

Reappraisal, Social Support, and Parental Burnout

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Author Contributions

A.G. shared the co-first authorship with G.-X.L. A.G. designed and initiated the study, from which the current data were drawn. A.G., J.G., I.R., G.A., D.S., A.B.-M., K.-C.B., D.M.-M., M.M., and A.M.U.-B. collected the data in their own country and performed or supervised

the translation process of the material. G.-X.L. merged the data. H.O. performed preliminary analyses on the dataset and wrote a preliminary report that informed the current study. G.-X.L. conducted the main analyses. G.-X.L., J.G., and M.M. drafted the first version of the manuscript. A.G. and I.R. provided critical revisions. G.A., A.B.-M., K.-C.B., D.M-M, M.M., I.R., D.S., and A.M.U.-B. are alphabetically ordered by last name. All authors approved the final version of the manuscript for submission.

Protections of Research Participants

The study was carried out in accordance with the World Medical Association Declaration of Helsinki. All collaborating countries submitted the study to the local Ethics committee for approval. The study conducted in Belgium was approved by the committee in the Psychological Sciences Research Institute, University of Louvain (Protocol number 17-09: Antécédents et conséquences du burnout parental); the study in USA was approved by Stanford University IRB (IRB2-eProtocol 44889 #Registration 349 IRB-18-0472); the study in Poland was approved by the Ethics Committee of the SWPS University of Social Sciences and Humanities (WKEB53/12/2018/WKE-S-27-X-44); the study in Turkey was approved by Bahcesehir University (20021704-604.01.01-125); the study in Peru was approved by The Research Committee of Universidad de San Martín de Porres (no reference number provided by the Ethics committee).

Open Practices Statement

The main study variables have been made available on a permanent third-party archive,

Open Science Framework:

https://osf.io/bw5n3/?view_only=0a9e3d7a4e9f4c29ae1ae0d3090071f5

Declaration of Conflict of Interest

M.M. and I.R. founded the Training Institute for Parental Burnout (TIPB) which delivers training on parental burnout to professionals. The TIPB did not participate in the funding of this study, nor did it influence the process, the results, or their interpretation in any manner.

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Abstract

Objectives: Parental burnout is a prevalent condition that affects parents' functioning and health. While various protective factors have been examined, little is known about their interplay. In the current study, we examined the joint effect of two protective factors against parental burnout (one external—social support, and one internal—cognitive reappraisal). We were specifically interested in whether the presence of one factor could compensate for the lack of the other.

Methods: To address this question, 1,835 participants were drawn from five countries: United States, Poland, Peru, Turkey, and Belgium.

Results: Results suggested that both social support and cognitive reappraisal were associated with lower parental burnout. An interaction was also found between the resource factors, such that the presence of cognitive reappraisal compensated for the absence of social support.

Conclusions: These findings point to ways in which parental burnout could be reduced, especially in situations where social support is not easily available.

Keywords: emotion regulation, exhaustion, parenting, loneliness, resources

Reappraisal, Social Support, and Parental Burnout

Imagine a couple who are parents to several children. In the past, they were extremely engaged parents, attending to their children's emotional and physical needs. Recently, however, they have begun to feel increasingly exhausted in their parenting role. This exhaustion has progressively led them to distance themselves from their children. They love their children, but no longer take pleasure in parenting. These parents are experiencing what is known as parental burnout (Mikolajczak et al., 2019; Roskam et al., 2018).

Unlike ordinary and transient parenting stress, parental burnout is a chronic stress-related syndrome experienced in the parental role. It denotes chronic suffering that occurs when parents' resources are unable to compensate for their parenting stress over a chronic period (cf. three months). Parental burnout as a chronic syndrome is not only evident in how parents feel but also manifested in parents' bodies. Studies have shown that parental burnout can cause a dysregulation in the hypothalamic-pituitary-adrenal axis, leading to elevated hair cortisol levels over three months. Specifically, the cortisol level of burnout parents can be twice as high as that of demographically matched counterparts (Brianda, Roskam, & Mikolajczak, 2020) and even higher than that of patients with severe chronic pain (see Mikolajczak et al., 2021). This finding further indicates how intensely burnout parents can suffer.

Alongside such intense suffering, parental burnout carries a plethora of negative consequences for both concerned parents and their children. On the parents' side, studies have shown parental burnout significantly deteriorates parents' mental and physical health, e.g., increased suicidal ideations, and parental behaviors, e.g., increased neglect and violence (Brianda, Roskam, Gross, et al., 2020; Mikolajczak et al., 2019). On the children's side, parental burnout jeopardizes children' mental health, e.g., increased depressive symptoms (Yang et al., 2021). Parental burnout explains the occurrence of these consequences even after controlling for the effects of other indicators of parental well-being, such as parental depressive symptoms (Mikolajczak et al., 2020). Taken together, these studies highlight the severity of parental burnout and explain why hundreds of researchers across the world are intent on exploring protective factors that shelter parents from parental burnout (e.g., Sorkkila & Aunola, 2020; Szczygiel et al., 2020).

Among the protective factors investigated so far (for a review, see Mikolajczak et al., 2021), social support has received particular attention. Social support (specifically, perceived social support) refers to individual's perception of their potential access to support from their social network (Uchino, 2009). Because seeking social support is one of the ways parents cope with parenting stresses (e.g., Masarik & Conger, 2017), it is not surprising that prior studies nominated perceived social support as a potent protective factor against parental burnout (Ardic, 2020; Lindström et al., 2011; Yamoah, 2021). In fact, they noted that such

beneficial effects are evident over and above the effects of socio-demographic factors and parents' personality traits (Szczygieł et al., 2020).

As important as social support is (Geens & Vandebroek, 2014; Taraban & Shaw, 2018), social support is not always available. For example, parents may need to move to another part of the country, or even to another country, which may dramatically limit social support. A lack of social support can also arise from external causes, as the outbreak of the COVID-19 pandemic and the related lockdown made it very salient. Whatever its causes, the lack of social support does not lead to parental burnout in all parents. According to the balance between risks and resources theory of parental burnout (Mikolajczak & Roskam, 2018), this may be because the absence of one important resource (e.g., social support) can be compensated by the presence of another resource of equal or higher weight.

One such resource is the internal resource of cognitive reappraisal – thinking differently about an emotion-triggering episode in order to manage emotion (Gross & John, 2003). Unlike personality attributes, reappraisal is a skill that can be taught and thereby impact people's emotions in meaningful ways (for a recent study; see Wang et al., 2021). When parents routinely apply reappraisal in their daily lives, this skill can mark parents' neural system in a way that automatically influences parental emotions and caregiving strategies (see Goldin et al., 2008). For example, when parents encounter a difficult parenting situation,

those with a higher propensity for reappraisal can more easily modify their subjective experience by reinterpreting these situations to reduce their emotional impact, even without knowing it (see discussion in Lorber, 2012).

Given the above, it is not surprising that the use of reappraisal has been linked to a range of positive outcomes in parenting (Finkel et al., 2013). For example, reappraisal has been shown to decrease parenting stress and increase resilience in the face of stressors (Carreras et al., 2019). In line with these findings, evidence suggests that adopting reappraisal makes parents less vulnerable to parental burnout (Lin et al., 2021; Prikhidko & Swank, 2019). Kuo and Johnson (2021) have recently shown that reappraisal significantly buffers the harmful effect of marital dissatisfaction on parenting stress. These prior findings lead us to believe reappraisal can reduce parental burnout and buffer the effect of the lack of social support on burnout.

The Present Study

The goal of the present study was to examine relations of social support, reappraisal, and their interplay to parental burnout. We hypothesized that both social support (Hypothesis 1) and reappraisal (Hypothesis 2) would be negatively associated with parental burnout. Furthermore, we hypothesized that the use of reappraisal would moderate/buffer the association of lack of social support with parental burnout (Hypothesis 3).

Recently, Roskam et al. (2021) has revealed that the prevalence of parental burnout varies dramatically around the world: the highest rates are found in Western countries (e.g., around 8% for Belgium, Poland, and US) and the lowest rates in non-Western countries (e.g., less than 1% in some countries including Turkey and Peru). Given these variations, we decided to collect data across countries around the world that differ in their degree of parental burnout. Specifically, we drew participants from both Western (Belgium, Poland, US) and Non-Western (Peru and Turkey) countries. This procedure had the further advantage to broaden the sociodemographic (e.g., Western or Non-Western) background of our participants and even decrease the current bias in parenting research where 95% studies come from Western countries (see Arnett, 2008; Bornstein, 2013; Keller, 2018; Lansford, 2021; Mistry & Dutta, 2015).

Method

Participants

A total of 1,835 parents from 5 countries (USA, Belgium, Poland, Peru, and Turkey) participated in the study. The protocol included informed consent, demographic questions, and questionnaires measuring the variables of interest in this study. The protocol was translated and adapted to the native language of each country. The recruitment mode (online or on paper and pencil) varied according to local practices. The study was submitted to the local Ethics Committee in each country for approval. Parents were eligible to be recruited

into the study if they met the inclusion criterion of still having at least one child living at home. Table 1 presents the sociodemographic profiles of parents in each country.

Measures

Sociodemographic Factors

The participants were asked about their gender (father or mother); age; educational level (number of successfully completed school years since age 6); number of children currently living in the household; age of the oldest child; number of hours spent with children per day (without taking the night into account); working status (paid professional activity); family type (two opposite-sex parents, two same-sex parents, single parent, step-family, multigenerational family, polygamous family, or others); and neighborhood profile (disadvantaged, average, or prosperous).

Social Support

Social support was assessed by the 12-item Interpersonal Support Evaluation List (Cohen et al., 1985). This questionnaire (e.g., “If I were sick, I could easily find someone to help me with my daily chores.”) assessed perceived quality of interpersonal support by a 4-point Likert scale from “*definitely false*” (0) to “*definitely true*” (3). The total score was computed by summing all item scores (after 6 items reverse-scored) so that higher scores indicated greater perceived social support. The Cronbach’s alpha of the score in the current

whole sample was .88.

Reappraisal

Reappraisal was measured using the reappraisal subscale of the Emotion Regulation Questionnaire (ERQ) (Gross & John, 2003). It is a 6-item assessment (e.g., “I control my emotions by changing the way I think about the situation I’m in.”) with each item rated on a 7-point Likert scale from “*strongly disagree*” (1) to “*strongly agree*” (7). The total score was computed by averaging the item scores, and higher scores reflected greater tendency to use reappraisal. The Cronbach’s alpha of the score in the current whole sample was .86.

Parental Burnout

Parental burnout was measured with the Parental Burnout Assessment (PBA, Roskam et al., 2018). It is a 23-item questionnaire (e.g., “I feel completely run down by my role as a parent”). Items are rated on a 7-point Likert scale from “*never*” (0) to “*everyday*” (6), and the total score was computed by summing the item scores so that higher scores indicated greater burnout. The Cronbach’s alpha of the score in the current whole sample was .96.

Results

Preliminary Analyses

Since the questionnaires measuring the variables of interest were translated and adapted into several languages (including Polish for Poland, French for Belgium, Spanish for Peru,

Turkish for Turkey, and English for USA), we needed to ensure their linguistic equivalence before carrying out the analyses (Putnick & Bornstein, 2016). For parental burnout, Roskam et al. (2021) have already tested and shown the measurement invariance of the PBA across 21 languages, including the versions used for the current study. For the other two study variables (i.e., social support and reappraisal), we tested measurement invariance across the five languages by multigroup Confirmatory Factor Analysis (CFA) of *lavaan* (Rosseel, 2012) on R version 4.0.2. We performed the analyses with weighted least square with mean and variance estimation method and tested the model, respectively, in which all corresponding items represent the construct.

Three steps of measurement invariance tests were performed. First, we evaluated the overall fit of the measurement model in which all parameters were freely estimated across languages. *Configural invariance* of the measurement model could be assumed when the model fit values of both comparative fit index (CFI) and the Tucker-Lewis Index (TLI) were close to .95, and the value of standardized root mean square residual (SRMR) was near .08 (Hu & Bentler, 1999). We next compared the model fits between this model and the metric invariance model (the item loadings on the factors were fixed to be equal across languages) to test metric invariance. Lastly, we compared the model fits between the metric invariance and the scalar invariance model (the item intercepts were further fixed to be equal across languages) to examine scalar invariance. Following recent studies (e.g., Wuyts et al., 2015),

we assumed *metric* and *scalar invariance*, respectively, when two of the following criteria of model fit comparison were met: (1) the difference in CFI (ΔCFI) is near .010; (2) the difference in TLI (ΔTLI) is around .020; (3) the difference in SRMR (ΔSRMR) is around .030 for assuming metric invariance and around .015 for assuming scalar invariance (Putnick & Bornstein, 2016).

Results of the measurement invariance tests for social support and reappraisal are presented in Table 2. All of them met all our criteria. Therefore, the pattern of free and fixed loadings on the latent variables (indicated by configural invariance), factor loadings on the latent variables (suggested by metric invariance), and the levels/intercepts of the underlying items (indicated by scalar invariance) were equal for the measurements used in each country/assessed by each language. These findings indicated that the different language versions of measures assessed the same psychological constructs despite the differences in language. Table 3 presents descriptive statistics and Cronbach's alpha of these study variables. Spearman's correlations between the study variables are presented in Table 4.

Main Analyses

Given that we collected data across different countries, we first estimated the extent of variation in parental burnout between countries—intraclass correlation coefficient (ICC). The ICC of parental burnout is 0.05, which implied the existence of a nested data structure in

which individual-level responses of parental burnout were nested within countries. Therefore, multilevel modeling was used to analyze the association between variables of interest (Peugh, 2010). We performed multilevel regression model analyses with regression intercepts set to be freely estimated across countries by *lme4* (Bates et al., 2014).

Before creating interaction terms and performing analyses, social support and reappraisal were grand mean centered to avoid multi-collinearity. All study variables were entered in three steps to answer our research questions. Sociodemographic variables were entered in step 1 as a baseline model that summarized the relations of sociodemographic factors to parental burnout (see Model 1 in Table 5). We introduced main effect variables, including social support and reappraisal in step 2. Results (see Model 2 in Table 5) demonstrated that after accounting for sociodemographic factors, both social support ($b = -10.20$, $SE = 0.53$, $p = .000$) and reappraisal ($b = -2.86$, $SE = 0.54$, $p = .000$) significantly predicted parental burnout, thereby supporting our Hypotheses 1 and 2. The percentage of explained variance between countries (R_2^2) and within countries (R_1^2) were also calculated (Raudenbush & Bryk, 2002). The main effect model explained 34% of parental burnout variance between countries and 26% within countries. The main effect model (Model 2) fitted the data better than the sociodemographic factor model (Model 1) ($\chi^2(2) = 407.58^{***}$).

To test Hypothesis 3, we included the two-way multiplicative term between reappraisal

and social support in the step 3 (see Model 3 in Table 5). The interaction term significantly predicted parental burnout ($b = 2.16$, $SE = 0.46$, $p = .000$). In total, the interaction effect model (Model 3) explained 36% of parental burnout variance between countries and 27% within countries. The interaction effect model (Model 3) fitted the data better than the main effect model (Model 2) ($\chi^2(1) = 22.03^{***}$). Simple slope tests further revealed that the negative correlations between social support and parental burnout decreased as reappraisal increased from low ($b = -12.28$, $SE = 0.69$, 95% CI of $b = [-13.62, -10.93]$) to high ($b = -7.97$, $SE = 0.71$, 95% CI of $b = [-9.36, -6.58]$), although they remained significant (see Figure 1 for interaction plot). These results supported our Hypothesis 3.

Complementary Analyses

Following reviewers' suggestions, we first explored whether subdividing parental burnout into subscales would lead to different results. To do so, we repeated the analysis of the interaction effect model for each subscale of parental burnout separately. These models yielded similar results to those obtained with the overall global score (see Table S1 in Online Supplemental Material).

Second, we examined whether another emotion regulation strategy – suppression (i.e., hide, inhibit, or reduce ongoing emotion-expressive behavior) – confounded our findings. In particular, we included both suppression and suppression*social support as covariates in our

main effect and interaction effect models (see Table S3 in Online Supplemental Material).

Results showed that suppression positively predicted parental burnout, while the interaction term between suppression and social support did not. Of interest to the current study is that even with these variables controlled for, our main findings on reappraisal remained similar.

All in all, these findings suggested little (if any) confounding effect of suppression.

Discussion

Parental burnout attracted considerable and growing attention (Brianda, Roskam, Gross, et al., 2020; Gruber et al., 2020; Mikolajczak et al., 2021). The current study showed that social support strongly protected parents from parental burnout, as did reappraisal, and the two resource factors interacted, such that the presence of reappraisal helped to compensate for the absence of social support. These findings have several noteworthy implications.

In terms of the role of social support, the present findings echo previous literature on the importance of social support (Feeney & Collins, 2015). From Figure 1, we observed that the effect size of social support was so strong that it could compensate for low levels of reappraisal. It is probably not surprising that social support has such powerful effects because it can indeed benefit parents in many ways: receiving concrete help (e.g., having someone to watch over the kids when necessary), benefitting from vicarious experience, receiving advice when stuck in tricky parenting situations, and having people to hang out with and take a

breather from parenting. These are just several examples of how social support can contribute to reducing parenting stress. Unsurprisingly, Gugliandolo et al. (2021) proposed and showed that social support is a central resource that contributes to satisfying all parental basic needs and making parents resilient in the face of obstacles and distress.

Our findings also align with much of the prior emotion regulation literature (McRae et al., 2012) regarding the beneficial effect of reappraisal. Prior studies have shown that reappraisal in general contexts – the general propensity to use reappraisal – is conducive to better adjustment in parenting (the effect sizes are even larger than reappraisal in specific parenting situations, e.g., discipline encounters; see Lorber, 2012). Like previous studies, the current study assessed reappraisal in general contexts; we found it powerful to the extent that it not only predicted less parental burnout but even partially offset the harm of a lack of social support. Merely one emotion regulation strategy – reappraisal – could lessen the harm of lacking social support is exciting, especially as reappraisal can be taught (e.g., Preuss et al., 2021). Taking a step further, future studies would also benefit from systematically examining the effects of other or combined regulation strategies (i.e., emotion polyregulation; Ford et al., 2019). Emotion regulation strategies may work together to offset the harm resulting from situations where lacking social support is inevitable. In sum, since parenting is one of the most emotion-abundant contexts in one's life (Kerr et al., 2021; Lin et al., 2021), the benefits of examining the role of emotion regulation in parenting is clear.

At a practical level, our findings open new directions to reduce parental burnout. One direction is increasing perceived social support. However, this may not always be possible (e.g., during the COVID-19 lockdown or living away from family) and it sometimes takes time to build social networks (e.g., in the case of expatriates). Under these circumstances, professionals (or parents themselves) may rely on internal resource factors to rebalance parents' imbalance in their parenting life and reduce the vulnerability to parental burnout. Although there could be various candidates other than emotion regulation, reappraisal appears to be an especially interesting strategy. One of the reasons is that reappraisal can be relatively easily (i.e., without onsite training) taught. For instance, Preuss (2021) demonstrated that parents assigned to a brief two-session online intervention turned out to have significantly lower parenting stress than those assigned to the control-group. Together with our findings, intervening on the ability to reappraise might be an effective way to reduce parental burnout. Experimental or treatment research is now needed to examine this proposal.

Despite the strengths of the current study, several limitations should be acknowledged. First, the study used a correlational design and relied upon self-report data. Such a design cannot support causal inferences. It should also be noted that although we used the wording "effect" to indicate the association of variables throughout our results and discussion, we are not referring to a causal relation. To strengthen the case for causal inferences, future work could adopt experimental designs (reappraisal; McRae et al., 2012). Second, the association

of reappraisal and social support with parental burnout may be due (in part) to the fact that these factors serve as protective factors buffering the impact of child variables (e.g., difficult temperament, disability) on parental burnout. To provide a complete picture, future studies would be helpful to include these variables and test their interaction with social support or reappraisal on parental burnout. At last, the restricted country-level size and the unbalanced sample size in each country prevented us from testing country-level hypotheses including how cultural norms moderated the effects of predictors on parental burnout. However, the current study constitutes a solid basis on which future research can build using larger samples from more countries.

Conclusion

Both reappraisal and social support significantly predicted less parental burnout, even after controlling sociodemographic factors. Furthermore, reappraisal significantly lessened the detrimental effect of lacking social support on parental burnout. This finding is of particular interest in the many situations in which social support is unavailable.

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Table 1

Sociodemographic Profiles of Parents from Five Countries

Country	N	Gender (% mothers)	Age ^a	Educational level ^a	Working status (% paid profession)	Family type					Number of children in the household ^a	Age of the oldest child ^a	Hours with children ^a	Neighborhood			
						% Two opposite-sex parents	% Single parent	% Step-family	% Two same-sex parents	% Multigenerational				% Polygamous	% Disadvantaged	% Average	% Prosperous
Belgium	169	80	40.45 (8.98)	15.10 (3.49)	80	66	18	14	0	1	0	1.89 (0.93)	12.28 (9.28)	4.76 (3.01)	4	53	44
Peru	185	80	42.11 (13.01)	15.16 (3.99)	72	69	11	2	0	6	0	1.88 (1.56)	13.07 (11.13)	7.86 (5.82)	5	42	52
Poland	1,071	61	36.50 (7.87)	16.71 (3.89)	85	82	9	6	1	2	0	1.74 (0.89)	9.56 (7.00)	6.20 (4.15)	6	75	19
Turkey	208	50	35.63 (5.73)	14.00 (3.94)	78	81	9	0	0	9	0	1.58 (0.75)	5.31 (5.00)	7.00 (4.89)	2	70	28
USA	202	72	36.98 (8.75)	15.05 (2.34)	82	74	15	5	0	4	0	1.97 (1.08)	10.62 (7.39)	7.43 (4.78)	6	82	12

Total	1,835	64	37.38	15.92	82	78	11	5	0	3	0	1.77 (0.99)	9.82	6.46	5	70	25
			(8.75)	(3.86)									(7.86)	(4.49)			

^a Its mean is displayed together with its standard deviations in brackets.

Table 2*Measurement Invariance Tests for Reappraisal and Social Support*

	SBS- χ^2 (df)	CFI	TLI	SRMR	Δ CFI	Δ TLI	Δ SRMR	Decision
<i>Reappraisal</i>								
Configural	297.82 (45)	0.986	0.977	0.047	-	-	-	Accept
Metric	214.98 (65)	0.986	0.983	0.054	-0.000	0.006	0.007	Accept
Scalar	299.62 (85)	0.979	0.982	0.060	-0.007	-0.001	0.006	Accept
<i>Social support</i>								
Configural	1216.45 (270)	0.971	0.964	0.064	-	-	-	Accept
Metric	1019.70 (314)	0.966	0.964	0.072	-0.005	0.000	0.008	Accept
Scalar	1311.96 (358)	0.954	0.958	0.078	-0.012	-0.006	0.006	Accept

Note. SBS- χ^2 = Satorra-Bentler Scaled χ^2 ; For CFI and TLI, robust statistics were reported. For SRMR, Bentler robust statistics were reported.

Table 3*Descriptive Statistics of Study Variables for Each Country*

Country	N	Reappraisal			Social support			Parental burnout		
		M	SD	α	M	SD	α	M	SD	α
Belgium	169	4.62	1.26	.88	24.30	8.03	.89	25.98	26.74	.97
Peru	185	4.80	1.21	.78	23.77	7.26	.84	25.59	25.13	.97
Poland	1,071	4.52	1.27	.85	25.86	7.37	.89	29.33	25.22	.96
Turkey	208	5.39	0.98	.86	28.01	6.45	.84	13.19	15.13	.91
USA	202	5.12	1.14	.93	25.59	7.91	.91	28.01	28.61	.97
Total	1,835	4.72	1.26	.86	25.72	7.46	.88	26.67	25.31	.96

Table 4*Spearman's Rank Correlation between the Study Variables at the Individual Level*

Variables	1	2	3	4	5	6	7	8	9	10	11
1 Gender											
2 Age	0.08**										
3 Educational level	-0.09**	0.06*									
4 Employment	-0.08**	-0.16**	-0.16**								
5 Number of children in the house	0.01	0.15**	-0.04	0.05*							
6 Oldest child's age	0.05*	0.73**	-0.05*	-0.10**	0.29**						
7 Hours with children	-0.16**	-0.32**	-0.09**	0.35**	0.03	-0.29**					
8 Family type	-0.08**	0.09**	-0.10**	-0.00	-0.03	0.17**	-0.04				
9 Neighborhood	0.01	0.12**	0.10**	-0.02	0.00	0.03	-0.05*	0.02			
10 Social support	0.02	-0.01	0.09**	-0.10**	-0.04	-0.01	0.05*	-0.07**	0.05*		
11 Reappraisal	-0.03	0.00	-0.05*	-0.03	-0.07**	-0.03	0.06**	-0.00	0.02	0.22**	
12 Parental burnout	-0.10**	-0.13**	0.12**	0.07**	0.06**	-0.08**	-0.02	0.02	-0.01	-0.38**	-0.22**

** $p \leq .01$. * $p \leq .05$.

Table 5*Multilevel Random Intercept Models Predicting Parental Burnout*

	Model 1 (Sociodemographic factors)		Model 2 (Main effect)		Model 3 (Interaction effect)	
	Estimate	SE	Estimate	SE	Estimate	SE
Fixed Part						
Intercept	33.37***	5.65	28.37***	4.84	27.63***	4.81
Gender (father)	-4.11**	1.24	-3.99***	1.11	-4.17***	1.10
Age	-0.08	0.11	-0.12	0.10	-0.12	0.09
Educational level	0.20	0.16	0.30*	0.14	0.31	0.14
Employment (not employed)	8.81***	1.64	5.68***	1.47	5.66*	1.46
Number of children in the house	1.78**	0.58	1.20*	0.52	1.17**	0.52
Oldest child's age	-0.50***	0.12	-0.34**	0.11	-0.32**	0.11
Hours with children	-0.53***	0.15	-0.34**	0.13	-0.34	0.13
Family (single parent)	4.36*	1.88	0.62	1.69	0.39	1.68
Family (step-family)	0.00	2.59	0.69	2.31	0.32	2.30
Family (same-sex parents)	18.40*	9.16	14.40	8.20	15.27	8.15
Family (multigenerational)	0.22	3.21	-0.19	2.87	-0.02	2.85
Family (polygamous)	15.81	24.15	3.26	21.60	2.11	21.47
Family (Others)	1.18	4.59	-1.25	4.10	-1.15	4.08
Neighborhood (average)	-6.30*	2.52	-1.87	2.26	-1.40	2.25
Neighborhood (prosperous)	-2.79	2.71	2.01	2.43	2.38	2.42
Social support	-	-	-10.20***	0.53	-10.12***	0.53
Reappraisal	-	-	-2.86***	0.54	-2.77***	0.53
Social support × Reappraisal	-	-	-	-	2.16***	0.46
Error variance (SD)						
Level-2 (countries)	6.23		6.23		4.45	
Level-1 (parents)	23.96		23.96		21.28	
Derived Estimates						
ICC	0.06		0.04		0.04	
R ² (Level-2)	-26%		34%		36%	
R ² (Level-1)	7%		26%		27%	
Model Fit						
Log likelihood	-8311.0		-8107.2		-8096.2	

AIC	16658.0	16254.4	16234.4
BIC	16757.0	16364.4	16349.9

Note. R_2^2 = the percentage of explained variance between countries; R_1^2 = the percentage of explained variance within countries. AIC = Akaike information criterion. BIC = Bayesian information criterion. Error variance across countries (higher level) in a model may increase with the addition of predictors, when entering individual-level (lower level) predictors that have small variation at the country level (higher level). It may thus result in a negative R^2 at the country level (see discussion in Snijders & Bosker, 1994).

*** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$.

Figure 1

Interaction Plot

