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Is parental burnout distinct from job burnout and depressive symptomatology?

Forthcoming in "*Clinical Psychological Science*"

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Abstract

Parenting can be difficult, and when difficulties are experienced as being chronic and/or overwhelming, parental burnout may occur. It is not yet clear, however, to what extent parental burnout can be distinguished from job burnout (which shares core definitional features) or depressive symptoms (which often co-occur with parental burnout). Here we present two studies (N = 3,482) which suggest the distinctiveness of parental burnout. First, items aimed at measuring parental burnout, job burnout, and depressive symptoms loaded on different factors. Second, although job burnout, parental burnout, and depressive symptoms had some *common consequences* (e.g., problematic alcohol use, disordered sleep, somatic complaints), parental and job burnout also each had *specific consequences* (e.g., parental neglect and parental violence for parental burnout; intent to leave the company for job burnout) that are not explained by depressive symptoms. These results support the distinctiveness of parental burnout and the added value of this construct.

Keywords: parental burnout; job burnout; parenting; stress; depression; work.

Is parental burnout distinct from job burnout and depressive symptomatology?

Parenting is widely thought to be one of the most challenging jobs a person can ever undertake. From the birth of their children or even sometimes from their conception, most parents experience stress in their parental role (for reviews, see Crnic & Low, 2002; Deater-Deckard, 2008). Being a parent requires managing daily hassles (e. g. homework, driving), acute stressors (e. g. sibling conflict, falls or accidents), and often also chronic stressors (e. g. learning disabilities, difficulties during adolescence).

When parents lack the resources needed to handle stressors related to parenting, they may develop *parental burnout*, a state of intense exhaustion related to one's parental role, in which one becomes emotionally detached from one's children and doubtful of one's capacity to be a good parent (Mikolajczak & Roskam, 2018; Roskam, Raes, & Mikolajczak, 2017). Burned out parents feel so drained by parenting that when they get up in the morning and have to face another day with their child(ren), they feel exhausted. As a result, they become emotionally distant from their children: they take care of their child(ren) on autopilot and are no longer able to show their child(ren) how much they love them. Accordingly, they do not feel that they are good parents anymore and lose the pleasure of being with their children (Roskam, Brianda, & Mikolajczak, 2018; Hubert & Aujoulat, 2018).

Until recently, research on parental burnout was confined to parents of severely ill children (e.g., Lindahl Norberg, 2007, 2010; Lindström, Åman, & Lindahl Norberg, 2010, 2011, Weiss, 2002). Now, however, the growing field of parental burnout has begun to consider a much wider range of parents. Beyond psychometric research, most efforts have been devoted to better understanding the risk factors for parental burnout. Findings show that

parents are at greatest risk when they aim to be perfect parents (Kawamoto, Furutani, & Alimardani, 2018), are neurotic or lack of emotion and stress management abilities (Lebert-Charron, Dorard, Boujut, & Wendland, 2018; LeVigouroux-Nicolas, Scola, Raes, Mikolajczak, & Roskam, 2017; Mikolajczak, Raes, Avalosse, & Roskam, 2018), lack emotional or practical support from the co-parent or from the social network more broadly (Lindström, Aman, & Lindahl Norberg, 2011; Mikolajczak, Raes et al., 2018; Séjourné, Sanchez-Rodriguez, Leboullenger, & Callahan, 2018), have poor child-rearing practices (Mikolajczak, Raes, et al., 2018), have children with special needs that interfere with family life (Gérain & Zech, 2018; Lindahl Norberg, 2007; Lindström, Aman, & Lindahl Norberg, 2010), or work part-time or are stay-at-home parents (Lebert-Charron, et al., 2018; Mehauden & Piraux, 2018) (see Mikolajczak & Roskam, 2018 for a review of risk and protection factors for parental burnout and their respective weights). We know much less about the consequences of parental burnout, but what we do know suggests that parental burnout is a serious condition with pervasive effects on the parent (increase in addictive behaviors, sleep disorders, family escape and suicidal ideations), on the couple (e.g., conflicts, adultery), and on the children (child neglect and violence) (Mikolajczak, Brianda, Avalosse, & Roskam, 2018; Mikolajczak, Gross & Roskam, 2019).

While interest in parental burnout is growing rapidly (a hundred researchers from 40 countries have recently formed a consortium to study parental burnout[1]), it is still unknown whether parental burnout is distinct from related constructs. In particular, it is unclear whether and to what extent parental burnout can be distinguished from job burnout (which shares core definitional features) or depressive symptoms (which often co-occur with parental burnout; Kawamoto et al., 2018; Lebert-Charron et al., 2018; Van Bakkel, Engel and Peters, 2018). At

[1] https://uclouvain.be/fr/instituts-recherche/ipsy/consortium-members.html

a time of unprecedented interest in parental burnout, it is crucial to assess the distinctiveness and added value of parental burnout vis-à-vis both job burnout and depressive symptoms (Bianchi, Schonfeld, & Laurent, 2015a, 2015b, 2019; Schonfeld & Bianchi, 2016).

Distinctiveness of Parental Burnout and Job Burnout

Job burnout results from prolonged exposure to high job demands in the absence of requisite resources (Demerouti, Bakker, Nachreiner, & Schaufeli, 2000; Maslach, Schaufeli & Leiter, 2001; Bakker, Demerouti, & Verbeke, 2004). The most widely used conception defines job burnout as a tri-dimensional syndrome including a state of emotional and physical exhaustion, a detached attitude toward the recipients of one's services, and a feeling of professional inadequacy leading to a decreased sense of personal accomplishment (Maslach, Jackson, & Leiter, 2010; Maslach et al., 2001). Research has shown that job burnout is associated with a host of negative outcomes, such as sleep disorders (Armon, Shirom, Shapira, & Melamed, 2008), alcohol abuse (e.g., Ahola, Honkonen, Pirkola, Isometsä, Kalimo, Nykyri, et al., 2006; Pedersen, Sørensen, Bruun, Christensen, & Vedsted, 2016), health deterioration (see Shirom, Melamed, Toker, Berliner, & Shapira, 2005 for review), low job satisfaction and strong intention to leave the company (see Alarcon, 2011 for a meta-analysis).

As noted above, the dimensions of parental burnout (i.e., exhaustion, detachment, feelings of inefficacy)[2] are the same as in job burnout – hence the name "burnout" – but the context is different (i.e. parenting versus job). But does the context in which burnout originates matter? To what extent does burnout remain "confined" to one sphere of life? Whether burnout is context-bound or context-free has been a topic of controversy since the

[2] Deductive and inductive approaches lead to very similar results (Roskam, Brianda, & Mikolajczak, 2018). The deductive approach is a theory-driven approach to parental burnout, where symptoms are deduced from the conceptualization of job burnout as composed of exhaustion, detachment, and inefficacy. The inductive approach is an empirically-driven approach to parental burnout, where symptoms are induced from the testimonies of burned out parents, without a priori commitments to the nature of these symptoms.

very emergence of the job burnout construct (e.g., Pines & Aronson, 1981; Kristensen, Borritz, Villadsen, & Christensen, 2005; Maslach et al., 2001). Some researchers view burnout as a context-free phenomenon: a state of mental, emotional, and physical exhaustion that would be evident in all spheres of life (e.g., Pines & Aronson, 1981; Malach-Pines, 2005). Others view it as a context-bound phenomenon (Bakker, Schaufeli, Demerouti, Janssen, Van Der Hulst, & Brouwer, 2000; Schaufeli, Leiter, & Maslach, 2009).

Deciding whether burnout is context-bound or context-free requires that we investigate burnout in two clearly differentiated but equally important contexts (e.g., job and parenting) in the same study, using validated and structurally similar instruments (e.g., the Maslach Burnout Inventory [MBI-GS; Maslach, Jackson, & Leiter, 2010] for job burnout and the Parental Burnout Inventory [PBI; Roskam, Raes, & Mikolajczak, 2017] for parental burnout). The recent development and validation of the Parental Burnout Inventory made that possible. If burnout is context-free (i.e., originates in one sphere of life but then equally affects all spheres of life), then job burnout and parental burnout items should load on the same latent variable. They should also have similar consequences on the parent, their spouse, their children, and their work. In this case, the construct/diagnosis of parental burnout would have no added value. By contrast, if burnout is context-bound (i.e., originates in one sphere of life and expresses itself more strongly in that sphere), then job burnout and parental burnout items should load on different factors. If so, these two construct/diagnoses might be expected to have at least partially distinct consequences.

Distinctiveness of Parental and Job Burnout vis-à-vis Depressive Symptoms

Depressive symptoms include a pervasive sadness or a markedly diminished interest or pleasure in all (or almost all) activities, associated with several other symptoms such as feelings of worthlessness or excessive guilt, difficulties concentrating or indecisiveness, psychomotor agitation or retardation, fatigue, insomnia or hypersomnia, weight gain or

weight loss, and recurrent thoughts of death (International Classification of Disorders [ICD-10, WHO, 1993]; Diagnostical and Statistical Manual of Mental Disorders [DSM-5, APA, 2013]). According to both the DSM and the ICD-10, depressive symptoms are pervasive and uncontextualized (as per ICD-10: "*The lowered mood varies little from day to day, and is often unresponsive to circumstances, yet may show a characteristic diurnal variation as the day goes on")* and are measured accordingly in all the most widely used inventories of depressive symptomatology (e.g., Beck Depression Inventory [BDI; Beck, Steer, & Carbin, 1988], Center for Epidemiologic Studies Depression Scale [CES-D; Radloff, 1977]; Hospital Anxiety and Depression Scale [HADS; Zigmond & Snaith, 1983]; Hamilton Depression Rating Scale [HDRS; Hamilton, 1960]; Patient Health Questionnaire-Depression (PHQ; Kroenke, Strine, Spitzer, Williams, Berry, & Mokdad, 2009).

Research has shown that depressive symptoms (and not only major depression) are associated with negative outcomes (Katon, 2003), some of which are common with burnout, such as sleep disorders (see Tsuno, Besset, & Ritchie, 2005 for a meta-analysis), alcohol abuse (see Lai, Cleary, Sitharthan, & Hunt, 2015 for a meta-analysis), health deterioration (e.g., Moussavi, Chatterji, Verdes, Tandon, Patel, & Ustun, 2007) or couple conflicts (e.g., Shelton & Harold, 2008). These common consequences make it all the more important to investigate the separability of parental burnout, job burnout, and depression.

If burnout turns out to be context-free, it could be difficult to distinguish it from depression (Bianchi et al., 2015a; Schonfeld & Laurent, 2016) and they might be expected to have roughly the same consequences. Parental burnout would then have no added value over the constructs of job burnout and depression. On the contrary, if burnout is context-bound, then parental and job burnout would be expected to differ from depressive symptomatology. These conditions might then have partially different consequences. If parental burnout

predicts important consequences that are not predicted by job burnout or depression, then the construct would have added value and more research into it would be warranted.

The Present Research

The goal of the present research was to examine the distinctiveness of parental burnout vis-à-vis job burnout and depressive symptoms. The most widely used means of examining distinctiveness between psychological constructs is factor analysis: a construct is deemed distinct from another if its indicators load on a different and interpretable factor (e.g., Kudielka, von Känel, Gander, & Fischer, 2004). Although this method is often considered sufficient, an additional and more clinically useful way to test construct distinctiveness is by assessing distinctiveness in terms of associations with other constructs (Uliaszek, 2015). Among these, the most clinically/practically relevant are consequences. A construct is deemed distinct from another if it has partially distinct consequences (Campbell, Bishop, Dunn, Main, Thomas, & Foster, 2013). Yet, it will be judged to have clinical added value only if the consequences in question are clinically important. We therefore assessed the distinctiveness of parental burnout vis-à-vis job burnout and depressive symptoms in two ways: factorial distinctiveness and consequence distinctiveness. Study 1 focuses on factorial distinctiveness between parental and job burnout. Study 2 replicated Study 1 in a different sample, to further assess the distinctiveness of both forms of burnout vis-à-vis depressive symptoms, and employed a prospective design to test whether the three constructs are associated with the same or different outcomes.

Based on prior work as well as theoretical considerations, we hypothesized that parental burnout would not totally overlap with job burnout or depressive symptomatology. Two studies that are consistent with this expectation are the studies of Kawamoto et al. (2018) and Van Bakkel et al. (2018) who found correlations of r = .35 and .29, respectively, between parental burnout and job burnout and of .41 and .44, respectively, between parental burnout

and depression. If these constructs overlap, the correlations would have been larger (a correlation of .44 indicates that the constructs share only 19% variance). Based on these results, we expected to find evidence for factorial distinctiveness between these constructs. Moreover, although we expected the three constructs to have common consequences (e.g., sleep disorders, somatic disorders, addictive behaviors), we expected that parental and job burnout would be have more pronounced consequences in the specific sphere of life from which they originated. Accordingly, parental burnout would have more pronounced consequences at home and job burnout more pronounced consequences at work.

Study 1:

Factorial Distinctiveness of Parental Burnout and Job Burnout

This study aimed to test the factorial distinctiveness of parental and job burnout using structurally similar instruments (i.e., the MBI and the PBI). If burnout is context-free, then job burnout and parental burnout items should load on the same latent variable. Entering all job and parental burnout items in the same factor analysis would give rise to three factors (exhaustion, detachment, inefficacy) that would form one latent factor (burnout). By contrast, if burnout is context-bound, then job burnout and parental burnout items should load on different factors. Entering all job and parental burnout items in the same factor analysis would give rise to six factors (exhaustion-work, exhaustion-parenting; detachment-work, detachment-parenting; inefficacy-work, inefficacy-parenting) that would form two latent factors (job burnout and parental burnout). The study was approved by the Institutional Review Board. Data are publicly available on OSF at https://osf.io/dy7b9/

Method

Participants. Participants were informed about the survey through the network of the largest health mutual in Belgium, social networks, websites, schools, pediatricians, and word

of mouth. In order to avoid (self-)selection bias, participants were not informed that the study was about parental burnout. Parents were eligible to participate only if they had (at least) one child still living at home. They were invited to complete the survey online on Qualtrics after giving informed consent. The informed consent they signed allowed them to withdraw at any stage of the questionnaire without having to justify their withdrawal. They were also assured that data would remain anonymous.

A sample of 2,608 French-speaking parents (78.8% women) completed the study. The women's ages ranged from 21 to 64 years (mean age = 39.31; SD = 7.64), and the men's ranged from 24 to 66 years (mean age = 43.05; SD = 8.48). The majority of the sample came from Belgium (96.1%), a minority from other French-speaking European countries (3.3%) and the remaining 0.6% from non-European French-speaking countries. Overall, the participants had from 1 to 10 children, aged from 0 to 38 years (mean age = 8.49; SD = 6.70). The sample was relatively representative: 21.1% of the participants were educated to secondary level, 40.6% had a first degree from university or college, 28.9% a master's degree and 9.3% had a Ph.D. or MBA degree; 23% had a net monthly household income lower than €2,500 ($ 2,840), 44.2% between €2,500 and €4,000 ($ 2,840 - 4,540), 23.9% between €4,000 and €5,500 ($ 4,540 - 6,240), and 8.9% higher than €5,500 ($6,240).

Participants who completed the questionnaire (see section "Measures" below) had the opportunity to enter a lottery with a chance of winning €300 ($340), a stay for two persons in a hotel, or amusement park or wellness center tickets. Participants who wished to participate in the lottery had to provide their email address, but an electronic procedure ensured that the email addresses were automatically disconnected from the questionnaires and directly encoded in a distinct data file.

Measures. Questionnaires were completed with "forced choice option" in Qualtrics, ensuring a dataset with no missing values.

Parental burnout was assessed with the Parental Burnout Inventory (PBI[3]; Roskam, Raes, & Mikolajczak, 2017), an adaptation of the Maslach Burnout Inventory to parenting. The PBI encompasses 22 items that form three subscales: Emotional Exhaustion (8 items) (e.g., *I feel emotionally drained by my parental role*), Emotional Distancing/detachment (8 items) (e.g., *I sometimes feel as though I am taking care of my children on autopilot; I can no longer show my children how much I love them*), and Feelings of Inefficacy (6 items) (e.g., *I accomplish many worthwhile things as a parent*; reverse-scored). PBI items were rated on the same 7-point Likert scale as in the original MBI (never, a few times a year or less, once a month or less, a few times a month, once a week, a few times a week, every day). The global score (Cronbach's alpha = .93 in the present sample) is computed by summing the item scores after reversing those of the personal accomplishment factor so that higher scores indicate greater burnout.

Job burnout was assessed with the Maslach Burnout Inventory-General Survey (MBI-GS; Maslach, Jackson, & Leiter, 2010). The MBI is a widely used 16-item questionnaire encompassing three factors: Emotional Exhaustion (5 items), Cynicism/detachment (5 items) and Professional Efficacy (6 items). Items are in the form of *I feel emotionally drained from my work*. The instruction is as follows: "Please read each statement carefully and decide if you ever feel this way about your job". Likert-type scales are in the form of "How often?", with a 7-point scale of frequency (never, a few times a year or less, once a month or less, a few times a month, once a week, a few times a week, every day). The global score (Cronbach's alpha = .86 in the present sample) is computed by summing the item scores after

[3] As Items 1 to 8 and 17 to 22 were adapted from the Maslach Burnout Inventory (MBI), the copyright holder of the MBI holds the rights for these items: Copyright © 1981 Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com. Altered with permission of the publisher.

reversing those of the professional efficacy factor so that higher scores indicate greater burnout.

Statistical analyses. The data were analyzed using both exploratory factor analyses (EFA) and confirmatory factor analyses (CFA). We randomly split the sample into two subsamples of 1,323 and 1,285 participants in order to compute EFA and CFA on two different subsamples. The reason why the subsamples do not have the same size is that the division of the sample into two subsamples was made randomly using the option "select cases – random sample of cases - approximately 50% of all cases" in SPSS.

The EFA was performed on the first subsample (1,323 parents) as follows: the 22 items of the Parental Burnout Inventory and the 16 items of the Maslach Burnout Inventory were entered together in the analysis and subjected to EFA using maximum likelihood estimation with oblimin rotation. Most items of the MBI and PBI are similar, except that they are anchored in the work and parenting contexts respectively (e.g., *I feel emotionally drained from my work*; *I feel emotionally drained by my parental role*). Thus, if items measuring job burnout did not cluster with those measuring parental burnout, this could not be attributed to measurement differences. In the first —fully exploratory— EFA, we examined which factor solution would emerge spontaneously from the data. Thus, we did not set the number of factors to extract, neither did we "force" a 6-factor solution; all factors with eigenvalues >1 were admitted. The result of the EFA shown in the Results section corresponds to the pattern matrix of factor loadings. Second, we compared the 6-factor solution that spontaneously emerged from the fully exploratory EFA with more parsimonious solutions. Indeed, if job burnout and parental burnout constructs are not really distinct from each other (or if some of their dimensions are not really distinct from each other), one would expect that solutions with a lower number of factors (where job burnout and parental burnout items load on the same

factor) would represent a better fit to the data. We therefore compared the 6-factor solution with 1-,2-,3-,4-,5-factor solutions.

CFAs were computed on the second subsample (1,285 parents) using SEM software Stata 15. Analyses were conducted based on the covariance matrix and using maximum likelihood estimation with Satorra-Bentler correction for non-normal data (Satorra & Bentler, 1994); indeed, skewness and kurtosis indicated that several items displayed deviations from normality. Conceptually, these deviations from normality make sense: like most mental health indicators, burnout is expected to present an asymmetric distribution (i.e., to be positively skewed). Several goodness-of-fit indices were used to determine the acceptability of the models: the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), the comparative fit index (CFI), and the Tucker-Lewis index (TLI). For CFI and TLI, values close to 0.90 or greater are acceptable to good. RMSEA and SRMR should preferably be less than or equal to 0.08 (Hu & Bentler, 1999). We tested and compared three models in CFA. The first model that we tested is the model that would be expected if parental and job burnout are different constructs. In this model (see Figure 1 for a schematic representation), the 38 items of job burnout and parental burnout inventories form eight latent variables: six first-order factors: exhaustion-work, detachment-work, inefficacy-work, exhaustion-parenting, detachment-parenting, inefficacy-parenting; and these latent variables form two second-order factors, i.e., job burnout (indexed by exhaustion-work, detachment-work, inefficacy-work) and parental burnout (indexed by exhaustion-parenting, detachment-parenting, inefficacy-parenting). The second model that we tested is an alternative model where the 38 items of job burnout and parental burnout inventories form 7 latent variables: the 6 first-order factors described above and only one second-order factor (burnout). The third model tested is the model that would be expected if parental and job burnout form one and the same construct: burnout. In this model (see Supplementary Figure S1 for a schematic

representation), the 38 items of job burnout and parental burnout inventories form 4 latent variables: three first-order factors: exhaustion (indicated by the corresponding items from the MBI and the PBI), detachment (idem) and inefficacy (idem), all three forming one second-order factor, i.e., burnout.

Results

Exploratory Factor Analysis (EFA). As can be seen in Table 1, the results of the first exploratory factor analysis were clear: a 6-factor solution spontaneously emerged from the data, where the job burnout and parental burnout items form six different factors (exhaustion-work, exhaustion-parenting; detachment-work, detachment-parenting; inefficacy-work, inefficacy-parenting). There was only one cross-loading and it was within constructs and not between constructs. Moreover, as shown in Supplemental Table S1, this 6-factor solution clearly fitted the data better in terms of chi^2 and percentage of variance explained than any more parsimonious solution, suggesting that job burnout and parental burnout items do not load on the same factors.

Confirmatory Factor Analysis (CFA). Based on the results of the EFA, we built a first measurement model including eight latent variables: six first-order factors: exhaustion-work, detachment-work, inefficacy-work, exhaustion-parenting, detachment-parenting, inefficacy-parenting, forming two second-order factors, i.e., job burnout and parental burnout. As shown in Figure 1, the indicators of the first-order factors consisted of the items of the corresponding subscales in the Maslach Burnout Inventory and Parental Burnout Inventory (five, eight, five, eight, six and six items, respectively). Model fit indices indicated that this first model had good fit to the data (CFI = .94; TLI = .93; SRMR = .07, RMSEA = .04 [CI 95%: .04, .05]). The second model, where all 38 items are led to form 6 first-order factors and one second-order factor (burnout) also fitted the data, but the fit was slightly lower than that of the first model (CFI = .93; TLI = .92; SRMR = .08, RMSEA = .05 [CI 95%: .05, .06]).

The third model, where parental burnout and job burnout items are constrained to form three dimensions (exhaustion, detachment, inefficacy, i.e., without a difference between job and parental burnout), all three forming one second-order factor, i.e., burnout (see Supplementary Figure 1) did not converge; according to the statistical expert we consulted, this might be due to the fact that the indicators did not accurately reflect the latent variables to which they were associated. These results suggest that although job and parental burnout are two related forms of burnout (r between latent factors is .46) — hence the term "burnout" — they are better seen as two distinct forms of burnout.

Discussion

The results of this study demonstrate the specificity of parental burnout. However, these findings need to be extended in three ways. First, we need to replicate these findings in a different sample of parents. Second, we need to examine whether these different forms of burnout predict (at least partially) different outcomes. Third, we need to ensure that parental and job burnout are factorially distinct from depressive symptoms and, most importantly, that the *specific* outcomes of each type of burnout cannot be explained by depressive symptoms. We address these issues through the three-wave longitudinal study described in Study 2.

Study 2:

Factorial Distinctiveness and Differential Outcomes of Parental Burnout, Job Burnout, and Depressive Symptoms

The goal of Study 2 was to assess the distinctiveness of job burnout and parental burnout vis-à-vis depressive symptoms, and to examine whether the three constructs are associated with the same or partially different outcomes. We included nine outcomes in the study: parental satisfaction, parental neglect, parental violence, escape and suicidal ideations, problematic alcohol use, disordered sleep, somatic complaints, job satisfaction, and job turnover intention. These outcomes were chosen to reflect important and previously

demonstrated consequences of parental burnout, job burnout, or depression. They have never been examined together in a study that measured the three constructs. We expected the constructs to have partially common consequences (e.g., sleep disorders, somatic disorders, addictive behaviors), but we also expected parental and job burnout to have more pronounced consequences in the specific sphere of life from which they originated. Accordingly, parental burnout should have more pronounced consequences on parenting (parental satisfaction, parental neglect and violence) and job burnout should have more pronounced consequences at work (job satisfaction, turnover intention).

Method

Participants. Participants were recruited via Prolific, a subject-recruitment platform created in the UK, now used by most top-ranked universities because it enables fast, reliable, and high-quality data collection. Researchers can enter their study proposal and select screening criteria that ensure that only people with certain characteristics can participate (in the present case: only people whose mother tongue is English, who are parent and who hold a job). In order to avoid (self-)selection bias, participants were not informed that the study was about parental burnout. The study was presented as a study about "factors of fulfillment and exhaustion in professional and family life". Participants who met the pre-screening criteria were invited via Prolific to complete the survey online on Qualtrics anonymously (matching across times was done using prolific ID). As suggested by Prolific, attentional check questions were randomly inserted in the survey in order to force participants to pay attention to the study. Participants who failed to select the right answer to the attentional check questions were dismissed from the analyses. Participants who completed the questionnaire were paid £3 ($4) for their participation. The same amount was paid at each wave.

At Time 1, a sample of 822 English-speaking parents (59.2% women) completed the whole study without missing any attentional check question. The women's ages ranged from

20 to 63 years (mean age = 38.68; SD = 8.44), and the men's ranged from 21 to 62 years (mean age = 38.02; SD = 7.20). The majority of the sample came from the UK (55.7%), a minority from other English-speaking countries (31.7%) and the remaining 12.5% from other countries. Overall, the participants had from 1 to 6 children. The sample was relatively representative: 38.3% of the participants were educated to secondary level, 43.6% had a first degree from university or college, 15.2% had a master's degree and 2.9% had a Ph.D. or MBA degree. At Time 2 (four months later), 521 parents (57.6% women) completed all questionnaires. At Time 3 (another four months later, i.e., 8 months after Time 1), 483 parents (56.2% women) completed all questionnaires. Drop out analysis (i.e., Binary logistic regressions) at Times 2 and 3 showed that more women (23.5%) than men (16.7%) dropped from Time 1 to Time 2 (B(1) = .33, $p<.05$) and that participants who dropped from Time 1 to Time 2 were slightly younger (B(1) = .05, $p<.001$). Participants who dropped from Time 2 to Time 3 were also slightly younger (B(1) = .04, $p<.001$) and had more children (B(1) = -.15, $p<.05$).

Measures. In addition to sociodemographic questions, the following questionnaires were included at Time 1, Time 2, and Time 3. All the questionnaires were completed with "forced choice option" in Qualtrics, ensuring a dataset with no missing data until participants stopped completing the questionnaire. Some participants did not complete the study until the end, which explains the slightly varying N across analyses. Means and standard deviations are reported in Table S2.

Parental burnout was assessed with the Parental Burnout Inventory (PBI[4]; Roskam et al., 2017) as in Study 1. Cronbach's alpha was .93, .92, and .93 at Time 1, 2, and 3, respectively.

[4] As Items 1 to 8 and 17 to 22 were adapted from the Maslach Burnout Inventory (MBI), the copyright holder of the MBI holds the rights for these items: Copyright © 1981 Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com. Altered with permission of the publisher.

Job burnout was assessed with the Maslach Burnout Inventory-General Survey (MBI-GS; Maslach et al., 2010) as in Study 1. Cronbach's alpha was .89, .90, and .90 at Time 1, 2, and 3, respectively.

Depressive symptoms were assessed using the PHQ-8 (Kroenke et al., 2009), a questionnaire widely used in Psychiatry to screen for depressive symptomatology (for comparative studies with other instruments, see Lowe et al., 2004; Wells, Horton, LeardMann, Jacobson, & Boyko, 2013; and Williams, Pignone, Ramirez, & Stellato, 2002). Each item measures one of the 9 criteria for depression from the Diagnostic and Statistical Manual of Mental Disorders (*DSM-5*®, APA), except for suicidal thoughts. It has been shown that global scores in the PHQ-9 (including an item about suicidal thoughts) and PHQ-8 (excluding this item) have a .97 correlation with each other (Wells et al., 2013*)* and that including this item does not change the specificity or sensitivity of the instrument (Kroenke et al., 2009). Because we had already asked about suicidal thoughts in another questionnaire (see "escape and suicidal thoughts" below), we preferred to avoid repeating this sensitive question and therefore chose to use the PHQ-8 instead of PHQ-9. Respondents are asked to indicate how often they had experienced each symptom over the last month on a 4-point Likert scale (not at all, several days, on more than half the days, nearly every day). The global score is obtained by summing up the items. Cronbach's alpha was .90, .90, and .90 at Time 1, 2, and 3, respectively.

Overall parental satisfaction was measured using three items created for the purpose of the current study: *I feel fulfilled as a parent; My children give meaning to my life; I am amazed by my children*. Respondents indicated their level of agreement with each item on a 7-point Likert-type scale (1 = strongly disagree to 7 = strongly agree). A global score was

obtained by averaging the item scores. Cronbach's alpha was .86, .86, and .85 at Time 1, 2, and 3, respectively.

Parental neglect was assessed with a selection of items from the Parental Neglect Scale (Mikolajczak, Brianda et al., 2018). As in Mikolajczak, Gross, & Roskam (in press), this shortened measure was composed of three items: one item targeting physical neglect (*I don't care about my children when I know I should (meals, hygiene, etc.)*); one item targeting educational neglect (*I don't help my children when they really need it (for their homework, to make a decision, to resolve a conflict, etc.)*); and one item targeting emotional neglect (*I don't comfort my children when they are sad, frightened, or distraught*). Items are rated on an 8-point Likert scale (never or less than once a year, less than once a month, about once a month, a few times a month, about once a week, a few times a week, about once a day, a few times a day). A global score was obtained by averaging the item scores. Cronbach's alpha was .82, .70, and .83 at Time 1, 2, and 3, respectively.

Parental violence was assessed with a selection of items from the Parental Violence Scale (Mikolajczak, Brianda et al., 2018). As in Mikolajczak, Gross, & Roskam (2019), this shortened measure was composed of three items: one item targeting verbal violence (*I say things to my children that I then regret (threats, insults, ridiculous nicknames, etc.)*), one item targeting physical violence (*When I get angry, I throw objects at my children or I shake my children*), and one item targeting psychological violence (*I tell my children that I am going to leave, and that they won't see me again if they continue to be difficult*). Items are rated on an 8-point Likert scale, identical to that of parental neglect. A global score was obtained by averaging the item scores. Cronbach's alpha was .74, .61, and .68 at Time 1, 2, and 3, respectively.

Escape and suicidal ideations were assessed with three items (see Mikolajczak, Gross, & Roskam, 2019): two items measuring family escape ideations (*I want to leave*

everything and start a new life; I want to go away without leaving any address) and one item measuring suicidal thoughts: *I have suicidal thoughts.* Respondents indicated their level of agreement with each item on an 8-point Likert scale, identical to that of parental neglect. A global score was obtained by averaging the item scores. Cronbach's alpha was .82, .80, and .85 at Time 1, 2, and 3, respectively.

Problematic alcohol use was measured using the two alcohol-related consequences from the "Comprehensive Inventory of Substance and Behavioral Addictions" (CISBA; Deleuze et al., 2015): *During the last three months, has your alcohol consumption brought about negative consequences in your everyday life (e.g., reproaches from or quarrels with the family and/or friends, judicial problems, health problems, negative impact on professional life)?*, and *During the last three months, it has been difficult for me to refrain from drinking*, both rated on a four-point Likert scale (fully disagree, tend to disagree, tend to agree, fully agree). A global score was obtained by averaging the item scores. Cronbach's alpha were below conventionally accepted levels (.52, .51, and .50 at Time 1, 2, and 3, respectively), indicating that results regarding this variable must be interpreted cautiously.

Disordered sleep was evaluated by a brief questionnaire assessing frequency of sleep difficulties (sleep onset latency > 30 minutes; nocturnal awakenings > 30 minutes; waking > 20 minutes before alarm; nightmares) and subjective sleep quality during the last month on a four-point scale (never, less than once a week, once or twice a week, three times a week or more). A score for sleep problems was obtained by averaging the item scores. Cronbach's alpha was .75, .72, and .78 at Time 1, 2, and 3, respectively.

Somatic complaints were assessed using a selection of the nine most frequent symptoms of the most widely used physical symptoms checklist: the Pennebaker Inventory of Limbic Languidness (Pennebaker, 1982): Headache or migraine; Back pain; Heartburn or abdominal pain; Chest pain or racing heart; Stiff or sore muscles; Running or stuffy nose;

Sensitive or tender skin; Itchy eyes or skin; Cold hands or feet, even in hot weather. Items are rated on an 8-point Likert scale, identical to that of parental neglect. A global score was obtained by averaging the item scores. Reliabilities have not been computed as symptoms are not expected to covary (i.e., a person who has frequent migraine is not necessarily expected to have frequent backache).

Overall job satisfaction was measured using three items from Quinn and Shepard's (1974) job satisfaction index. The items used here were: *All in all, I'm very satisfied with my current job; In general, my job measures up to the sort of job I wanted when I took it; Knowing what I know now, if I had to decide all over again whether to take my job, I would* (see also Eisenberger, Cummings, Armeli, & Lynch, 1997 for similar item selection). Respondents indicated their level of agreement with each item on a 7- point Likert-type scale (1 = strongly disagree to 7 = strongly agree). A global score was obtained by averaging the item scores. Cronbach's alpha was .91, .92, and .93 at Time 1, 2, and 3, respectively.

***Turnover intention*.** Intention to quit the organization was assessed using three items from Lichtenstein, Alexander, McCarthy, & Wells (2004): *I often think about quitting my company, I intend to search for a position with another employer within the next year, I intend to leave my company in the near future.* Respondents indicated their level of agreement with each item on an 8-point Likert scale, identical to that of parental neglect. A global score was obtained by averaging the item scores. Cronbach's alpha was .95, .95, and .96 at Time 1, 2, and 3, respectively.

Statistical Analyses

Factorial distinctiveness. In order to examine the factorial distinctiveness of parental burnout, job burnout, and depressive symptoms, we started by performing EFA on the baseline sample of parents (N = 822). The 22 items of the Parental Burnout Inventory, the 16 items of the Maslach Burnout Inventory, and the 8 items of the PHQ were entered together in

the analysis and subjected to an EFA using maximum likelihood estimation with oblimin rotation. Because the EFA with parental burnout and job burnout in Study 1 yielded a 6-factor solution, and because depression is supposed to be a single-factor construct, we set the number of factors to extract to 7. The result of the EFA shown in the Results section corresponds to the pattern matrix of factor loadings. Then, we compared the 7-factor solution that emerged with more parsimonious solutions. Indeed, if job burnout, parental burnout, and depression constructs are not really distinct from each other (or if some of their dimensions are not really distinct from each other), one would expect that solutions with a lower number of factors (where some job burnout, parental burnout, or depression items load on the same factor) would represent a better fit to the data. We therefore compared the 7-factor solution with 1-,2-,3-,4-,5-, 6-factor solutions.

We then performed CFA using Stata 15. CFAs were performed on the same sample (the sample size was not large enough to split the sample as in Study 1) and conducted based on the covariance matrix and using robust maximum likelihood estimation with Satorra-Bentler correction for non-normal data (Satorra & Bentler, 1994). Several goodness-of-fit indices were used to determine the acceptability of the models: the RMSEA, SRMR, the CFI, and TLI. We tested and compared three models. In the first model, the 22 items of Parental Burnout form 3 first-order factors (Exhaustion-Parenting, Detachment-Parenting, Inefficacy-Parenting) loading on a second-order factor (Parental Burnout), the 16 items of Job burnout form 3 first-order factors (Exhaustion-Work, Detachment-Work, Inefficacy-Work) loading on a second-order factor (Job Burnout), and the 8 items of depression form one latent factor (Depression), with covariances between parental burnout, job burnout, and depression. In the second model, the 22 items of Parental Burnout form 3 first-order factors (Exhaustion-Parenting, Detachment-Parenting, Inefficacy-Parenting), the 16 items of Job burnout form 3 first-order factors (Exhaustion-Work, Detachment-Work, Inefficacy-Work), and the 8 items

of depression form a first-order factor (Depression); all first-order factors load on a single second-order factor ("Psychopathology"). In the third model, the 22 items of Parental Burnout, the 16 items of Job burnout and the 8 items of depression form one and the same construct, i.e., a single latent variable ("Psychopathology").

Distinctiveness of outcomes. We first used path analyses to assess the prospective impact of parental burnout, job burnout, and depressive symptoms on parental satisfaction, parental neglect, parental violence, escape and suicidal ideation, problematic alcohol consumption, disordered sleep, somatic complaints, job satisfaction, and turnover intention. The path analysis was conducted on the 522 subjects who completed all measures at both Time 1 and Time 2. It was performed using maximum likelihood estimation[6] for path coefficients. Paths connected the three constructs (Time 1 parental burnout, Time 1 job burnout, Time 1 depressive symptoms) with the various outcomes (Time 2 parental satisfaction, Time 2 parental neglect, Time 2 parental violence, Time 2 escape and suicidal ideation, Time 2 problematic alcohol consumption, Time 2 disordered sleep, Time 2 somatic complaints, Time 2 job satisfaction, Time 2 turnover intention). Antecedent variables were allowed to correlate with each other and the residuals of outcome variables were allowed to covary with each other. The model was computed on observed variables, and the overall model fit was therefore perfect. However, the overall fit of the model is of little interest here: the important information is the varying strength of association between different paths (standardized coefficients). We then ran post-hoc test to statistically compare path coefficients, in order to stringently test whether the relations between the antecedent measure (parental burnout, job burnout ,or depressive symptomatology) and the outcomes significantly differ across domains.

We then took advantage of the three waves of Study 2 to investigate intra-individual patterns of change over time, namely how within-person change in parental burnout, job

burnout, or depressive symptoms are associated with within-person change in the various outcomes. The analysis of change was conducted using a multilevel modeling (MLM) framework with the HLM 7.03 software (see Francis, Fletcher, Stuebing, Davidson, & Thompson [1991] and Raudenbush & Bryk [2002] for more details about MLM methodology). MLM estimates are based on all the available data at Level 1, but without imputing data. HLM uses maximum likelihood estimation, which does not require the assumption of missingness completely at random. This method was chosen because it allowed us to include parents who did not participate at each measurement point in the study sample.

In the current study, the Time component used was the wave (Time 1, Time 2, and Time 3). MLM allows time-varying predictors to be included in the model. As a result, we were able to predict the change in a given outcome from changes in parental burnout, job burnout or depressive symptoms, controlling for change in other outcomes. Time-varying predictors were added to the level-1 equation as follows: $OUTCOME\_1_{ti} = \pi_{0i} + \pi_{1i}*(TIME_{ti}) + \pi_{2i}*(parental\_burnout_{ti}) + \pi_{3i}*(job\_burnout_{ti}) + \pi_{4i}*(depressive\ symptoms_{ti}) + \pi_{5i}*(outcome\_2_{ti}) + \pi_{6i}*(outcome\_3_{ti}) + \pi_{7i}*(outcome\_n_{ti}) + e_{ti}$, where $OUTCOME\_1_{ti}$ is observed score at Time t for subject i, π_{0i} is the initial status (intercept) for subject I, π_i is the rate of change (slope) for subject i per unit increase in time, $TIME_{ti}$ is the Time component. Variability between individuals was controlled for at level 2 ($\pi_{1i} = \beta_{10} + r_{1i}$), where π_{1i} is the rate of change for subject i, β_{10} is the mean rate of change per unit increase in time (averaged for all subjects), r_{1i} is the distance between subject i and mean slope.

At level 1, the time-varying predictors were within-person centered in order to address bias due to unobserved heterogeneity or unmeasured factors that vary across individuals and have a consistent effect over time on the construct of interest (Raudenbush & Bryk, 2002). Time-varying predictors were also constrained to have fixed effects (Raudenbush & Bryk, 2002). To ensure comparability between the coefficients presented in Table S4, a data

transformation was performed before the main MLM analyses were run. Proportion of maximum (POM) scoring was applied and finally multiplied by 100 for interpretability, so that all scores had the same range (0-100). Note that the intercept was not a matter of particular interest for the current study.

Coefficients in Table S4 correspond to the magnitude of change in the outcome associated with one unit of change in the predictor (i.e., every unit deviation from the person-specific mean) over a wave (i.e., 4 months). For instance, the coefficient associated with the *change in parental burnout* for the outcome *parental satisfaction* (i.e., -.32) means that every unit increase in parental burnout over a wave (i.e., 4 months) is associated with a decrease of .32 units of parental satisfaction.

Results

Factorial distinctiveness

Exploratory factor analysis (EFA). As indicated in the pattern matrix of factor loadings shown in Table 2, the 7-factor solution perfectly distinguishes between the three factors of job burnout, the three factors of parental burnout, and depressive symptomatology. There was one cross-loading but it was within constructs and not between constructs. Moreover, as shown in Supplemental Table S3, this 7-factor solution clearly fitted the data better in terms of chi^2 and percentage of variance explained than any more parsimonious solution, suggesting that job burnout, parental burnout and depression items do not load on the same factors.

Confirmatory factor analysis (CFA). Results show that the first models, where Parental Burnout, Job Burnout, and Depression items form distinct latent factors, have both adequate fit to the data (Model 1: CFI = .92; TLI = .92; SRMR = .07, RMSEA = .05 [CI 95%: .05, .06]; Model 2: CFI = .91; TLI = .90; SRMR = .08, RMSEA = .05 [CI 95%: .05, .06]). Comparison of fit indices (AIC, BIC) indicated that Model 1 was slightly better than Model 2.

By contrast, the third Model, in which Parental Burnout, Job Burnout, and Depression items for one and the same latent construct, had poor fit to the data (CFI = .65; TLI = .62; SRMR = .13; RMSEA = .10 [CI 95%: .10, .11]).

Distinctiveness of outcomes.

Path analysis. As shown in Figure 2 (showing only significant path coefficients), supplemental Figure S2 (showing all coefficients), and Table S5 (post-hoc comparisons of path coefficients across measures and outcomes), analyses confirmed that parental burnout has specific outcomes that are predicted by neither job burnout nor depressive symptoms: parental burnout has a unique effect on parental satisfaction, parental neglect, and parental violence. Analyses also showed that job burnout has specific outcomes that are predicted neither by parental burnout nor depressive symptoms: job burnout has a unique negative effect on job satisfaction and turnover intention (contrary to job burnout, parental burnout *increases* job satisfaction). Depressive symptoms have a unique effect on disordered sleep and somatic complaints. Depressive symptoms and parental burnout predict problematic alcohol use better than job burnout. Finally, parental burnout predicts Escape and suicidal ideation better than depressive symptoms, which in turn predict it better than job burnout.

Analysis of change. Analyses modeling within-person changes across the three waves (see Table S4 for model estimates) show that changes in parental burnout are uniquely associated with changes in parental satisfaction, in parental neglect (though not in parental violence), and in escape and suicidal ideation; changes in job burnout are uniquely associated with changes in job satisfaction and turnover intention; and changes in depressive symptoms are uniquely associated with changes in problematic alcohol use and disordered sleep.

Discussion

The findings of Study 2 dovetail with those of Study 1: they replicate the factorial distinctiveness of parental and job burnout in another language and country, and further show

that these two forms of burnout are also factorially distinct from depressive symptomatology. In addition, and most importantly, findings show that although the three constructs have some common outcomes (e.g., problematic alcohol use, disordered sleep, somatic complaints), parental and job have more pronounced impacts in the specific sphere of life from which they originated: parental burnout has a unique impact on parenting (parental satisfaction, parental neglect and violence) and job burnout has a unique impact at work (job satisfaction, turnover intention).

General Discussion

These studies support the view that parental and job burnout are distinct forms of burnout that each have specific outcomes that cannot be predicted merely by depressive symptoms. It also seems clear that parental burnout meets the criteria for construct distinctiveness explained in the introduction: parental burnout items load on interpretable factors distinct from close constructs (Kudielka, von Känel, Gander, & Fischer, 2004) and it has partially distinct outcomes (Campbell, Bishop, Dunn, Main, Thomas, & Foster, 2013). The findings additionally support the clinical added value of the construct: parental burnout has a unique and consequential impact for the children (neglect, violence). The distinctiveness of parental burnout from job burnout and depressive symptomatology has important theoretical and practical implications.

Theoretical Implications

At the theoretical level, our results help to shed light on the ongoing debate as to whether burnout is a context-free or context-bound syndrome. The current results strongly support the idea that burnout is context-related and that the context is highly relevant to prediction of the consequences. The fact that burnout is context-related does not mean, however, that parental and job burnout can never co-occur (they probably do in some cases, as suggested by the size of correlation between the two latent factors, i.e., .46 in Study 1 and

.44 in Study 2), or that burnout in one sphere cannot prompt the development of burnout in the other sphere. As can be seen in our results, parental burnout actually increases job satisfaction. It is therefore possible that burned out parents who increasingly invest their job because it has become their safe heaven and source of happiness, might ultimately become more vulnerable to job burnout over time, especially if parental burnout is not taken care of.

Another important theoretical implication is that parental burnout cannot be equated with depressive symptomatology. As long as depression is viewed (and measured) as an uncontextualized disorder, then the constructs (and measures) of parental and job burnout will keep their added value, even if only to predict the consequences. Note that the independence of the constructs does not mean that parental burnout cannot lead to major depression. In a seven-year prospective study, Hakanen and Shaufeli (2012) showed that job burnout facilitated the development of future depression in a minority of subjects. The same probably holds true for parental burnout. Depending on the seriousness of the symptomatology, the distinctiveness of these two constructions may also vary (e.g., at the beginning they may be clearly different but across time it might be difficult to distinguish between them, especially if one form of burnout has spilled over the other domain). Future research is clearly needed in order to better understand the developmental dynamics of these symptomatologies.

Practical Implications

In addition to their theoretical value, the findings reported here also have substantial practical importance. First, the unique impact of parental burnout for children underscores the need for doctors, therapists, and social workers to be informed about parental burnout. They must be able to identify this condition and make a differential diagnosis between the two forms of burnout and depressive symptomatology. Second, our findings justify the continuation of research on parental burnout: As shown in this paper, research on depression and job burnout are not sufficient to shed light on the specific consequences of parental

burnout. Further research is therefore needed, not only on links between parental burnout and neglect and violence, but also on other potential consequences at mesosocial (e.g., parent-school collaboration; co-parental conflicts) and macrosocial levels (e.g., children's placement; children's healthcare expenditures).

The outcomes of parental burnout highlight the pressing need to develop interventions to prevent and treat parental burnout. The latter can and must be inspired by research in nearby fields, but our results strongly suggest that interventions that have proven effective in reducing job burnout may not be adopted *as they stand* to burned out parents. This is obviously true for interventions that target job-specific antecedents but it is also true for interventions that target common etiological mechanisms, such as, for instance, (lack of) self-compassion. While burned out parents too would benefit from learning to accept their weaknesses, limitations, and mistakes as part of shared humanity, they can obviously not regard acts of neglect or violence towards their children with the same kindness. As this example illustrates, interventions must be developed/adapted considering the specificities of parental burnout.

Limitations and Directions for Future Research

The current findings are robust (large sample sizes, replicated in two samples from different cultural contexts), but several limitations bear mention. A first limitation is that Study 2 relied on self-reported outcomes. One research direction is to extend the present research by using objectively assessed outcome measures. It is difficult for the variables investigated here (because only a fraction of neglectful and violent behaviors is reported to the police) but other consequences are more suitable for objective study. A second limitation is that although the two studies were carried in different countries, they were both conducted in a Western cultural context. Therefore, and although we did not find evidence of variation across Studies 1 and 2, specific consequences of parental burnout could possibly vary across

cultures, especially if the latter are very different. Future studies in other cultural contexts, and Eastern cultures in particular, are therefore needed. A third limitation is the drop-out rate (41% of the participants had dropped at Time 3) which is not at random: women and younger participants were slightly more likely to drop out. However, because there are still 56% mothers in the sample at Time 3 and because the mean age of participants changed by only 1 year (38.41 to 39.39 years old), it is unlikely that the nature of drop out in the current study affected our conclusions.

Author Contributions

M.M., I.R., F.S. and J.G. developed the study concept and the study design. M.M. collected the data. I.R. performed the data analysis and interpretation. J.G outlined the article, M.M and I.R. drafted the manuscript. J.G., F.S. and A.LN provided critical revisions. All authors approved the final version of the manuscript for submission.

Open Practices Statement

Neither of the experiments reported in this article was formally preregistered. However, the data have been made available on a permanent third-party archive: Open Science Framework. The two databases are available at https://osf.io/dy7b9/

Declaration of Conflicting Interests

J.J.G., A. L N and F.S. have no conflict of interest to declare. M.M. and I.R. have now founded a training institute which delivers training on parental burnout to professionals. The institute was founded after the completion of the study (including the analysis of the results) and after the first submission of this paper. Thus, the institute did not participate in the funding of this study nor did it influence the process, the results or their interpretation in any manner.

Protection of Research Participants

The two studies reported here were approved by the Institutional Review Board and were carried out in accordance with the provisions of the World Medical Association Declaration of Helsinki.

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Table 1

Exploratory Factor Analysis of the Parental Burnout Inventory (PBI) and the Maslach Burnout Inventory (MBI) items (Study 1; N = 1,323 parents)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Exhaustion-parenting 1	.87	.03	-.06	.03	-.09	.02
Exhaustion-parenting2	.85	.01	-.03	.06	-.14	.05
Exhaustion-parenting3	.82	.00	.01	-.03	.08	.04
Exhaustion-parenting4	.79	-.02	.00	.00	-.03	.10
Exhaustion-parenting5	.78	.02	.00	-.04	.09	.06
Exhaustion-parenting6	.74	-.02	.01	-.11	.15	.02
Exhaustion-parenting7	.72	.03	.02	-.07	.15	-.06
Exhaustion-parenting8	.64	.07	.03	-.01	.18	-.01
Detachment-work1	.07	.89	-.03	-.01	-.05	-.02
Detachment-work2	.06	.87	-.07	.00	-.01	-.03
Detachment-work3	-.01	.50	-.15	.07	.08	.15
Detachment-work4	-.03	.48	-.04	.01	.03	.27
Detachment-work5	-.01	.41	.14	-.03	.04	.10
Inefficacy-work1	.02	-.07	.81	.02	-.01	-.09
Inefficacy-work2	-.04	.11	.81	-.03	-.05	-.02
Inefficacy-work3	-.02	-.06	.80	.08	.04	-.03
Inefficacy-work4	-.01	.13	.75	-.02	.01	-.05
Inefficacy-work5	.02	-.24	.66	.05	.01	.02
Inefficacy-work6	.02	-.02	.53	.04	-.04	.19
Inefficacy-parenting1	-.16	.05	.02	.76	.00	-.04
Inefficacy-parenting2	-.02	.09	.05	.75	-.02	-.09
Inefficacy-parenting3	-.02	.02	.06	.75	-.02	-.01
Inefficacy-parenting4	-.10	.07	.06	.68	.01	-.06
Inefficacy-parenting5	.08	-.08	.01	.67	.01	.04
Inefficacy-parenting6	.10	-.06	-.07	.59	.00	.05
Detachment-parenting1	-.10	-.01	-.01	-.05	.91	.02
Detachment-parenting2	-.16	.03	-.02	-.05	.83	.00
Detachment-parenting3	.02	-.04	-.05	.06	.64	.03
Detachment-parenting4	.25	.02	.00	-.03	.56	.06
Detachment-parenting5	.29	.09	.01	-.13	.50	-.07
Detachment-parenting6	.36	.05	.04	-.02	.49	.04
Detachment-parenting7	.15	.03	.04	-.02	.48	.02
Detachment-parenting8	.28	.01	-.02	-.05	.45	.01
Exhaustion-work1	-.01	-.09	.07	.00	.03	.91
Exhaustion-work2	.06	.03	-.01	-.05	-.01	.81
Exhaustion-work3	-.02	.07	.01	.01	.05	.79
Exhaustion-work4	.09	.13	-.05	-.05	-.01	.70
Exhaustion-work5	.03	.25	-.06	-.03	.01	.60

Note. Factor loadings <.30 are in grey; Explained variance = 65.36%; Extraction method is maximum likelihood; rotation method is oblimin.

Table 2

Exploratory factor analysis on the Parental Burnout Inventory (PBI), the Maslach Burnout Inventory (MBI), and the Depression (PHQ-8) items (Study 2; N = 822)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Exhaustion-parenting1	.78	-.02	-.05	-.07	.07	-.05	.01
Exhaustion-parenting2	.77	.07	-.13	-.10	.08	.04	.02
Exhaustion-parenting3	.76	.14	-.14	-.10	.01	.05	.06
Exhaustion-parenting4	.76	.06	-.11	-.15	.10	.09	.06
Exhaustion-parenting5	.72	-.02	-.02	.01	.01	-.15	-.05
Exhaustion-parenting6	.66	.01	.02	.01	.04	-.07	-.04
Exhaustion-parenting7	.55	-.01	.13	.07	.03	-.09	-.01
Exhaustion-parenting8	.53	.04	-.03	-.28	-.03	.08	.01
Detachment-work1	-.02	.93	-.03	-.02	.04	-.01	.04
Detachment-work2	-05	.92	.00	-.02	.06	-.01	.03
Detachment-work3	.03	.61	.00	-.02	.04	-.14	-.10
Detachment-work4	.09	.59	-.03	-.05	.05	-.03	-.18
Detachment-work5	.08	.42	.04	.04	-.03	-.15	-.01
Inefficacy-parenting1	-.11	.03	.80	.03	-.02	.06	.02
Inefficacy-parenting2	-.07	.02	.78	.00	-.06	.01	.07
Inefficacy-parenting3	-.16	.01	.78	-.11	-.11	-.02	.05
Inefficacy-parenting4	-.03	.00	.76	.02	-.02	.01	.09
Inefficacy-parenting5	.06	-.06	.69	.01	-.04	.02	.00
Inefficacy-parenting6	.12	.00	.60	.03	-.05	.03	-.03
Detachment-parenting1	-.10	.02	-.05	-.94	.05	-.03	.02
Detachment-parenting2	-.14	.01	-.01	-.90	.11	-.03	.01
Detachment-parenting3	.05	.05	-.01	-.83	-.04	-.03	-.03
Detachment-parenting4	.12	.00	-.05	-.72	.03	-.01	-.02
Detachment-parenting5	.12	.03	-.01	-.67	-.02	-.02	-.03
Detachment-parenting6	.17	.01	-.02	-.64	.00	-.07	-.05
Detachment-parenting7	.27	-.02	.02	-.53	-.02	-.06	-.09
Detachment-parenting8	.36	.00	.04	-.44	.12	-.02	-.04
Depression 1	.01	.04	-.05	.03	.83	.04	.00
Depression 2	.04	.10	.03	.05	.78	.04	-.08
Depression 3	.03	.09	-.01	-.10	.75	.02	-.01
Depression 4	.02	.04	-.04	-.08	.70	-.02	.02
Depression 5	.04	.06	-.01	-.07	.66	.03	-.07
Depression 6	-.03	.-10	.05	.01	.65	-.14	.00
Depression 7	.13	-.07	.02	.10	.63	-.22	-.03
Depression 8	-.05	.02	-.01	-.22	.59	.01	.06
Exhaustion-work1	.03	.01	-.03	.04	-.01	-.83	.01
Exhaustion-work2	-.01	.00	.00	-.12	.04	-.78	.03
Exhaustion-work3	.01	.09	-.04	-.02	.04	-.77	.01
Exhaustion-work4	.00	.14	-.03	-.03	.05	-.77	.01
Exhaustion-work5	.04	.08	-.05	.06	.05	-.77	-.05
Inefficacy-work1	.05	-.04	-.10	-.04	-.05	.02	.82
Inefficacy-work2	.06	-.12	-.10	-.02	.03	-.02	.75
Inefficacy-work3	.03	-.12	.07	-.03	-.01	.01	.64
Inefficacy-work4	-.05	.09	.08	.11	.01	.02	.57
Inefficacy-work5	-.02	.02	.12	.03	-.02	.05	.56
Inefficacy-work6	-.03	.07	.14	.02	-.02	-.08	.36

Note. Only factor loadings >.30 are reported; explained variance = 67.13%; extraction method is maximum likelihood; rotation method is oblimin.

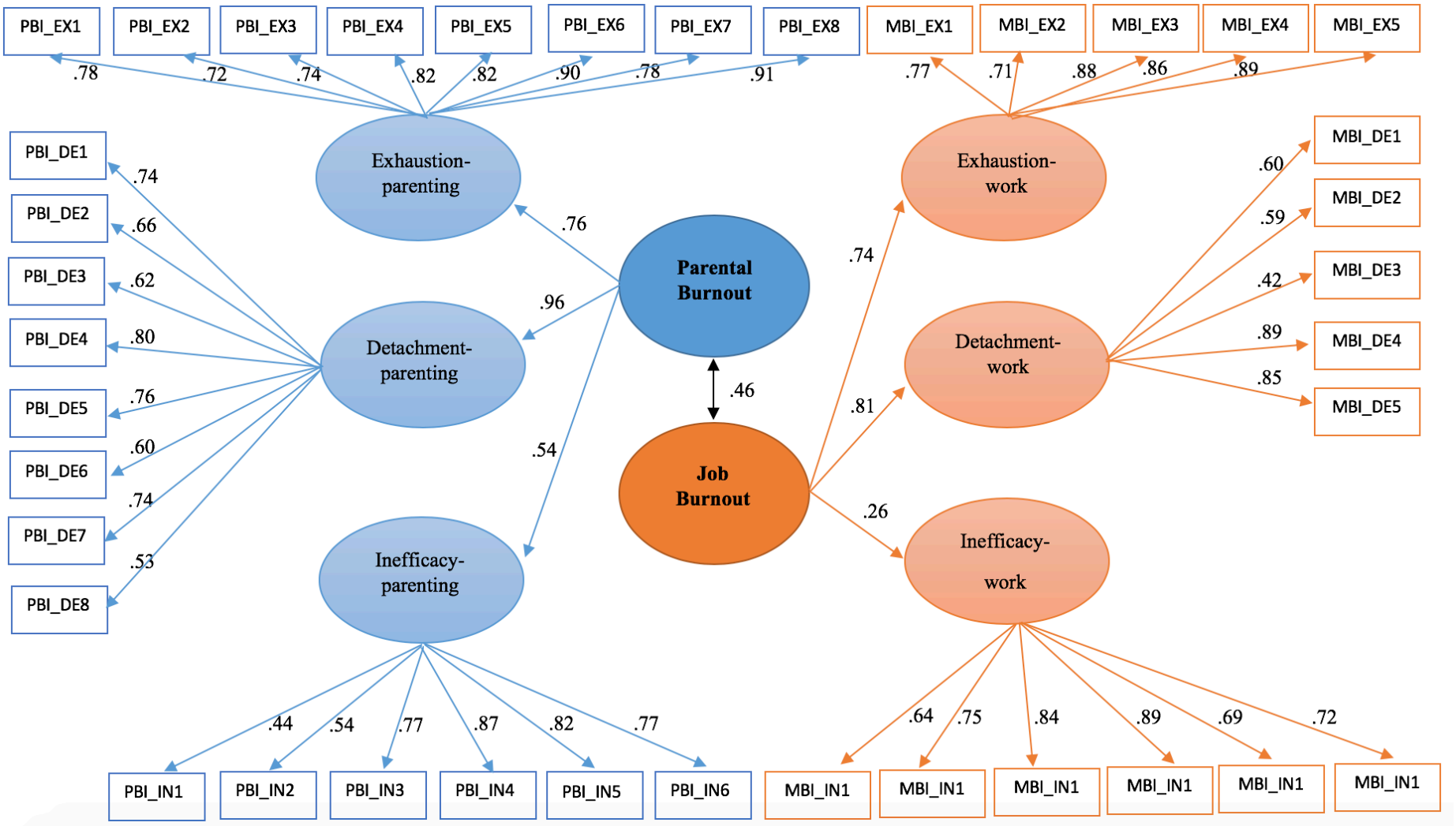


Figure 1.
Confirmatory factor analysis on the items of the Parental Burnout Inventory (PBI) and the Maslach Burnout Inventory (PBI) (Study 1; N = 1 285). EX = Exhaustion; DE = Detachment; IN = Inefficacy. Coefficients are standardized coefficients. Fit indices: CFI = .94; TLI = .93; SRMR = .07, RMSEA = .04.

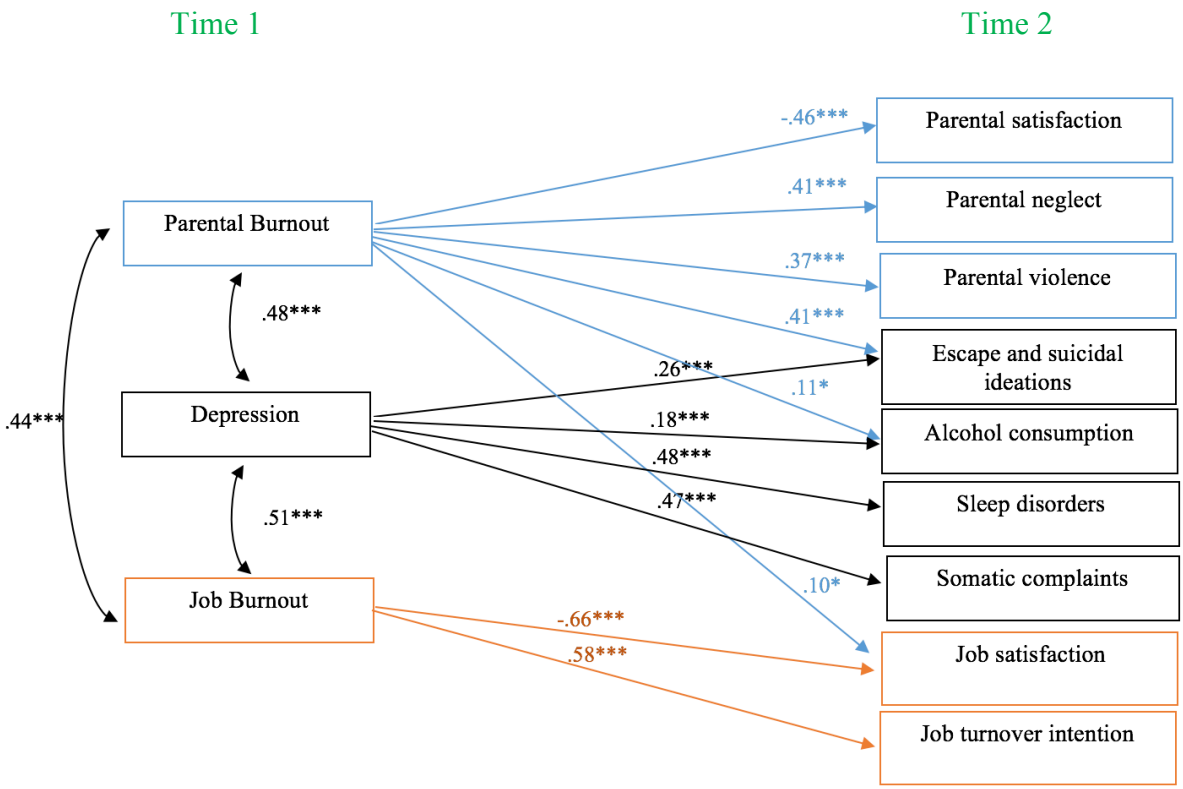


Figure 2. Outcomes of Parental burnout, job burnout and depression (Study 2; $N = 521$; 37.6% participants dropped from T1 to T2). Maximum likelihood estimations for path coefficients. Only significant standardized coefficients are reported; * $p<.05$ ***$p<.001$.

Supplementary Material for

Is parental burnout distinct from job burnout and depressive symptomatology?

Table S1

Comparison of Model Fit from Different Exploratory Factor Analysis Solutions (Study 1)

	Degree of freedom	X^2	% variance explained
1-factor solution	665	47998.15	27.36
2-factor solution	628	34186.99	38.38
3-factor solution	592	23206.96	49.51
4-factor solution	557	15565.47	55.99
5-factor solution	523	10438.93	60.86
6-factor solution	490	6728.16	64.32

Table S2

Means, Standard Deviations and Internal Consistencies for All Variables Under Investigation at All Measurement Times (Study 2)

	Theore-tical range	Mean score T1	Standard deviation T1	Mean score T2	Standard deviation T2	Mean score T3	Standard deviation T3
Parental burnout	0-132	29.43	21.78	27.17	19.87	27.19	20.57
Job burnout	0-96	36.90	17.54	36.62	17.80	36.53	17.98
Depressive symptoms	8-32	14.18	5.31	14.07	5.37	13.76	5.27
Parental satisfaction	1-7	6.24	0.96	6.24	0.91	6.22	0.92
Parental neglect	1-8	1.43	0.97	1.29	0.64	1.31	0.77
Parental violence	1-8	1.47	0.88	1.34	0.63	1.33	0.68
Escape and suicidal ideation	1-8	1.55	1.09	1.55	1.02	1.54	1.10
Job satisfaction	1-7	4.85	1.66	4.92	1.64	4.91	1.64
Turnover intention	1-7	2.86	2.15	2.74	2.03	2.81	2.14
Disordered sleep	1-4	2.28	0.74	2.34	0.74	2.21	0.75
Problematic alcohol use	1-4	1.23	0.57	1.21	0.54	1.21	0.54
Somatic complaints	1-8	2.73	1.26	2.67	1.20	2.63	1.20

Note. As explained in the "Measures" sections, for some variables, the global score is obtained by summing the item scores; for other variables, the global score is obtained by averaging the item scores. Although it may not seem optimal to have both in the same table, we respected the published scoring method of each instrument in order to enable comparisons of the current values with other studies. NA = Not applicable: Internal consistencies were not computed for these scores, as responses to the items were not expected to be consistent with each other (for instance, a person having frequent migraines is not necessarily expected to have frequent backache).

Table S3

Comparison of Model Fit from Different Exploratory Factor Analysis Solutions (Study 2)

	Degree of freedom	X^2	% variance explained
1-factor solution	982	16994.74	30.49
2-factor solution	944	12727.51	41.17
3-factor solution	900	9942.22	49.78
4-factor solution	857	7558.01	55.35
5-factor solution	815	5722.05	59.90
6-factor solution	774	4017.75	64.30
7-factor solution	734	3143.47	67.13

Table S4

Results of Multilevel Modeling (MLM) Predicting Change in the Various Consequences from Changes in Parental Burnout, Job Burnout, and Depressive Symptomatology (Study 2)

Fixed effects	*Coefficient*	*SE*	*t(1025[a])*
Change in parental satisfaction			
Slope[b]	-.24	.35	-.67
Change in parental burnout	-.32	.04	-7.84***
Change in job burnout	.07	.04	1.84
Change in depressive symptoms	-.02	.04	-0.68
Change in parental neglect			
Slope	-.40	.29	-1.37
Change in parental burnout	.12	.04	2.78**
Change in job burnout	-.03	.04	-0.90
Change in depressive symptoms	-.04	.04	-1.03
Change in parental violence			
Slope	-.66	.26	-2.49**
Change in parental burnout	.09	.04	2.53*
Change in job burnout	-.05	.03	-1.48
Change in depressive symptoms	.14	.03	2.72**
Change in escape and suicidal ideations			
Slope	.49	.36	1.36
Change in parental burnout	.18	.04	4.23***
Change in job burnout	-.01	.04	-.36
Change in depressive symptoms	.08	.04	1.90
Change in problematic alcohol use			
Slope	.27	.38	0.71
Change in parental burnout	-.01	.05	-0.17
Change in job burnout	-.01	.04	-.21
Change in depressive symptoms	.14	.05	3.06**
Change in disordered sleep			
Slope	-.40	.49	-0.81
Change in parental burnout	.04	.06	0.76
Change in job burnout	-.03	.05	-0.61
Change in depressive symptoms	.36	.06	6.31***
Change in somatic complaints			
Slope	.34	.41	0.83
Change in parental burnout	.16	.05	3.09**
Change in job burnout	.01	.05	0.21
Change in depressive symptoms	.19	.05	3.77***
Change in job satisfaction			
Slope	-.09	.62	-0.14
Change in parental burnout	.02	.07	0.32
Change in job burnout	-.37	.06	-5.76***
Change in depressive symptoms	-.01	.07	-0.20
Change in turnover intention			
Slope	.32	.70	0.46
Change in parental burnout	.04	.08	0.53
Change in job burnout	.32	.08	4.13***
Change in depressive symptoms	-.01	.08	-0.19

Note. [a] Degrees of freedom (maximum number at level 1 units – number of estimates) are greater than the sample size because measurements are repeated across waves. The "Slope"

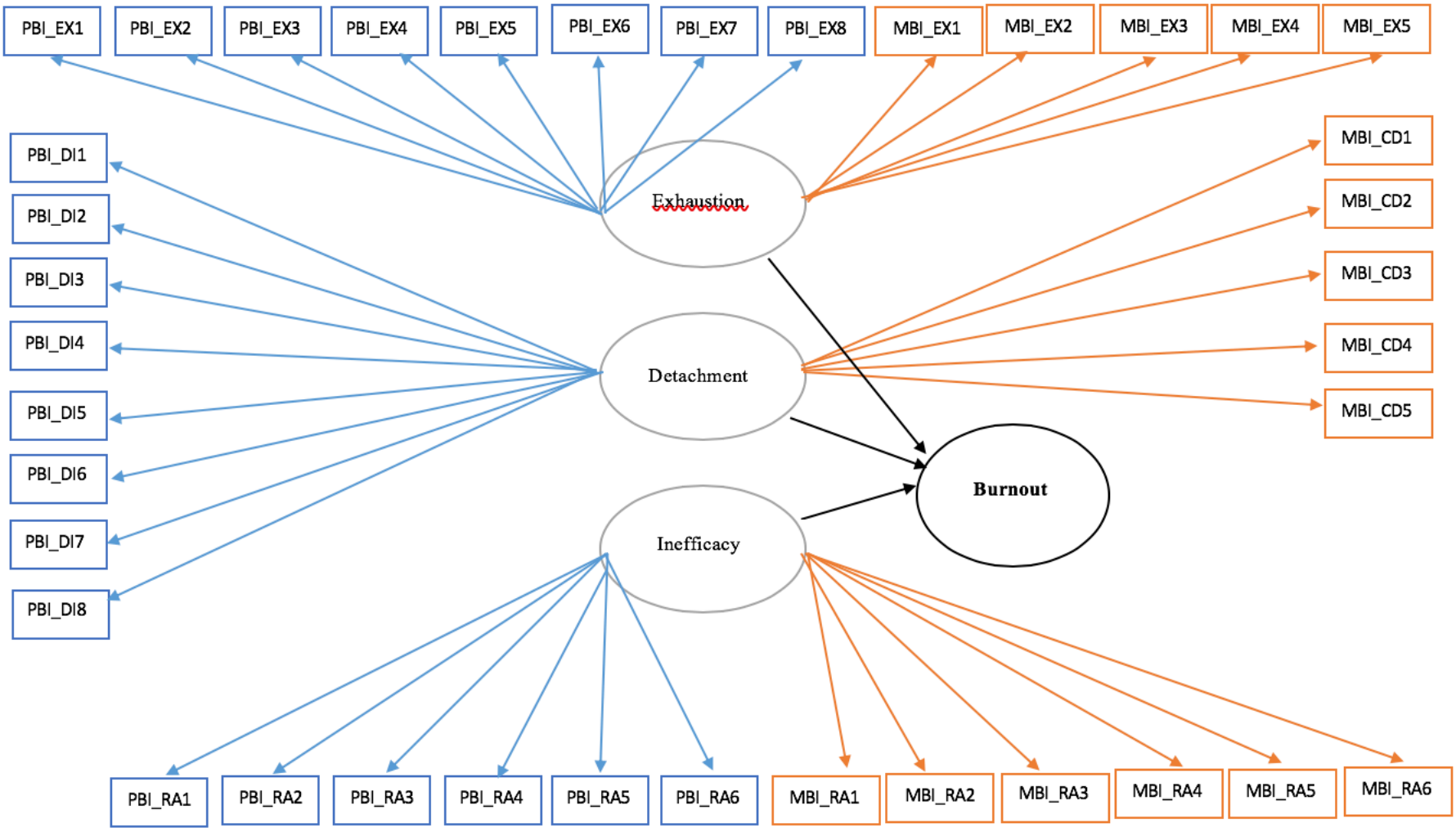
coefficients represent the change in an average individual per unit of time, i.e., the main effect of time. * $p<.05$. ** $p<.01$. *** $p<.001$.

Table S5

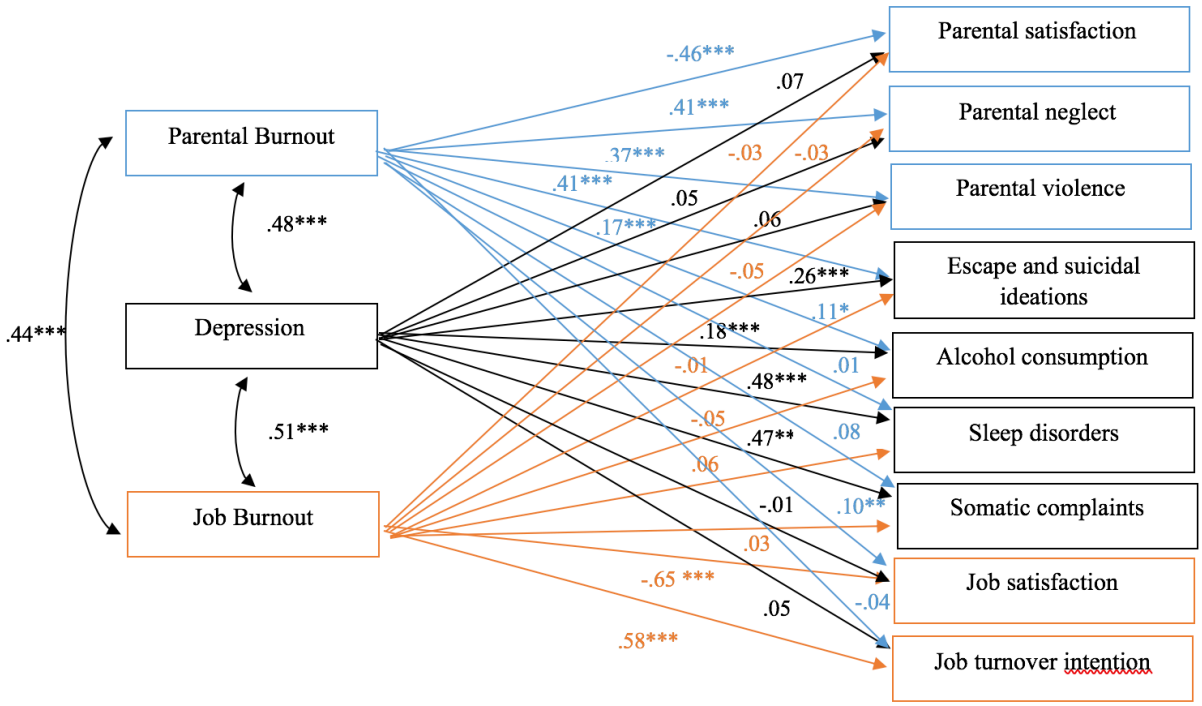
Post-hoc Comparison of the Path Coefficients Across Measures and Outcomes (Study 2; Supplemental Figure S2)

Path coefficients comparison	X^2 (*df = 1*)	*p-value*
Parental satisfaction		
Parental burnout-Job burnout*	34.59	< 0.0001
Parental burnout-Depressive symptoms*	50.85	< 0.0001
Job burnout- Depressive symptoms	1.70	0.19
Parental neglect		
Parental burnout-Job burnout*	35.36	< 0.0001
Parental burnout- Depressive symptoms*	21.87	< 0.0001
Job burnout- Depressive symptoms	0.85	0.36
Parental violence		
Parental burnout-Job burnout*	31.32	< 0.0001
Parental burnout- Depressive symptoms*	15.29	0.0001
Job burnout- Depressive symptoms	1.76	1.18
Escape and suicidal ideations		
Parental burnout-Job burnout*	40.89	< 0.0001
Parental burnout- Depressive symptoms*	4.47	0.03
Job burnout- Depressive symptoms*	14.32	0.0002
Alcohol consumption		
Parental burnout-Job burnout*	4.27	0.039
Parental burnout- Depressive symptoms	0.68	0.41
Job burnout- Depressive symptoms*	7.57	0.006
Sleep disorders		
Parental burnout-Job burnout	0.50	0.48
Parental burnout-Depressive symptoms*	39.22	< 0.0001
Job burnout- Depressive symptoms*	28.92	< 0.0001
Somatic complaints		
Parental burnout-Job burnout	0.63	0.43
Parental burnout-Depressive symptoms*	29.24	< 0.0001
Job burnout- Depressive symptoms*	36.86	< 0.0001
Job satisfaction		
Parental burnout-Job burnout*	164.83	< 0.0001
Parental burnout- Depressive symptoms	2.89	0.09
Job burnout- Depressive symptoms*	95.64	< 0.0001
Job turnover intention		
Parental burnout-Job burnout*	93.33	< 0.0001
Parental burnout-Depressive symptoms	1.39	0.24
Job burnout- Depressive symptoms*	58.23	< 0.0001

Note. Significantly different path are marked with an *.



Supplemental Figure 1. Hypothetical Model where the Parental Burnout Inventory (PBI) and the Maslach Burnout Inventory (MBI) items are constrained to form three first-order factors (exhaustion, detachment and inefficacy), all three forming one second-order factor (burnout).



Supplemental Figure S2. Consequences of Parental burnout, job burnout and depressive symptoms (Study 2; N = 521) will all (standardized) coefficients reported * p<.05 **p<.01 ***p<.001.