistics showed higher scores for positive parental experiences and life satisfaction compared to negative parental experiences and ill-being.

Correlation analyses showed that cumulative risk is correlated negatively with need satisfaction, positive parental experiences, and life satisfaction, while being positively correlated with negative parental experiences and ill-being. Parental identity is correlated significantly with all study variables, showing that higher levels of parental identity are accompanied with higher levels of need satisfaction, higher levels of positive parental experiences and life satisfaction, and lower levels of negative parental experiences and ill-being. The satisfaction of the three needs was related positively to the positive outcomes and negatively to the negative outcomes.

Background Variables

To investigate whether parental gender and age were associated with the study variables, a multivariate analysis of covariance was conducted with gender as a fixed factor, with age as a covariate, and with all study variables as dependent variables. Multivariate tests revealed significant effects of both gender (Wilks' Lambda = 0.94; $F(10,476) = 2.86$; $p = .002$; $\eta^2 = .06$) and age (Wilks' Lambda = 0.85; $F(10,476) = 8.33$, $p < .000$; $\eta^2 = .15$). Subsequent univariate analyses showed that mothers reported more feelings of relatedness ($M = 4.51$, $SD = 0.58$; $F(1,487) = 4.08$; $p = .044$) and more positive parenthood experiences ($M = 4.09$, $SD = 0.75$; $F(1,487) = 5.69$; $p = .017$) than fathers ($M = 4.29$, $SD = 0.67$ and $M = 3.87$, $SD = 0.77$ respectively). In addition, older parents reported higher scores on parental identity ($F(1,487) = 8.36$; $p = .004$), autonomy ($F(1,487) = 23.01$; $p < .001$), competence ($F(1,487) = 14.82$; $p < .001$), and life satisfaction ($F(1,487) = 5.19$; $p = .023$), while scoring lower on negative parental experiences ($F(1,487) = 36.53$; $p < .001$) and ill-being (T1: $F(1,487) = 6.49$; $p = .011$; T2: $F(1,487) = 16.10$; $p < .001$). Therefore, we controlled for the effects of gender and age in all further analyses.

Primary Analyses

Testing the Direct and Indirect Associations between Parental Identity and Outcomes

To examine the associations between parental identity and the parental outcomes (Research Question 1) and the hypothesized mediating role of the psychological needs (Research Question 2), a series of path models was tested, thereby generating standardized regression coefficients using the R-package 'Lavaan' (Rosseel, 2012). Inspection of the dataset revealed that 3% of the data was missing. Because the Little's test revealed that missing data were missing completely at random ($\chi^2(16) = 14.26$, $p = .58$), we used maximum likelihood estimation to handle missing data. Once the model was fitted, *p*-values and 95%-confidence intervals were estimated by using the basic bootstrapping method (Davison & Hinkley, 1997). We built three models (Holmbeck et al., 1997), that is (a) a model including only the direct effects of parental identity (without including the mediators), (b) a model including only indirect associations between parental identity and the outcomes through the psychological needs (i.e., a full mediation model) and, finally, (c) a model including both direct and indirect effects in prediction of the outcomes (i.e., a partial mediation model). In these models, we controlled for the effects of cumulative risk, gender and age. In each step of the procedure, we evaluated the models by several fit indices: the normed χ^2 test (i.e., acceptable when χ^2/df ratio is 2 or below), the Comparative Fit Index (CFI; minimal threshold of .95), the Standardized Root Mean square Residual (SRMR; maximum threshold of .08), and the Root Mean Square Error of Approximation (RMSEA; maximum threshold of .06) (Hu & Bentler, 1999; Kline, 2005). The models were first tested without control and then with control for participants' earlier levels of general mental health. The direct effects model without control for earlier levels of mental health showed that parental identity was related positively to positive parental experiences ($\beta = .49$, $p < .001$) and life satisfaction ($\beta = .31$, $p < .001$), and negatively to negative parental experiences ($\beta = -.52$, $p < .001$) and ill-being ($\beta = -.31$, $p < .001$). After controlling for the mental health outcomes as measured on T1, all effects remained significant for positive parental experiences ($\beta = .44$, $p < .001$), life satisfaction ($\beta = .13$, $p < .001$), negative parental

experiences (β = -.44, $p < .001$) and for ill-being (β = -.11, $p < .001$). The model including only indirect effects via the three psychological needs (which also allowed correlations between all mediators) ($\chi^2(49) = 2430.02$, $p < .001$; CFI = 1.00; SRMR = .00; RMSEA = .00 without controlling for the T1 measures and $\chi^2(12) = 127.92$, $p < .001$; CFI = 0.96; SRMR = 0.07; RMSEA = 0.14 with control for T1) showed that parental identity was related positively to each of the three needs, that is, autonomy (β = .52, $p < .001$), competence (β = .68, $p < .001$), and relatedness (β = .47, $p < .001$). Next, the three needs were related positively to positive parental experiences and life satisfaction, and negatively to negative parental experiences and ill-being. There was only one exception, with the need for competence being unrelated to positive parenting experiences. The associations between the needs and the general mental health outcomes remained significant after controlling for the T1 levels. Third, by adding direct associations between parental identity and the outcomes (in addition to the indirect associations via the psychological needs), the fit of the model improved significantly ($\Delta \chi^2(4) = 25.47$, $p < .001$). The direct associations between parental identity and positive parental experiences and negative parental experiences were still significant but were reduced substantially compared to the effects in the initial direct effects model. Moreover, the indirect associations from parental identity to both positive and negative parental experiences were all significant (see Table 1), except for the indirect association between parental identity and positive parental experiences via competence. The direct effects of parental identity on life satisfaction and ill-being on the other hand were no longer significant. All indirect effects to the two mental health outcomes through autonomy, competence, and relatedness were significant (see Table 1). Overall, these findings indicate a pattern of partial mediation for the two parental outcomes and a pattern of full mediation for the general health outcomes. When examining this model, controlling for the initial levels of the mental health outcomes at T1, the indirect effects through autonomy and

competence on life satisfaction remained significant, yet the indirect effect through relatedness became non-significant. All indirect associations with ill-being remained significant.[2]

Testing the Unique and Interactive Roles of Cumulative Risk and Psychological Resources.

To examine Research Question 3, we tested the unique main effects of cumulative risk and parental identity, and their interaction, in the prediction of both parental need satisfaction and the outcomes using a series of linear regression analyses. In doing so, we assessed the percentage of explained variance by the *R*-squared (R^2), and we calculated moderation terms by multiplying the *z*-scores of the main effects (Kromrey & Foster-Johnson, 1998). Table 2 shows the standardized regression coefficients for a series of regression models including parental identity, cumulative risk, and their interaction as predictors of all other study variables. All main effects of parental identity reported previously remained significant even when controlling for cumulative risk. Cumulative risk was associated negatively with need satisfaction and the positive outcomes and associated positively with the negative outcomes. However, cumulative risk was no longer associated with the two mental health outcomes after controlling for their initial levels. Finally, we also examined the unique and interactive effects of cumulative risk and the three needs in the prediction of the outcomes. Table 3 represents the results of a second series of linear regression models, including the main effects of cumulative risk and each of the psychological needs, and their interactions. When controlling for effects of cumulative risk, all psychological needs were still related significantly to all outcomes. After controlling for the initial levels, autonomy still related positively to life satisfaction and relatedness still related negatively to ill-being. Either with or without control for initial levels, none of the interactions between cumulative risk and the psychological needs were significant. In sum, these analyses revealed no moderating effect of cumulative risk on the associations between parental identity, need satisfaction, and the outcomes. Parental identity and need satisfaction did display unique main effects on the outcomes in addition to the effect of cumulative risk.[3]

Discussion

To contain the coronavirus pandemic, governments worldwide implemented a stay-at-home ‘lockdown’, entailing both risks and opportunities for families. Whereas some parents experienced this period as stressful (Prime et al., 2020), others enjoyed being more involved with their children (Günther-Bel et al., 2020). Parents in the current sample generally reported more positive than negative parenthood experiences, a finding underscoring the need to consider the lockdown period not only as a period of risks but also of opportunities. More importantly, we observed vast differences between parents in terms of their parenthood experiences and mental health. Given these substantial inter-parental differences, we examined which factors and psychological mechanisms underlie this heterogeneity, thereby focusing on parental identity and the mediating role of parents’ basic psychological needs. Because families faced varying degrees of risk during this lockdown period, we also considered the unique effects of cumulative risk and the psychological resources, as well as their interactions, on parents’ adaptation.

The Importance of a Clear and Autonomous Parental Identity

Consistent with Erikson’s identity theory (Erikson, 1968) and SDT (Ryan & Deci, 2017), we found that parents with a clearer and more autonomous parental identity reported lower levels of negative parental experiences and ill-being (i.e., depression and anxiety) and higher levels of positive parental experiences and well-being (i.e., life satisfaction). In line with previous research (e.g., Fadjukoff et al., 2016; Jungert et al., 2015), this study showed that parental identity is related to adaptive outcomes also during a historical period of challenges for family adaptation. Importantly, parental identity not only related negatively to ill-being but also related positively to positive indicators of mental health. That is, parents who have a clear view of who they are as a parent and who perceive parenting as inherently valuable seem to be armed better against negative experiences and depressive or anxious feelings (indicating a protective role) and at the same time report more positive parental experiences and higher life satisfaction

(indicating a well-being-enhancing role). Moreover, the relations with mental health were robust and still significant even when controlling for prior levels of mental health assessed before. As such, parental identity was related not only to basic levels of parental mental health but even to improvements in mental health during the lockdown period.

Need-based Experiences as Necessary Fuel for Parental Adaptation

On the basis of SDT, we proposed parental satisfaction of the basic psychological needs for autonomy, competence, and relatedness as intervening mechanisms in associations between parental identity and the outcomes. Results generally confirmed the intervening role of need satisfaction, with need satisfaction fully explaining the associations of parental identity with mental health and partially explaining the associations with parenthood experiences. Parents who have a clear and self-endorsed view of who they are as a parent, more often feel they can be themselves during parent-child interactions (autonomy satisfaction), feel capable in their parental role (competence satisfaction), and feel more connected to their children (relatedness satisfaction). In turn, these experiences of parental need satisfaction are associated with a decreased likelihood of parents feeling stressed or burned-out in their parental role and a greater chance of experiencing more joy and pleasure being around with their children. Future research could examine in more depth the reasons why parents with a clearer and more autonomous identity experience greater need satisfaction in interaction with their children. One possibility is that these parents proactively select or create a more need-satisfying family context. Another mechanism is parents' appraisals of events. Parents with a clear and more autonomous identity may perceive situations with their children in a more positive, need-satisfying way. The finding that parental need satisfaction, in turn, was related robustly to the parental outcomes is generally consistent with previous research demonstrating the energizing role of need satisfaction (Van der Kaap-Deeder et al., 2019) in particular during stressful transitions (Brenning et al., 2019). Generally speaking, each of the needs was related significantly to at least one of the outcomes, a

finding consistent with the assumption that all three needs matter uniquely for individuals' adjustment (Ryan & Deci, 2017). Moreover, most of the associations with the mental health outcomes remained significant after controlling for prior levels of mental health, indicating that need satisfaction (much like parental identity) relates to improvements in mental health across time. Interestingly, some of the associations between the needs and the parental outcomes were specific. Whereas both autonomy and relatedness satisfaction were associated similarly with positive parental experiences, no association was found with competence satisfaction. For negative parental experiences, both autonomy and competence satisfaction showed comparable negative associations, whereas relatedness satisfaction only showed a small negative effect. Autonomy satisfaction was found to be the most consistent predictor of all outcomes, indicating that feeling free and authentic as a parent is important to experience more positive and less negative feelings. The very consistent role of autonomy satisfaction is striking because this need was satisfied the least compared to the two other needs. Whereas parental need satisfaction fully mediated associations between parental identity and parents' mental health, it was only a partial mediator of associations with parenthood experiences. There were still direct associations between parental identity and parenthood experiences. Future research could examine the role of additional mediators to explain these remaining direct associations, including for instance parental gratitude. Alternatively, these remaining direct associations may reflect a reverse effect of parenthood experiences on parental identity. Parents who feel good about the interactions with their children during troubling times may get even more convinced that the parenting role is a valuable aspect of their identity.

The Unique and Interactive Effects of the Psychological Resources and Cumulative Risk

Although the COVID-19 crisis poses challenges to all families, some parents are challenged more strongly than others. For example, we found that single parents, parents with children with an emotional or behavioral problem, or parents who had to work from home on a

full-time basis were more prone to ill-being. Given these findings, an important question was whether the psychological resources would explain variance in parental adaptation in addition to family, child, and contextual risk factors. This proved to be the case for both parental identity and parental need satisfaction. We also examined the possibility that a clearer and more autonomous parental identity and need satisfying interactions with their children would matter the most when parents were impacted more by the COVID-19 challenges. However, no moderating effects of cumulative risk were found. That is, parents who have a clear sense of self and who experience a high level of need satisfaction as a parent experience more well-being, regardless of whether they are at high or low risk. Although our findings need to be replicated in more heterogeneous samples and among samples of parents at greater risk, the current findings warrant optimism because they indicate that the psychological resources matter irrespective of the level of risk parents are confronted with.

Practical Implications

Our findings are promising from an applied point of view. Because both parental identity (Fadjukoff et al., 2016) and parental need satisfaction (Mabbe et al., 2018; Van der Kaap-Deeder et al., 2019) are susceptible to change, these resources can be targeted in prevention and intervention programs. Many intervention programs for parents focus rather exclusively on parenting skills and behaviors (Leijten et al., 2019). However, to really strengthen parents' resilience, it is important to target also their experiences in the parenting role and the psychological mechanisms underlying parents' mental health. More recent interventions indeed focus on parents' own experiences and mental health (e.g., Brianda et al., 2021), thereby assuming that parents' improved mental health ultimately also contributes to more high-quality parenting. Such interventions could be enriched by including also methods to strengthen parents' identity and to increase their psychological need satisfaction. Regarding parental identity, future research could examine whether brief value-affirmation interventions, which aim

to make individuals' values more explicit, can be applied to the parental role, thereby activating parents' identity as a basis for actions and decision (Cohen & Sherman, 2014). Further, more intensive intervention-based research with adolescents has shown that identity is a workable target for intervention (Schwartz et al., 2005). Parental identity could also be a workable mechanism for change in individual counseling. By having parents reflect about the centrality of their parental role in their life and about their values as a parent, they could gradually develop a clearer view and at the same time connect this role more deeply to their goals and preferences. Second, the identification of parents' need satisfaction as an intervening mechanism suggests that interventions focusing on parental need-based experiences could also strengthen parents' resilience during the COVID-19 crisis. Parents could be encouraged, either through a universal intervention program or more guided counseling, to engage in self-care and to attend to their need-based experiences. They could be taught to engage in need-crafting, thereby organizing their family life as much as possible around need-satisfying experiences (Laporte et al., 2021).

Limitations and Future Directions

This study has several limitations that need to be acknowledged when interpreting the results. First, this study is mainly cross-sectional. Although we did control for prior levels of parental mental health, a more comprehensive longitudinal design is needed to examine the effects of parental identity and parental need satisfaction over a longer period of time and to determine the direction of effects. Indeed, parenthood experiences may be not only the outcome of parental identity but may also feed back into parental identity, with positive experiences strengthening parents' identity and with negative experiences raising parental doubts. Similarly, parental need-based experiences can have an important signaling function in parental identity. Whereas experiences of need satisfaction underscore the value of one's parental role, experiences of need frustration indicate that the parental role is not well integrated and may need to be reorganized. Although we tested an alternative mediation model with our data and

although our hypothesized model had a better fit than the original model (see Footnote 2), only longitudinal research can really address the direction of effects in these associations. Second, our sample was selective and not entirely representative of the population. 88% of the participants were mothers, most parents were relatively highly educated and few parents had a high cumulative risk score. As such, there are limits to the generalizability of the results. Most likely, the parents who were willing and able to participate were relatively well-adjusted because they had the time, energy, and facilities to fill out an online survey during challenging times. To reach more vulnerable families, future research would do well to recruit families more actively by using home visits and through social services. In addition, previous research showed gender differences in parental identity, with mothers more often displaying a more mature parental identity than fathers (Fadjukoff et al., 2016). At the same time, mothers are more vulnerable than fathers to ill-being (Nelson et al., 2019) and to parental burnout (Roskam & Mikolajczak, 2020). As such, future research would do well to rely on samples with a better balance in terms of gender Third, all constructs were measured via self-reports, which can cause shared method variance. In addition, in order not to overburden parents during a demanding period, most variables were measured using abbreviated scales. Future research could try to include other informants and more elaborate scales. A multi-informant approach would also allow to examine the associations from a dyadic perspective and family-wide perspective.

Footnotes

[1] Our study also included a scale measuring parental identity exploration. We deliberately chose not to include this scale and to use only the commitment and ruminative exploration scales from the DIDS as indicators for the parental identity measure. This decision was based on a number of reasons. First, previous research showed that commitment and rumination were the most prominent dimensions of parental identity in predicting parental mental health. In contrast, identity exploration was found to be unrelated or only weakly related to well-being and parental adjustment (Piotrowski, 2018; Fadjukoff et al., 2016). Second, also in

our own data we found that associations between and the parental outcomes were much less pronounced (and non-significant in several cases) compared to associations between parental commitment/rumination and the outcomes (see Table 3 in the Supplementary Materials). Moreover, identity exploration showed only a low (and negative) correlation with identity commitment. As such, identity exploration could not be reliably included in a composite score for parental identity.

[2] We tested an alternative mediation model in which parental experiences and mental health were the mediators and the psychological needs were the outcomes. To provide a fair and straightforward comparison with our original model, no direct associations between parental identity and the outcomes were allowed in both models. Because this is a comparison between two non-nested models, we relied on the AIC and BIC fit indices, with lower values indicating better fit. These fit indices were in favor of our original model (AIC = 5566.57 and BIC = 5626.54 for the original model; AIC = 6133.46 and BIC = 6188.34 for the alternative model). Although these findings are in favor of the direction of effects assumed in our conceptual model, only future longitudinal research can address convincingly the direction of effects in these associations.

[3] We also tested interactions between parental identity and each of the 7 individual risk factors, resulting in 28 interactions because there were 4 outcomes. In total, 4 of these interactions were significant. There were no significant interactions in the prediction of positive parental experiences. For negative parental experiences, the interaction between parental identity and the risk factor of having children between 0-4 years was significant ($\beta = -.07$; $p = .04$). For life satisfaction, the interaction between parental identity and the risk factor of having children between 5-9 years was significant ($\beta = .10$; $p = .03$) as was the interaction between parental identity and the risk factor of working from home ($\beta = .10$; $p = .02$). For ill-being, the interaction between parental identity and the risk factor of having a child with a behavioral problem was significant ($\beta = -.09$; $p = .03$). In each of these cases, parental identity played a buffering role. For instance, the (positive) association between having a child with a behavioral problem and parental ill-being was significant only among parents scoring low on parental

identity (and not significant among parents scoring high on parental identity). Overall, however, the number of interactions was limited and these interactions reached significance only at the level of $p < .05$. As such, they should be interpreted with much caution.

References

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA: Sage.

Berzonsky, M. D., & Adams, G. R. (1999). Reevaluating the identity status paradigm: Still useful after 35 years. *Developmental Review, 19*, 557–590. https://doi.org/10.1006/drev.1999.0495

Brenning, K., Soenens, B., & Vansteenkiste, M. (2015). What's your motivation to be pregnant? Relations between motives for parenthood and women's prenatal functioning. *Journal of Family Psychology*, *29*, 755–765. https://doi.org/10.1037/fam0000110

Brenning, K., Soenens, B., Mabbe, E., & Vansteenkiste, M. (2019). Ups and downs in the joy of motherhood: Maternal well-being as a function of psychological needs, personality, and infant temperament. *Journal of Happiness Studies*, *20*, 229-250. https://doi.org/10.1007/s10902-017-9936-0

Brianda, M. E., Roskam, I., Gross, J. J., Franssen, A., Kapala, F., Gérard, F., & Mikolajczak, M. (2021). Treating parental burnout: Impact of two treatment modalities on burnout symptoms, emotions, hair cortisol, and parental neglect and violence. *Psychotherapy and Psychosomatics.* 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*, 104699. https://doi.org/10.1016/j.chiabu.2020.104699

Cast, A. D. (2004). Well-Being and the transition to parenthood: An identity theory approach. *Sociological Perspectives, 47,* 55–78. https://doi.org/10.1525/sop.2004.47.1.55

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., Van Petegem, S., & Van der

Kaap-Deeder, J., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion, 39,* 216–236. https://doi.org/10.1007/s1103 1-014-9450-1

Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: Self-affirmation and social psychological intervention. *Annual Review of Psychology, 65,* 333-371. https://doi.org/10.1146/annurev-psych-010213-115137

Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family, 64,* 361–373. https://doi.org/10.1111/j.1741-3737.2002.00361.x

Cowan, C. P., & Cowan, P. A. (2000). *When partners become parents: The big life change for couples*. Mahwah, NJ: Lawrence Erlbaum Associates.

Davison, A. C., & Hinkley, D. V. (1997). *Bootstrap Methods and Their Application*, Chapter 5. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511802843

Erikson, E. H. (1968). *Identity, youth and crisis.* New York: Norton.

Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin, 139,* 1342-1396. https://doi.org/10.1037/a0031808

Fadjukoff, P., Pulkkinen, L., Lyyra, A. L., & Kokko, K. (2016). Parental identity and its relation to parenting and psychological functioning in middle age. *Parenting, 16,* 87-107. https://doi.org/10.1080/15295192.2016.1134989

Fujita, F., & Diener, E. (2005). Life satisfaction set point: Stability and change. *Journal of Personality and Social Psychology, 88,* 158–164. https://doi.org/10.1037/0022-3514.88.1.158

Gauthier, L., Guay, F., Senécal, C., & Pierce, T. (2010). Women's depressive symptoms during the transition to motherhood: The role of competence, relatedness, and autonomy. *Journal of Health Psychology, 15,* 1145-1156. https://doi.org/10.1177/1359105310364170

Griffith, A. K. (2020). Parental burnout and child maltreatment during the COVID-19 pandemic. *Journal of Family Violence,* 1-7. https://doi.org/10.1007/s10896-020-00172-2

Günther-Bel, C., Vilaregut, A., Carratala, E., Torras-Garat, S., & Pérez-Testor, C. (2020). A mixed-method study of individual, couple and parental functioning during the state-regulated COVID-19 lockdown in Spain. *Family Process*. https://doi.org/10.1111/famp.12585

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65,* 599-610. https://doi.org/10.1037/0022-006x.65.4.599

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

Humphreys, K. L., Myint, M. T., & Zeanah, C. H. (2020). Increased risk for family violence during the COVID-19 pandemic. *Pediatrics, 146,* e20200982. https://doi.org/10.1542/peds.2020-0982

Jungert, T., Landry, R., Joussement, M., Mageau, G., Gingras, I., & Koestner, R. (2015). Autonomous and controlled motivation for parenting: associations with parent and child outcomes. *Journal of Child and Family Studies, 24*, 1932-1942. https://doi.org/10.1007/s10826-014-9993-5

Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling, Second Edition.* New York: Guilford Publications.

Kromrey, J. D., & Foster-Johnson, L. (1998). Mean centering in moderated multiple regression: Much ado about nothing. *Educational and Psychological Measurement, 58,* 42-67. https://doi.org/10.1177/0013164498058001005

Laporte, N., Soenens, B., Brenning, K., & Vansteenkiste, M. (2021). Adolescents as active managers of their own psychological needs: The role of psychological need crafting in adolescents' mental health. *Journal of Adolescence, 88,* 67-83.

Lawson, M., Piel, M. H., & Simon, M. (2020). Child maltreatment during the COVID-19 pandemic: Consequences of parental job loss on psychological and physical abuse towards children. *Child Abuse & Neglect*, 104709. https://doi.org/10.1016/j.chiabu.2020.104709

Leijten, P., Gardner, F., Melendez-Torres, G. J., Van Aar, J., Hutchings, J., Schulz, S., ... & Overbeek, G. (2019). Meta-analyses: Key parenting program components for disruptive child behavior. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*, 180-190. https://doi.org/10.1016/j.jaac.2018.07.900.

Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality*, *42*, 58-82. https://doi.org/10.1016/j.jrp.2007.04.004

Luyckx, K., Schwartz, S. J., Goossens, L., Beyers, W., & Missotten, L. (2011). Processes of personal identity formation and evaluation. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 77-98). New York: 28 Springer. https://doi.org/10.1007/978-1-4419-7988-9_4

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, 18,* 86–109. https://doi.org/10.1080/15295192.2018.1444131

MacKinnon, D. P., Warsi, G., & Dwyer, J. H. (1995). A simulation study of mediated effect measures. *Multivariate Behavioral Research, 30,* 41-64. https://doi.org/10.1207/s15327906mbr3001_3

Marcia, J. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of Adolescent Psychology* (pp. 159 –187). New York: Wiley.

Marteau, T. M., & Bekker, H. (1992). The development of a six-item short-form of the state scale of the Spielberger State—Trait Anxiety Inventory (STAI). *British Journal of Clinical Psychology, 31*, 301–306. https://doi.org/10.1111/j.2044-8260.1992.tb00997.x

Meca, A., Paulson, J. F., Webb, T. N., Kelley, M. L., & Rodil, J. C. (2020). Examination of the relationship between parenting identity and internalizing problems: A preliminary examination of gender and parental status differences. *Identity, 20,* 92-106. https://doi.org/10.1080/15283488.2020.1737070

Meeus, W. (2011). The study of adolescent identity formation 2000-2010: A review of longitudinal research. *Journal of Research on Adolescence, 21*, 75–94. https://doi.org/10.1111/j.1532-7795.2010.00716.x

Milkie, M. A., Kendig, S. M., Nomaguchi, K. M., & Denny, K. E. (2010). Time with children, children's well-being, and work-family balance among employed parents. *Journal of Marriage and Family, 72,* 1329–1343. https://doi.org/10.1111/j.1741-3737.2010.00768.x

Nelson-Coffey, S. K., Killingsworth, M., Layous, K., Cole, S. W., & Lyubomirsky, S. (2019). Parenthood is associated with greater well-being for fathers than mothers. *Personality and Social Psychology Bulletin*, *45*(9), 1378-1390.

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,* 846–895. http://dx.doi.org/10.1037/a0035444

Neubauer, A., Schmidt, A., Kramer, A., & Schmiedek, F. (2020). A little autonomy support goes a long way: Daily autonomy-supportive parenting, child well-being, parental need fulfillment, and change in child, family, and parent adjustment across the adaptation to the COVID-19 pandemic. *Child Development*. https://doi.org/10.1111/cdev.13515.

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment, 5,* 164–172. https://doi.org/10.1037/1040-3590.5.2.164

Piotrowski, K. (2018). Adaptation of the Utrecht-Management of Identity Commitments Scale (U-MICS) to the measurement of the parental identity domain. *Scandinavian Journal of Psychology, 59,* 157–166. https://doi.org/10.1111/sjop.12416

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

Radloff, S. L. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1,* 385-401. https://doi.org/10.1177/014662167700100306

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

Rosseel, Y. (2012). lavaan: An R package for Structural Equation Modeling. *Journal of Statistical Software, 48,* 1-36. http://www.jstatsoft.org/v48/i02/

Ross-Plourde, M., & Basque, D. (2019). Motivation to become a parent and parental satisfaction: The mediating effect of psychological needs satisfaction. *Journal of Family Issues, 40,* 1255–1269. https://doi.org/10.1177/0192513x19836458

Russell, B. S., Hutchison, M., Tambling, R., Tomkunas, A. J., & Horton, A. L. (2020). Initial challenges of caregiving during COVID-19: Caregiver burden, mental health, and the parent–child relationship. *Child Psychiatry & Human Development, 51,* 671–682. https://doi.org/10.1007/s10578-020-01037-x

Ryan, R. M., & Deci, E. L. (2003). On assimilating identities to the self: A self-determination theory perspective on internalization and integration within cultures. In M. R. Leary, & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 253-274). New York: Guilford Press.

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness.* New York: Guilford Publications.

Schrooyen, C., Beyers, W. & Soenens, B. (2019, August). How to avoid that parenting burns you out: On the importance of having a clear identity as a parent. Paper presented at the 19th European Conference on Developmental Psychology (EDCP), Athens, Greece.

Schwartz, S. J., Kurtines, W. M., & Montgomery, M. J. (2005). A comparison of two approaches for facilitating identity exploration processes in emerging adults: An exploratory study. *Journal of Adolescent Research, 20,* 309-345. https://doi.org/10.1177/0743558404273119

Soenens, B., & Vansteenkiste, M. (2011). When is identity congruent with the self? A self-determination perspective. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research (pp. 381-402)*. New York: Springer.

Trentacosta, C. J., Hyde, L. W., Shaw, D. S., Dishion, T. J., Gardner, F., & Wilson, M. (2008). The relations among cumulative risk, parenting, and behavior problems during early childhood. *Journal of Child Psychology and Psychiatry, 49,* 1211-1219 https://doi.org/10.1111/j.1469-7610.2008.01941.x

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,* 177–202. https://doi.org/10.1080/15295192.2019.1615791

Van Hiel, A., & Vansteenkiste, M. (2009). Ambitions fulfilled? The effects of intrinsic and extrinsic goal attainment on older adults' ego-integrity and death attitudes. *The International Journal of Aging and Human Development, 68,* 27-51. https://doi.org/ 10.2190/ag.68.1.b

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

Weinstein, N., & Ryan, R. M. (2011). A self-determination theory approach to understanding stress incursion and responses. *Stress and Health, 27,* 4–17. https://doi.org/10.1002/smi.1368

Zhang, Z., & Yuan, K.-H. (2018). *Practical Statistical Power Analysis Using Webpower and R* (Eds). Granger, IN: ISDSA Press.

Table 1

Indirect Effects (Standardized Coefficients)

	β	*p*-value	95%-CI
Positive parental experiences			
Autonomy	.14	< .001	[.10, .24]
Competence	.03	.50	[-.07, .14]
Relatedness	.12	< .001	[.09, .20]
Negative parental experiences			
Autonomy	-.15	< .001	[-.31, -.17]
Competence	-.21	< .001	[-.45, -.24]
Relatedness	-.05	.007	[-.13, -.02]
Life satisfaction			
Autonomy	.14	< .001	[.13, .33]
Competence	.16	< .001	[.12, .41]
Relatedness	.05	.04	[.00, .15]
Life satisfaction Controlled			
Autonomy	.11	< .001	[.08, .25]
Competence	.10	.02	[.03, .29]
Relatedness	.03	.14	[-.02, .11]
Ill-being			
Autonomy	-.08	.004	[-.15, -.03]
Competence	-.21	< .001	[-.31, -.13]
Relatedness	-.08	.001	[-.13, -.03]
Ill-being Controlled for T1			
Autonomy	-.05	.03	[-.09, -.01]
Competence	-.07	.03	[-.14, -.01]
Relatedness	-.05	.004	[-.08, -.02]

Table 2

Standardized Regression Coefficients with the Unique and Interactive Roles of Cumulative Risk and Parental Identity

	Basic psychological needs			**Parental outcomes**		**General mental health outcomes**	
	Autonomy satisfaction	Competence satisfaction	Relatedness satisfaction	Positive parental experiences	Negative parental experiences	Life satisfaction without / with control T1	Ill-being without / with control T1
Gender	-.03	-.02	.08	.09*	.06	.03 / .03	.00 / -.04
Age	.10**	.06*	-.17***	-.04	-.16***	.02 / .02	-.10* / -.08**
Cumulative risk	-.24***	-.14***	-.13**	-.17***	.26***	-.20*** / -.03	.26*** / .05
Corresponding outcome at T1						.35***	.72***
Parental identity	.52***	.68***	.47***	.51***	-.51***	.30*** / .13 ***	-.29*** / -.10***
Cumulative risk X Parental identity	-.01	.04	.00	-.05	-.06	.06 / .02	-.06 / -.01
R^2	.42	.56	.28	.31	.48	.18 / .46	.22 / .67

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Table 3

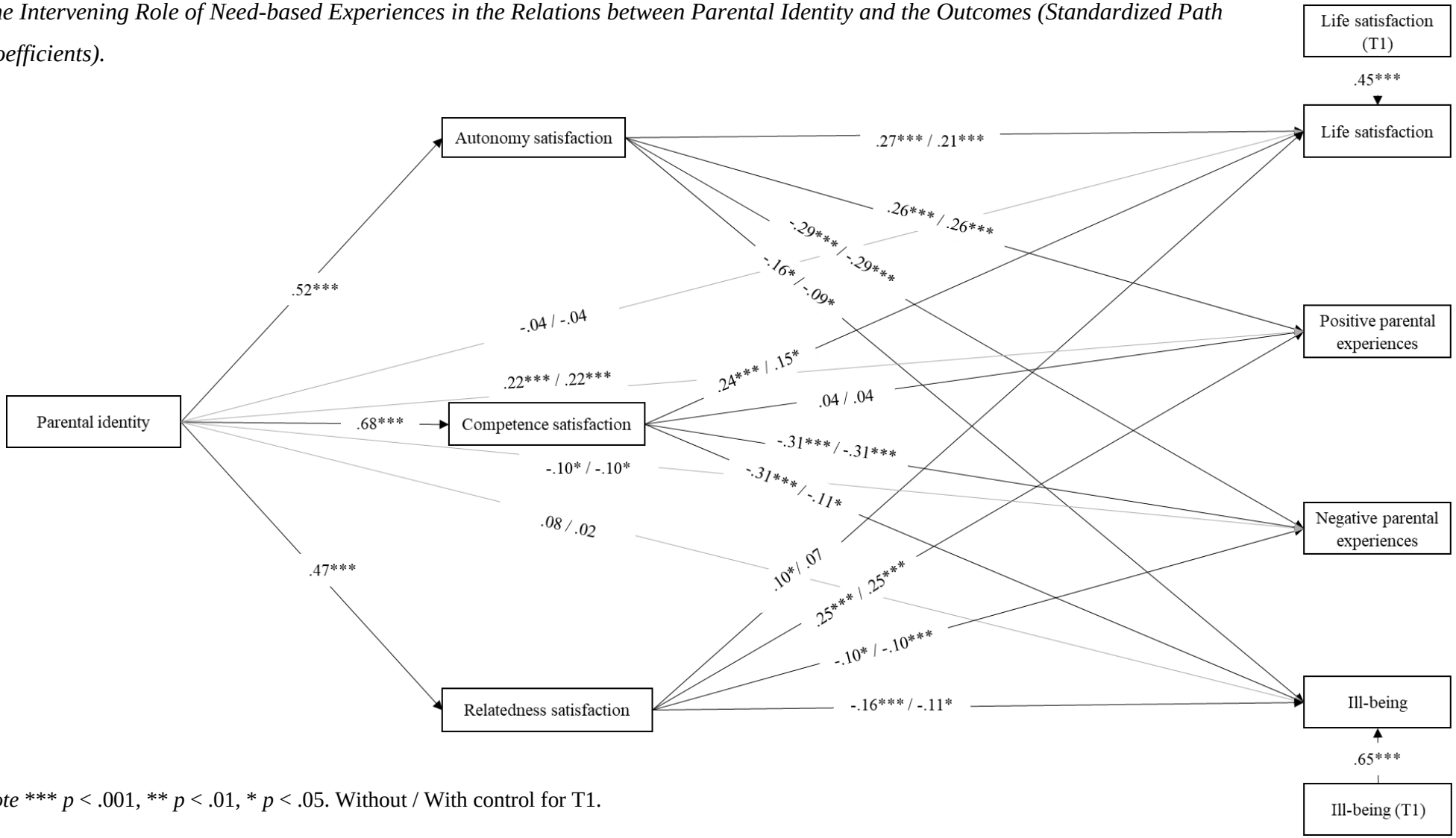
Standardized Regression Coefficients with The Unique and Interactive Roles of Cumulative Risk and Needs

	Parental outcomes		**General mental health outcomes**	
	Positive parental experiences	Negative parental experiences	Life satisfaction without / with control T1	Ill-being without / with control T1
Gender	.09*	.05	.03 / .03	.01 / -.03
Age	-.02	-.13***	.00 / .00	-.09* / -.09**
Cumulative risk	-.05	.11***	-.08 / -.02	.15* / .02
Corresponding outcome at T1			.31***	.69***
Autonomy satisfaction	.28***	-.30***	.28*** / .19***	-.15** / -.06
Competence satisfaction	.18***	-.37***	.20*** / .06	-.26*** / -.07
Relatedness satisfaction	.27***	-.11**	.10* / .04	-.26*** / -.08*
Cumulative risk X Autonomy satisfaction	.10	-.07	-.02 / -.03	-.04 / -.05
Cumulative risk X Competence satisfaction	-.04	-.04	.08 / .03	-.03 / .05
Cumulative risk X Relatedness satisfaction	-.03	.03	.03 / .05	.01 / -.05
R^2	.42	.64	.30 / .50	.35 / .69

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Figure 1

The Intervening Role of Need-based Experiences in the Relations between Parental Identity and the Outcomes (Standardized Path Coefficients).



Note *** $p < .001$, ** $p < .01$, * $p < .05$. Without / With control for T1.

Supplementary Materials

Table 1. *Overview of the Risk Variables and Their Relationship with the Outcome Variables*

Risk variables	**N**	**%**	**F**	***df***	***p*-value**
Family characteristics					
Family structure			1.90	32, 1723	.002
Intact family	314	63.7			
Single parent family	84	17.0			
Reconstituted family	50	10.1			
Combination of above/Other	42	8.5			
Marital status			1.06	8, 467	.39
Single	84	17.0			
Partner	408	82.8			
Number of biological children			0.37	8, 467	.94
0	14	2.8			
1	126	25.6			
2	205	41.6			
3	113	22.9			
4	27	5.5			
>4	7	1.4			
Number of children living at home			0.50	8, 467	.86
0	22	4.5			
1	144	29.2			
2	208	42.2			
3	91	18.5			
4	22	4.5			
>4	5	1.0			
Number of children within a specific age group					
Children with age 0-4	90	18.3	3.33	8, 467	.001
Children with age 5-9	168	34.1	4.09	8, 467	<.001
Children with age 10-14	237	47.1	1.30	8, 467	.24
Children with age > 15	226	45.8	0.76	8, 467	.64
Child characteristics					
One or more children with emotional problems	118	23.9	2.14	8, 475	.03
One or more children with behavioral problems	83	16.8	3.24	8, 475	.001
One or more children with a medical condition	75	15.2	0.95	8, 475	.47

Risk variables	N	%	F	*df*	*p*-value
One or more children with a mental disability	27	5.5	0.56	8, 475	.81
One or more children with a physical disability	20	4.1	1.75	8, 475	.09
Contextual Characteristics					
Educational level			0.34	8, 299	.95
No higher education	111	22.5			
College degree	202	41.0			
University degree	154	31.2			
Unknown	26	5.3			
Perceived household income			6.60	8, 299	<.001
Sufficient	406	82.4			
Not sufficient	86	17.4			
Work situation			0.64	8, 299	.75
Full-time employed	178	36.1			
Part-time employed	137	27.8			
Temporary unemployed	45	9.1			
Unemployed	78	15.8			
Other	54	11.0			
Working environment			2.60	8, 299	.01
Full-time teleworking	161	32.7			
Part-time teleworking, part-time on location	86	17.4			
Full-time on location	67	13.6			
Not working	177	35.9			
Living environment			0.74	8, 299	.66
Rural area	43	8.7			
Village or town	298	60.4			
City	151	30.6			

Table 2. *Descriptives of and Pearson Correlations between the Study Variables*

	1	2	3	4	5	6	7	8	9	10	11
1. Cumulative risk	-										
2. Parental identity	-.21*	-									
3. Autonomy satisfaction	-.37**	.59**	-								
4. Relatedness satisfaction	-.19**	.47**	.49**	-							
5. Competence satisfaction	-.31**	.73**	.69**	.54**	-						
6. Positive parental experiences	-.25**	.52**	.55**	.52**	.52**	-					
7. Negative parental experiences	.41**	-.60**	-.70**	-.47**	-.72**	-.58**	-				
8. Life satisfaction (T1)	-.31**	.33**	.42**	.33**	.43**	.34**	-.43**	-			
9. Life satisfaction (T2)	-.28**	.36**	.49**	.37**	.48**	.36**	-.48**	.62**	-		
10. Ill-being (T1)	.34**	-.33**	-.43**	-.34**	-.49**	-.32**	.52**	-.61**	-.70**	-	
11. Ill-being (T2)	.35**	-.37**	-.49**	-.40**	-.53**	-.38**	.60**	-.70**	-.59**	.80**	-
M	1.80	3.81	3.60	4.48	3.87	4.06	2.24	3.02	3.01	1.90	2.01
SD	1.27	0.60	0.79	0.60	0.76	0.76	0.96	0.98	0.96	0.66	0.62
Possible range	0-7	1-5	1-5	1-5	1-5	1-5	1-5	1-4	1-4	1-4	1-4
Missing values (%)	0.80	0.40	0.80	0.80	0.80	0.60	0.60	0.00	0.00	0.20	0.20

**$p < .001$. T = Timepoint. $N = 492$.

Table 3. *Correlations between the Different Parental Identity Dimensions from the DIDS, Including Exploration, and the Other Study Variables.*

	Commitment	Exploration	Rumination
Commitment	-		
Exploration	-.19**	-	
Rummination	-.55**	.42**	-
Autonomy satisfaction	.43**	-.20**	-.52**
Relatedness satisfaction	.37**	-.06	-.33**
Competence satisfaction	.61**	-.25**	-.65**
Positive parental experiences	.38**	-.02	-.37**
Negative parental experiences	-.44**	.27**	.61**
Life satisfaction	.27**	-.08	-.31**
Ill-being	-.29**	-.14**	.38**

**$p < .001$. $N = 492$.

Table 4. *Statistical power achieved for each individual path in the structural model tested in this study (Figure 1)*

Path Coefficient	**Statistical Power**
Parental identity -> Autonomy	>.99
Parental Identity -> Competence	>.99
Parental Identity -> Relatedness	>.99
Autonomy -> Life Satisfaction	>.99
Autonomy -> Ill-being	.88
Autonomy -> Positive parental experiences	.99
Autonomy-> Negative parental experiences	>.99
Competence -> Life Satisfaction	.99
Competence -> Ill-being	>.99
Competence -> Positive parental experiences	.87
Competence -> Negative parental experiences	.45
Relatedness -> Life Satisfaction	.56
Relatedness -> Ill-being	.89
Relatedness -> Positive parental experiences	.99
Relatedness -> Negative parental experiences	.50
Parental Identity -> Autonomy -> Positive parental experiences	.99
Parental Identity -> Autonomy -> Negative parental experiences	>.99
Parental Identity -> Autonomy -> Life Satisfaction	>.99
Parental Identity -> Autonomy -> Ill-being	.87
Parental Identity -> Competence -> Positive parental experiences	.15
Parental Identity -> Competence -> Negative parental experiences	>.99
Parental Identity -> Competence -> Life Satisfaction	.99
Parental Identity -> Competence -> Ill-being	>.99
Parental Identity -> Relatedness -> Positive parental experiences	.98
Parental Identity -> Relatedness -> Negative parental experiences	.49
Parental Identity -> Relatedness -> Life Satisfaction	.55
Parental Identity -> Relatedness -> Ill-being	.89

Table 4 presents the results of post-hoc power analyses determining the actually achieved power in our study. We relied on Monte Carlo (MC) simulations using the R package 'WebPower' (Zhang & Yuang, 2018) to assess the statistical power of a complex path model as in the current manuscript. Typically, this method assumes that the sampling distribution of a statistic is known under the null hypothesis (i.e., normal distribution). The MC simulations generate data given a particular sample size and parameters resulting in a test statistic. When being larger than the critical value (given a significance level of $p < .05$), the null hypothesis is rejected. We repeated this procedure 1000 times, with the ratio of the number of significant tests by the number of simulations reflecting the statistical power. This procedure is useful because it provides a power estimate for each individual parameter in the model. We also included all indirect pathways and we allowed all parameters to be estimated freely. As shown in Table 4, most path coefficients in the model achieved sufficient power (i.e., > .800). Specifically, all paths from parental identity to the needs displayed sufficient power, as did 9 out of 12 paths from the needs to the outcomes, and 9 out of 12 indirect effects.