Getting Burned-Out is a Matter of Time: Are State-Provided Family-Friendly Policies able to Moderate the Relationship Between Work-Care-Time-Accumulation and Maternal Burnout?

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Abstract

Background: Many theories found a link between stress or exhaustion from work/care responsibilities and burnout, especially for mothers with (young) children. As women are increasingly expected to combine labor market participation with family care responsibilities, so-called "double shift" working is becoming the new standard. Research on *accumulation* of *time spend on work/care* (WCTA) is scarce, and so is the evidence on the direct link between WCTA and *Maternal Burnout* (MB). As *Family-Friendly Policies* (FFPs) are believed to lower stress-levels as a result of e.g., flexible work-time arrangements, it is interesting to investigate the link between WCTA and MB, and the possible moderating role of FFPs.

Methods: Several existing datasets were used to investigate the various concepts (Roskam et al., 2017; OECD.Stats, n.d.). A sample of 4760 working mothers in a heterosexual relationship from 18 OECD countries (*M*age = 37.71 *SD*age = 6.92) answered questions on time spend on work/care and parental burnout between 2017 and 2019. Several models were tested with SPSS using (multiple) linear regression analysis (MLR).

Results: Results showed that WCTA and MB, and most of its components, were positively and significantly related, except for Emotional Distancing, which was negatively and significantly related (H1-2). Also, no evidence was found for moderation of FFPs (H3-4). When distinguishing between policy types, the model including familiarizing policies was significant and explained more variance in MB than the model including defamiliarizing policies. However, moderation effects were not significant (H5).

Discussion: The results of this study are surprising as state provided FFPs seem unable to decrease burnout levels for mothers that are experience high combined work and care hours, although such FFPs are implemented to establish a balance between the two domains. More emphasis may therefore be put on employer benefits and arrangements in tackling future rates of burnout among mothers.

Keywords. Work-Care Time Accumulation; Work-Life Balance, Family-Friendly Policies; Maternal Burnout; OECD-countries

Introduction

Women more frequently experience problems in combining (paid) work and (unpaid; family or household) care (Maher, 2009; Pocock, 2003), especially after having children. As a result of persistent gender differences in care responsibilities and dual-earner systems pressuring women to work more in order to cover the costs of the welfare state, women often work "double shifts" (Huang et al., 2021). Women's total time spent on work and care is also increasing (Stok et al., 2021). Work-care time accumulation (WCTA) is the sum of worked hours in both the (paid) work domain and care domain, with care time and work time often being in conflict (Maher, 2009). Although high WCTA can lead to better self-related health (Kalenkoski et al., 2011), it can also increase coronary heart disease (Virtanen et al., 2010), depression, and sleeping problems (Höge, 2009). It may also increase stress (Hsu, 2019).

Long-term stress from care and work responsibilities is associated with burnout (e.g., Vaamonde et al., 2019), especially among mothers. Increasingly women drop out of work as a result of depression or stress-related burnout (Schaufeli, 2018), a recent trend that could illustrate the problem of combining work and care for mothers. As a result, the term Maternal Burnout (MB) has gained momentum (e.g., Maslach & Goldberg, 1998). MB is associated with suicidal ideation, child neglect, and mental dysregulation (e.g., Mikolajczak et al., 2020).

Certain state provisions are aimed at relieving families, and mothers of (young) children in particular, of stressors that result from responsibilities they have at work and at home, enabling them to better balance employment, health, and life (e.g., reduced time spent on responsibilities in different domains) (Bowman & Cole, 2009). Such Family-Friendly Policies (FFPs) offer support for families in need and consequently decrease stress that can lead to exhaustion among parents (e.g., Takahashi, 2008). The degree to which stress is reduced, however, may depend on the type of family policy (i.e., (de)familiarizing). As the availability of FFPs varies per country – looking at public spending – some countries invest more than others, potentially worsening the problem.

Many theories on burnout underline the importance of work/family balance in reducing e.g., the emotional exhaustion associated with burnout. However, the concept of MB is yet to be investigated directly to WCTA. Also, the role of FFPs in this relationship is expected to be essential due to its ability to either facilitate family/care reconciliation by offering flexible working arrangements to parents or emphasize independence by offering child or family-related benefits. FFPs, however, might foster gender differences by increasing care time as a result of flexibility in work, potentially not resulting in lower WCTA. Therefore, the results of this study

could provide new insights in the importance of FFPs, with which nations may have an opportunity to lower WCTA and consequently MB.

Work-care time accumulation

Labor market participation is becoming more central in Western women's lives, even after having children, which changes mother's time allocation and may lead to work-care conflict (Maher, 2009). Many women continue to take on most care responsibilities next to their jobs (Pocock, 2003), while in comparison, men's care time has only increased slightly (e.g., Stok et al., 2021). The concept of Work-care Time Accumulation (WCTA) is made up of *work*, defined as performing activities in order to achieve a particular objective and to obtain some form of income (Peeters et al., 2014); and *care*, which involves taking care of others, including unpaid care for family members (e.g., children) and domestic work (e.g., cleaning and cooking). High WCTA increases the risk of coronary heart disease and depression (Virtanen et al., 2010), poorer self-rated health, sleep problems and psychosomatic complaints (Höge. 2009), and poorer mental health (Roxburgh, 2004; MacDonald et al., 2005). Also, managing both work and care responsibilities has been found to be related to emotional exhaustion (Greaves et al., 2017). Additionally, the accumulation of time spent on both work and care contributes to gender differences in health (Bird & Fremont, 1991). Contrarily, other studies found high WCTA to be related to better self-related health (e.g., Kalenkoski et al., 2011) and increased financial earnings (OECD, 2021). It could thus be argued that WCTA and health (e.g., burnout) are related, but whether time as a human resource is a social determinant of health (Scambler, 2012) is yet to be determined.

Previous research on WCTA is scarce. Many studies agree that women's time spent on caregiving is higher than men's (e.g., DaRoit et al., 2015). Additionally, men only do gender specific tasks (Gerstel & Gallagher, 2001). Despite men working from home, women were found to be three times more likely to do the majority of caregiving and housework. This may lead to an American phenomenon called "the double shift" (i.e., caring and paid work) (Huang et al., 2021). Existing research also shows that in Australia for example fulltime employed mothers reported higher psychological distress compared to parttime working mothers (Bianchi, 2000). Research also demonstrated that the amount of care work by women has not decreased (Craig & Bittman, 2008; Stok et al., 2021). Despite the fact that some children go to school, which may provide some air to mothers, this research looks at care and work hours for children of several ages, and thus does not consider school hours to decrease care hours.

Maternal burnout

Freudenberger (1974) was the first to introduce the term "burnout". It is 'a state of exhaustion in which one is cynical about the value of one's occupation and doubtful of one's capacity to perform' (Maslach et al., 1996, p.20). Burnout involves (long-term) stress, both from bringing up children as from the demand of being part of the labor force (e.g., Vaamonde et al., 2019; Prekhidko & Swank, 2020). The concept therefore not limits itself to the professional domain (Bianchi et al., 2014), but includes life outside work (e.g., care) as well (Freudenberger, 1974; Maslach & Jackson, 1981). Being a parent could also lead to Parental Burnout (PB), which consists of four stages: (1) Emotional Exhaustion (EE; experience of different types of exhaustion depending on children's age), (2) Emotional Distancing (ED; distancing from one's children to preserve energy), Loss of Parental Pleasure (LP; loss of fulfillment in parenting), and (4) Contrast with Previous Parental Self (CPPS; contrast between past and the current parenting state) (Roskam et al., 2017; Mikolajczak et al., 2020). However, due to the social pressure(s) on women to "have it all" (Henderson et al., 2016), burnout is more frequent among women, and particularly mothers. As a result, the term "Maternal Burnout" (MB) has been developed (Maslach & Goldberg, 1998). A higher prevalence of burned-out women could lead to work dropouts, and consequently poorer economic performance (Schaufeli, 2018). Also, MB has been found to be related to suicidal ideation, child neglection, and mental dysregulation (e.g., Mikolajczak et al., 2020). Although many caregiving models (e.g., ICIM; Gérain & Zech, 2019) consider elderly care and care for impaired children, these types of care are not at the focus of this present research.

Previous research on MB is divided about the influence of work on the chances of becoming burned out. Some found that employed, specifically fulltime, mothers are less emotionally exhausted than non-working mothers (e.g., Lebert-Charron et al., 2018), which is contrary to previously mentioned research by Bianchi (2000). However, more highly educated mothers are found to experience more job demands, which may lead to stress (Hakanen et al., 2011), and as previously mentioned, stress is associated with burnout (e.g., Prekhidko & Swank, 2020). Other researchers found that mothers with a positive perception of their wellbeing are less prone to develop emotional exhaustion from work and other life roles (e.g., caring) (Maslach et al., 2001). Also, there is evidence of differences in correlations between worker's educational levels and burnout. Specifically, worker's emotional intelligence (i.e., being able to distinguish between one's own emotions and other's emotions and use that to lead personal thinking or functioning) is related to burnout, with high emotional intelligence being related to a reduced risk of getting burned-out (Gerits et al., 2004).

Family-friendly policies

Increasingly employers and states recognize the negative health consequences of women struggling to combine work and family (e.g., Voydanoff, 2005). Some organizations, companies, and states therefore try to mitigate uneven burdens on mothers by providing childcare support and other related programs (e.g., childcare allowance). "Family-Friendly policies" (FFPs) are policies that help parents and caregivers of young children to balance and benefit both work and family, providing them with resources like time, finances and services (UNICEF, 2019). FFPs have been found to be related to several positive (health) outcomes, such as child wellbeing (United Nations Global Compact, n.d.); work-related wellbeing such as job satisfaction and organizational commitment (Allen, 2001); less work-family conflict (Frye & Breaugh, 2004); and female employment which increases gender equality (e.g., Voicu et al., 2009; Lapniewska, 2014).

According to theory, FFPs can be defined by their outcomes using Leitner's matrix (Leitner, 2003), which distinguishes between *defamilialism*, *implicit (family-members) familialism*, *explicit (whole families) familialism* and *optional familialism* (Kamerman & Kahn, 1978). The boundary between defamiliarizing or familiarizing is however not well defined. Esping-Andersen (1999) defines defamiliarization as the degree of the availability of social care and support for families when they are no longer self-reliant and therefore need help, reducing dependencies between family members, and care and financial responsibilities. This help is provided from outside the home by the state, the voluntary sector or commercial providers (Lohmann & Zagel, 2016). Moreover, the risk of getting exhausted from committing to family care (e.g., Emotional Exhaustion) is often believed to be decreased as a result of such support (e.g., care services and childcare). Also, defamiliarization is a way to enable mothers to reconcile work/family life (Miller & Warman, 1996). The goal of familiarization is to grant time and day allowance for parents to take care of their children (Takahashi, 2008). Familiarizing policies include parental leave and flexible work arrangements (e.g., Takahashi, 2008; Wiss, 2017). Despite the fact that such policies are for both parents, mothers seem to use them more often (Takahashi, 2008).

FFPs have hardly been investigated in relation to WCTA and MB. Korean research by Hwang (2018) did find that (on-site) childcare and flexible working hours would decrease parenting stress. But others found that FFPs may also increase workloads as care is to be provided at work (e.g., breast pumping) (Feeney et al., 2014), and could increase gender inequality by emphasizing the mother as the main caregiving, not decreasing care time (Ray et

al., 2010). According to research, nations differ in the type of policies they provide as some offer employees to take extended periods of leave so they can engage with their families, while others offer arrangements that aim to prevent work from intruding family time (e.g., Van Doorne-Huiskes et al., 2005). As some FFPs may thus decrease WCTA and consequently the likelihood of becoming burned-out, investigating FFPs as a moderator in this relationship is valuable.

Table 1. *Overview of countries, Parental burnout, GDP, and percentage of GDP spend on family benefits.*

	Number of respondents*	Parental burnout (average)	GDP in millions (in US$)[1]	% of GDP spend on family benefits	
Australia	37	1.41	$ 1 331 377	2.10	(= $ 27 958.917)
Austria	99	.96	$ 389 385	2.62	(= $ 10 201.887)
Belgium	972	1.61	$ 468 946	3.15	(= $ 14 771.799)
Canada	167	1.35	$ 1 607 705	1.77	(= $ 28 456.3785)
Chile	180	1.26	$ 264 242	1.77	(= $ 4 677.083)
Colombia	30	.70	$ 303 755	1.66	(= $ 5 042.333)
Finland	908	1.31	$ 237 580	2.87	(= $ 6 818.546)
France	549	1.32	$ 2 415 665	3.60	(= $ 86 963.94)
Germany	69	1.15	$ 3 412 269	3.17	(= $ 108 168.927)
Italy	179	.72	$ 1 826 114	2.47	(= $ 45 105.016)
Japan	76	.80	$ 4 664 586	1.79	(= $ 83 496.089)
Poland	187	1.74	$ 473 943	2.99	(= $ 14 170.896)
Portugal	158	1.11	$ 206 048	1.69	(= $ 3 482.211)
Spain	284	1.03	$ 1 221 773	1.31	(= $ 16 005.226)
Sweden	436	.84	$ 505 893	3.40	(= $ 17 200.362)
Turkey	183	.53	$ 880 469	0.49	(= $ 4 314.298)
UK	113	1.17	$ 2 578 072	3.23	(= $ 83 271.726)
USA	134	1.44	$ 19 318 328	1.08	(= $ 208 637.942)

* *Note*. Number of respondents is unweighted.

[1] A currency converter was used in order to calculate national spending GDP in US Dollars https://www.oanda.com/currency-converter/en/?from=AUD&to=USD&amount=1849880

Current research

The present study looks at whether and how the availability of FFPs influences the relationship between WCTA and PB for mothers from several OECD-countries (see Table 1). The following hypotheses have been formulated in accordance with the theory:

H1: WCTA is positively related to MB, assuming that more accumulated time spend on care for children/household is related to higher levels of burnout among mothers;

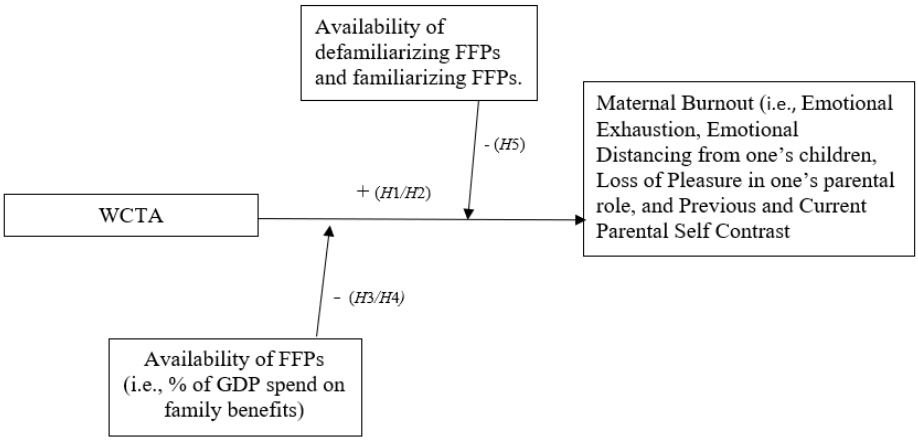
H2: WCTA is positively related to all components of MB, assuming that more accumulated time spend on care for children/household is related to higher levels on all components of MB (i.e., Emotional Exhaustion, Emotional Distancing from one's children, Loss of Pleasure in one's parental role, and Previous and Current Parental Self Contrast);

H3: The availability of FFPs (i.e., national GDP spend on family benefits) negatively moderates the relationship between WCTA and MB, assuming that burnout levels among mothers are lower as a result of a nations' investment in FFPs due to work and care being more balanced;

H4: This moderating effect of FFPs on the relationship between WCTA and MB is the same for each individual component of MB (i.e., Emotional Exhaustion, Emotional Distancing from one's children, Loss of Pleasure in one's parental role, and Previous and Current Parental Self Contrast);

H5: The availability of defamiliarizing (i.e., PPP spend on defamiliarizing policies) and familiarizing policies (i.e., PPP spend on familiarizing policies) negatively moderates the relationship between WCTA and MB, assuming that there is no difference in influence of both types of FFPs on the decrease of burnout levels among mothers.

Figure 1. Visual overview of proposed theoretical model.



Research methods

The renewed version of the Parental Burnout Assessment (PBA) (Roskam et al., 2022) by Roskam and colleagues (2017) was used for this present research. The renewed version only included mothers in order to investigate MB through PB.

Study sample

This present research is interested in working mothers in heterosexual relationships that have at least one child living at home regardless of age. As such, mothers without a paid job, mothers in non-heterosexual relationships, and mothers with no children living at home were filtered out of the dataset. Additionally, as it was assumed that fulltime work would contribute more to the effects of e.g., Emotional Exhaustion (Bianchi, 2000), Switzerland and the Netherlands were deleted from the dataset as these are the only two countries with more women working part-time (OECD.Stats, n.d.-b). This led to a final sample of N = 4760 mothers (M_{Age} = 37.71 and SD_{Age} = 6.92) from 18 different countries that have paid work, are in a heterosexual relationship, and have an average number of 16.50 (SD = 3.31) years in education.

Table 2. *Sample descriptives (unstandardized).*

	N	Min	Max	Mean	*SD*	Percentage
Age	4715	18	77	37.71	6.92	
Education Level	4687	0	30	16.50	3.31	
Number of children living at home	4750	1	18	1.93	.91	
Age of youngest child	4757	0	50	5.05	5.3	
Age of oldest child	4757	0	50	8.14	6.52	
Kind of neighborhood	4754	1	3	2.27	.50	
Relatively disadvantaged neighborhood (=1)	118					2.5%
Average neighborhood (=2)	3255					68.5%
Relatively prosperous neighborhood (=3)	1381					29%
Number of hours spend on children	4559	0	17	6.34	2.95	
Type of care	4559	1	2			

Fulltime (=1)	2433					53.4%
Parttime (=2)	2126					46.6%
Number of hours spend on work	4535	1	16	10.72	2.86	
Type of work	4535	1	2			
Fulltime (=1)	4180					92.2%
Parttime (=2)	355					7.8%

Note. N differs per variable due to invalid and missing values.

Procedure

The original data on PB by Roskam and colleagues (2021; 2022) were collected by the International Investigation of Parental Burnout (IIPB) Consortium. The survey used is available in several languages and was approved by the International Ethics Committee in Belgium. The survey included a protocol with an informed consent, some questions on demographics, and a questionnaire on PB and gender equality[2].

Ethical standards were met by each country that accepted the IIPB's 'Call for participation'. Participants of the PBA survey were recruited via newspaper advertisement, word of mouth, social networks, and door-to-door. The survey was presented to participants either on paper or online, depending on local practices. The original data were collected between January 2017 and March 2019. Participants of OECD.Stats databases (OECD, n.d.) were approached through convenience and snowball sampling, for which each nation had to ask democratic permission.

Each PBA survey respondent was presented with an informed consent in advance, which consisted of information on e.g., the way of data collection and voluntary cooperation. Only at the end of each questionnaire respondents were debriefed about the purpose of the study. This was done in order to avoid (self-)selection bias. The original dataset survey started with 9 questions on demographics (e.g., How old are you? [In years, e.g., 45]) followed by 23 items on Parental Burnout and some other items on related topics.

Measures

Maternal Burnout. MB was assessed using the PBA survey (Roskam et al., 2017; 2021), which consisted of 23 items measured on a 7 point Likert scale (0 = *Never* to 6 = *Every*

[2] https://osf.io/m9dz2/?view_only=bea4a7854a314b399cbfbb483237f75d

day), that assessed the main symptoms of Parental Burnout (PB) (see Appendix B). *Emotional Exhaustion* was measured using 9 items (e.g., 'I feel completely run down by my role as a parent.'); *Contrast with Previous Parental Self* was measured using 6 items (e.g., 'I tell myself I'm no longer the parent I used to be.'); *Loss of pleasure in one's Parental role* was measured using 5 items (e.g., 'I do not enjoy being with my children.'); and *Emotional Distancing from one's children* was measured using 3 items (e.g., 'I am no longer able to show my children that I love them). Scores on PB were averaged, with a higher average score reflecting higher burnout levels. Cronbach's alpha for the original scale ranges from .76 to .96 (Roskam et al., 2021).

(**Availability of) Family-Friendly Policies.** The use of policies that help parents balance work and care responsibilities was measured by the expenditure on family benefits per country, measured as the GDP in US$ per nation. For each country, the expenditure on family-benefits in percentages is calculated (see Table 1). A higher amount resembles more money spend on family benefits and thus greater availability compared to a lower amount. The distinction between defamiliarizing and familiarizing policies was measured in PPP in US$ instead of national spending in US$. For defamiliarizing policies, the average spending in PPP was calculated.

Work-Care Time Accumulation. The accumulation of hours spent on both paid work and (non-paid) care was measured by creating a new variable based on hours spent on children. The maximum combined hours spent on care and work was set on 15, since the average hours of sleep necessary for adults is 7 hours (CDC, 2017), people are assumed to spend an average of 2 hours on self-care (OECD, n.d.), and mothers need 1 hour on average to travel to and from work daily (OECD, n.d.). The average amount of fulltime work hours per day is approximately 4.5, based on a 7-day workweek of minimal 30 hours (OECD, n.d.-a). This led to a calculation of max. 10.5 daily care hours + 4.5 work hours = 15 work hours per day.

Alternative explanations

Respondents' **age** was measured by the item 'How old are you?' (In years). Because age has been found to be associated with higher average scores on Emotional Exhaustion (Schaufeli & Van Dierendonck, 2000), age could potentially influence burnout levels.

Education level was measured by asking respondents about their level of education in terms of the number of successfully completed school years from the age of 6. As more highly educated people more often have higher work demands, which could lead to stress in the work

domain (Hakanen et al., 2011), educational levels may influence burnout among working mothers.

The **number of children living at home** was measured by asking respondent how many children currently lived at their home. Since having several children at home may increase mothers' feelings of stress (Lundberg et al., 1994), and stress has been associated with increased chances of getting burned out, this variable is considered to influence burnout.

Age of youngest child was measured by asking respondents for the age of their youngest child in years. According to existing research, fatigue, stress and burn-out are most evident for mothers caring for younger children (Giallo et al., 2013). Therefore, age of youngest child is considered a control variable.

Age of oldest child was measured by asking respondents for the age of their oldest child in years. According to existing research, mothers of e.g., adolescents are also likely to get burned-out (Auriol-Bartro, 2011). Therefore, age of oldest of oldest child is considered a control variable.

Analytic strategy

SPSS statistics version 27 was used to scan the data and perform all statistical analyses. No flaws were found after checking data scales and measures. Also, no reverse coding was necessary. Next, all respondents that did not meet the previously mentioned criteria were filtered out. Demographics and frequencies were checked and put in Table 2.

Correlations between the different variables were calculated and presented in table 3. Due to unequal distributions of respondents for each country, scores were equalized by calculating weight scores on the percentage of representativeness of each country (%5.55). In addition, regression assumptions were checked (i.e., linearity, multicollinearity, homoscedasticity, independence of observations, and normality of distribution). Although the assumption of linearity was violated and there were some minor indicates for violation on the other assumptions, outlier scores were not deleted as deleting them all at once could influence the results. Lastly, due to the use of different measurement scales, values were standardized before creating the interaction terms.

Several (multiple) linear regression analyses (MLR) were performed in order to test the hypothesis. Models 1-5 (H1-H2) included WCTA as the independent variable and PBA and its

components as the dependent variables. Models 6-10 (H3-4) included WCTA, PBA and its components, and an interaction term consisting of WCTA and national spending on family-benefits (WCTA*GDP in US$) as the proposed moderator. Models 6a-10e included WCTA, PBA and its components, the interaction term, and the proposed control variables (i.e., age, education level, number of children in household, age of oldest child, and age of youngest child) which were added Stepwise. Lastly, models 11 and 12 (H5) consisted of WCTA, PBA and its components, and an interaction term consisting of WCTA and spending on either defamiliarizing (WCTA*DefampolUS$) or familiarizing policies (WCTA*FampolUS$).

Statistical results

Descriptive statistics

The average PB score for mothers was *M*=1.25 (*SD*=1.14). Specifically, Emotional Exhaustion scores were relatively high (*M*=1.64, *SD*=1.36) compared to all other components of PB, ranging from .95 (*SD*=1.16) for Loss of Pleasure to 1.06 (*SD*=1.23) for Contrast with Previous Parental Self.

Most mothers lived in average neighborhoods (68.5%), with at least 1 child living at home to a maximum of 18 (*M*=1.93, *SD*=.91). The ages of the children varied between 0 and 50 years old, with the youngest child being around 5 years old (*SD*=5.3) on average and the oldest child being around 8 years old (*SD*=6.52) on average. The distribution of part-time and full-time carers was almost equal (respectively 46.7% and 53.3%), while in contrast there were as expected more fulltime than parttime workers (respectively 7.8% and 92.2%). Lastly, the average number of weekly care hours was 6.34 (*SD*=2.95). Table 2 offers a full overview of the sample descriptives.

Zero-order correlations

Table 3 reports all zero-order correlations among the descriptive statistics measures. As can be seen in the table, national spending on defamiliarizing policies, familiarizing policies, and family-policies is significantly related to most of the dependent variables. Additionally, positive significant correlations exist between PB and educational level, r =.054, p <.01 and between PB and the number of children living at home, r =.090, p <.01. Negative significant correlations exist between PB and age, r =-.131, p <.01, between PB and age of oldest child, r =-.120, p <.01, and between PB and age of youngest child, r =.157, p <.01. Based on these results, it was decided to include all proposed control variables in the final analyses.

Table 3. *Pearson's correlations.*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Age	-													
(2) Educational level	-.033*	-												
(3) Number of children living at house	.116**	.041**	-											
(4) Age of oldest child	.784**	-.137**	.286**	-										
(5) Age of youngest child	.776**	-.135**	-.005	.846**	-									
(6) Accumulation of time spent on work and care (WCTA)	-.194**	-.022	.036*	-.165**	-.181**	-								
(7) GDP spent on defamiliarizing policies	-.053**	-.168**	.080**	-.028	-.064**	.161**	-							
(8) GDP spent on familiarizing policies	-.111**	.230**	.083**	-.103**	-.111**	.052**	.134**	-						
(9) Nat GDP spent on family-benefits	.050**	-.038*	-.012	.070**	.094**	.028	.107**	-.127**	-					
(10) LP_avg	-.136**	.091**	.041**	-.134**	-.141*	.052**	-.055**	.101**	-.004	-				
(11) CPPS_avg	-.107**	.058**	.103**	-.104**	-.127**	.035*	.008	.138**	.059**	.769**	-			
(12) EE_avg	-.217**	.106**	.054**	-.236**	-.252**	.062**	-.036*	.123**	.082**	.791**	.751**	-		
(13) ED_avg	-.056**	.082**	.093**	-.056**	-.083**	-.031*	-.017	.074**	-.006	.688**	.744**	.651**	-	
(14) PBA_avg	-.170**	.097**	.076**	-.178**	-.197**	.047**	-.029	.129**	.054**	.898**	.902**	.943**	.797**	-

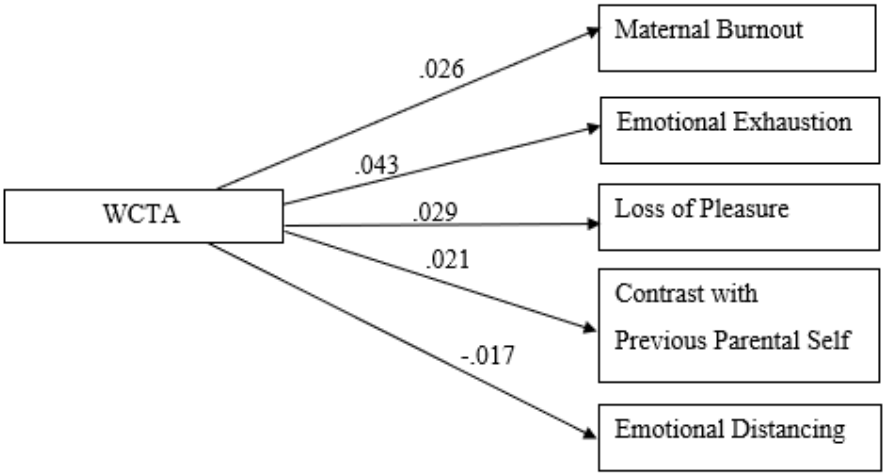
* $p < .05$ (2-tailed). ** $p < .01$ (2-tailed).

Main analyses

Multiple models tested whether WCTA, PB and its separate components were related, and whether and how the availability of FFPs as the proposed moderator would influence this effect. Figures 2-4 show a visual overview of the results.

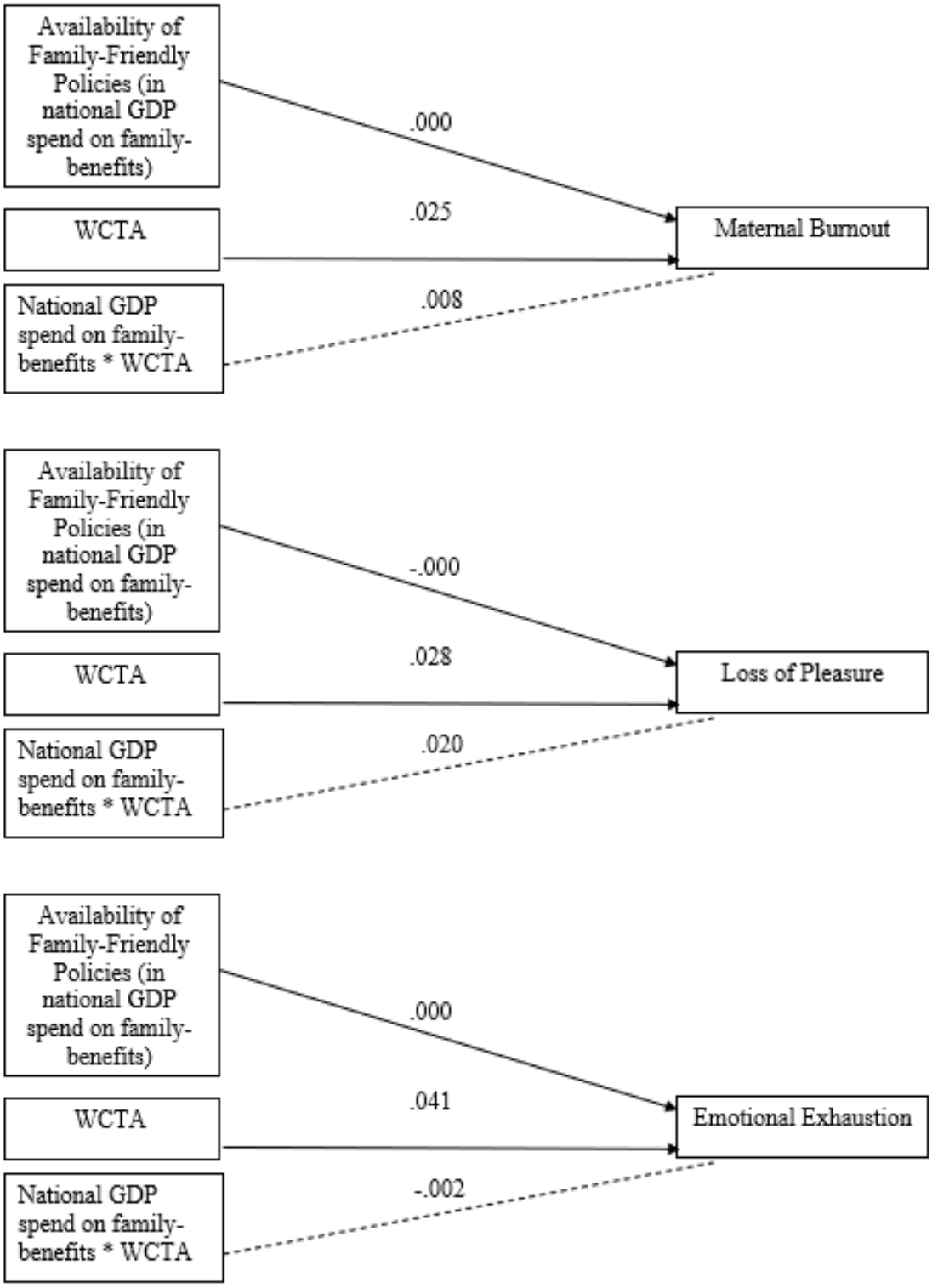
LR analysis for models 1-5 showed that WCTA is positively and significantly related to PB (*model 1*), *b* =.026, 95% CI[.009, .044], *t* =2.97, *p* =.003, LP (*model 2*), *b* =.029, 95% CI[.012, .046], *t* =3.30, *p* <.001, EE (*model 3*), *b* =.043, 95% CI[.021, .064], *t* =3.93, *p* <.001, and CPPS (*model 5*), *b* =.021, 95% CI[.002, .040], *t* =2.21, *p* =.027, and negatively and significantly related to ED (*model 4*), *b* = -.017, 95% CI[-.034, .000], *t* = -1.97, *p* =.05.

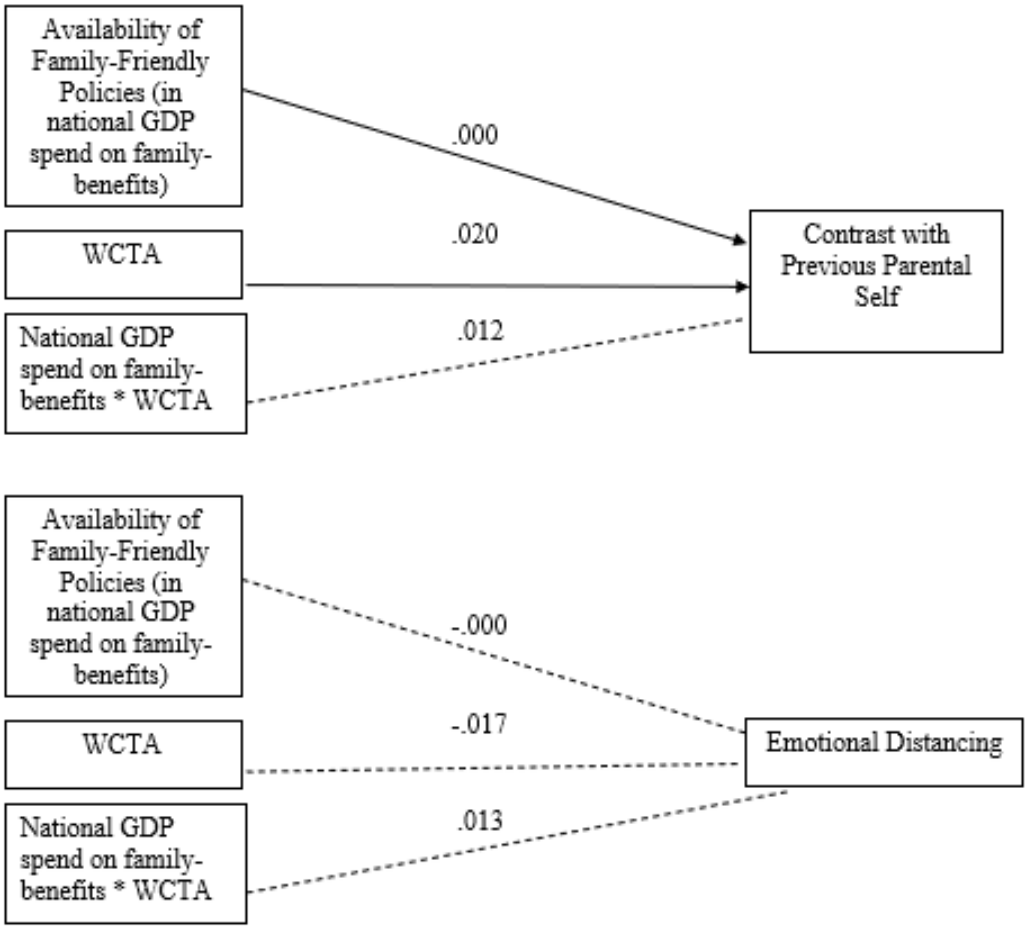
Figure 2. Schematic overview of statistical results model 1-5.



MLR analyses for models 6-10, showed that for *model 6*, both WCTA, *b* =.025, 95% CI[.008, .043], *t* =2.86, *p* =.004 and national spending on family-benefits, *b* =.000, 95% CI[.000, .000], *t* =3.02, *p* =.003, were positively and significantly related to PB. For *model 7*, only WCTA was positively and significantly related to LP, *b* =.028, 95% CI[.011, .657], *t* =3.24, *p* =.001. For *model 8*, both WCTA, *b* =.041, 95% CI[.020, .062], *t* =3.79, *p* <.001, and national spending on family-benefits, *b* =.000, 95% CI[.000, .000], *t* =5.27, *p* <.001, were positively and significantly related to EE. For *model 10*, both WCTA, *b* =.020, 95% CI[.001, .039], *t* =2.10, *p* =.036, and national spending on family-benefits, *b* =.000, 95% CI[.000, .000], *t* =2.88, *p* =.004, were positively and significantly related to CPPS. *Model 9* was not significant.

Figure 3. Overview of statistical results for the moderation models 6-10.

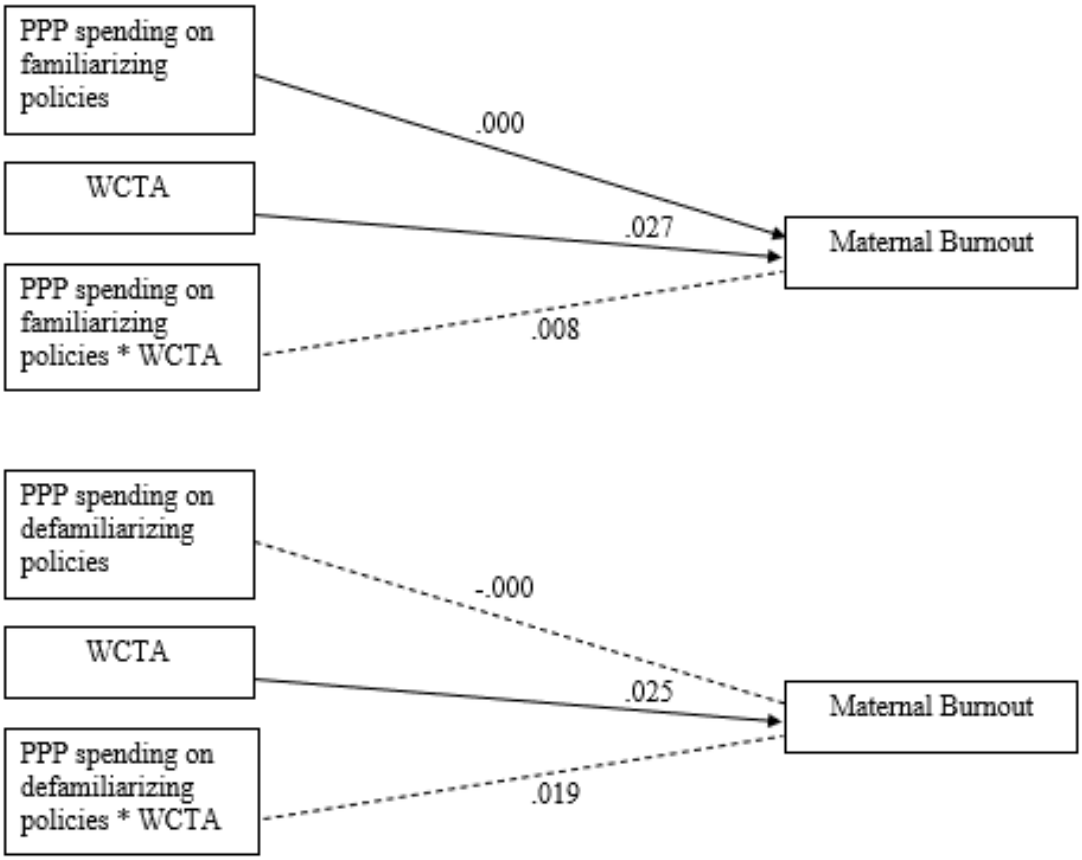




MLR analyses for models 6a-10e showed that for *model 6e*, consisting of PB, WCTA, national spending on family-benefits, the interaction term, and all proposed control variables, national spending on family-benefits, b =.000, 95% CI[.000, .000], t =2.99, p =.003, education level, b =.022, 95% CI[.012, .032], t =4.32, p <.001, and number of children at home, b =.160, 95% CI[.112, .209], t =6.52, p <.001 were positively and significantly related to PB, and that age of oldest child, b = -.013, 95% CI[-.025, .000], t = -2.03, p =.043 and age, b = -.015, 95% CI[-.023, -.008], t =3.97, p <.001 were negatively and significantly related to PB. Model 8e, consisting of EE, WCTA, national spending on family-benefits, the interaction term, and all proposed control variables, had the highest explained variance of all models R^2 =.085=8.5% (see Table 4).

Lastly, MLR analyses for models 11 and 12 showed that for *model 11*, only WCTA was significantly related to PB, b =.025, 95% CI[.006, .045], t =2.54, p =.011. For *model 12*, both WCTA, b =.027, 95% CI[.010, .045], t =3.02, p =.003, and spending on familiarizing policies, b =.000, 95% CI[.000, .000], t =7.47, p <.001, were positively and significantly related to PB.

Figure 4. Overview of statistical results for the moderation models 11 and 12.



Conclusion

H1 is accepted as WCTA significantly predicted burnout among mothers (model 1). H2 is partly accepted as WCTA is positively related to CPPS, LP, and EE, but negatively related to ED. This means that mothers with higher combined work and care hours are less likely to emotionally distance themselves from their children, while mothers with high combined work and care hours are more likely to experience emotional exhaustion, loss of pleasure in one's parental role, and a contrast with their previous parental self.

H3 and H4 are rejected as no significant interaction terms are found (models 6-10). There thus is no moderation effect of the availability of FFPs on the relationship between WCTA and PB among mothers.

H5 is rejected as both model 11 and 12 showed no significant interaction terms. There likely is no moderation effect. The type of family-benefit thus does not seem to matter in influencing burnout among mothers with high WCTA. The model including familiarizing policies however explains more variance than the model including defamiliarizing policies.

Lastly, results showed that adding the proposed control variables Stepwise led to an

increase in R-squared, which suggests more variance in PB among mothers is explained by alternative factors. However, interaction terms remained insignificant and the original association between WCTA and PB was no longer significant. This thus means that when age, age of oldest and youngest child, number of children living at home, and educational level are kept fixed, the relationship between WCTA and PB is no longer existent. The relationship between WCTA and PB is not causal and thus likely explained by alternative factors.

Table 4. *Overview of explained variance per model.*

Model	R^2	*F*	*p*
1	.002	(1, 3960) = 8.80	.003
2	.003	(1, 3959) = 10.87	< .001
3	.004	(1, 3960) = 15.45	< .001
4	.001	(1, 3959) = 3.86	.050
5	.001	(1, 3960) = 4.89	.027
6	.005	(3, 3958) = 5.99	< .001
7	.003	(3, 3957) = 4.11	.006
8	.011	(3, 3958) = 14.58	< .001
9	.002	(3, 3957) = 2.59	.051
10	.003	(3, 3958) = 4.43	.004
6a	.050	(4, 3954) = 51.68	< .001
6b	.050	(5, 3953) = 41.38	< .001
6c	.044	(6, 3733) = 28.93	< .001
6d	.050	(7, 3701) = 27.82	< .001
6e	.060	(8, 3692) = 29.65	< .001
7a	.022	(4, 3953) = 21.99	< .001
7b	.022	(5, 3952) = 17.78	< .001
7c	.024	(6, 3732) = 15.03	< .001
7d	.030	(7, 3700) = 16.32	< .001
7e	.035	(8, 3691) = 16.49	< .001
8a	.081	(4, 3954) = 86.60	< .001
8b	.081	(5, 3953) = 69.94	< .001
8c	.072	(6, 3733) = 48.19	< .001
8d	.077	(7, 3701) = 44.01	< .001
8e	.085	(8, 3692) = 42.69	< .001
9a	.016	(4, 3952) = 16.13	< .001
9b	.017	(5, 3951) = 13.81	< .001
9c	.015	(6, 3731) = 9.35	< .001

9d	.020	(7, 3700) = 11.02	< .001
9e	.030	(8, 3691) = 14.32	< .001
10a	.025	(4, 3954) = 25.54	< .001
10b	.025	(5, 3953) = 20.60	< .001
10c	.024	(6, 3733) = 15.55	< .001
10d	.027	(7, 3701) = 14.60	< .001
10e	.040	(8, 3692) = 19.37	< .001
11	.003	(3, 3293) = 2.91	.033
12	.018	(3, 3736) = 22.73	< .001

Discussion

The present study tried to answer the following research question: *Is there a relation between accumulated time spent on care and work (WCTA) and maternal burnout (MB), and if so, does the availability of Family-Friendly Policies (FFPs) moderate this relationship and how?* Hypotheses were formulated based the theoretical framework, which were investigated by conducting several (multiple) linear regression analyses with SPSS. As expected, results showed that high WCTA was associated with more overall burnout among mothers (H1). However, although high WCTA was associated with more Emotional Exhaustion (EE), Loss of Pleasure as a parent (LP) and Contrast with Previous Parental Self (CPPS) among mothers, high WCTA was unexpectedly associated with less Emotional Distancing from children (ED).

The latter finding might support the claim that workers experience less burnout than non-workers ((Lebert-Charron et al., 2018), as workers do not just take care of the children but also have some distraction from work. Moreover, parents may use strategies to cope with stress from work and care (e.g., cognitive appraisal strategy), which may cause them to perceive their work-care situation as less stressful (Drach-Zahavy & Erez, 2002) – thus experiencing more pleasant emotions in e.g., caring and consequently lowering emotional distancing from their children (Findling et al., 2022).

Next, no significant moderation effects were found in any of the models despite adding the proposed control variables, which means that the availability of FFPs does not moderate the relationship between WCTA and MB. It might thus be true that family policies foster gender inequality by emphasizing women's caregiver role, and thus not reducing mother's WCTA and the likelihood of becoming burned-out (Ray et al., 2010). Alternatively, public provisions provided by the state – with the goal of easing the combination of work and family life (e.g., Van Doorne-Huiskes et al., 2005) – might not be sufficient (enough) to moderate burnout levels

among mothers with high WCTA. This could highlight the importance of workplace policies, as they are deemed essential to provide opportunities for pregnant and parenting workers to raise healthy children (Montez & Messersmith, 2022), which could reduce stress. Secondly, as all families face different challenges in life, for some, regular family-benefits may not be enough to solve all problems, which is why a collection of interrelated policies (e.g., state and additional work policies) might be necessary (Zimmerman, 1995). Moreover, as the scope of family-policies varies per country, this could result in different outcomes that might not aim at reliving stress or establish a work-life balance. A more methodological explanation could be the single item measures of (de)familiarizing policies (e.g., child allowance and GDP spent on family-policies), which gives a limited and one-dimensional view on a nation's patterns of such policies (Lohmann & Zagel, 2016). Also, due to minor evidence of collinearity, the interaction term indicating moderation may look too much like the other two independent variables, therefore not adding much information about MB. The latter fact may also explain why the results found no difference in the type of policy in moderating the relationship between WCTA and MB as both interaction terms were non-significant (H5).

Lastly, the results that the relationship between WCTA and MB is not causal and that alternative explanations are in play. All control variables came back significant in relation to PB, which supports the theory behind the introduction of the control variables in the models (e.g., Gerits et al., 2004). But the finding that mother's age is negatively associated to PB is contrary to the theory (Schaufeli & Van Dierendonck, 2000). However, as PB is more than just Emotional Exhaustion, this finding is not strange. Also, findings are contrary to the claim that mothers of adolescent children experience more burnout (Auriol-Bartro, 2011).

Strengths and limitations

This study is one of the first to look at the accumulation of work and care hours in relation to maternal burnout. Besides, the scope of the research topic is large as the datasets used incorporate 18 OECD-countries. Also, as the PBA by Roskam and colleagues (2017) has often been used in previous burnout research (e.g., Findling et al., 2022), the validity of the measurement scale is high. Third, as demographic characteristics of the study sample are quite similar to the real population, the population representativeness of this study sample is high. Lastly, since MB is studied on both the individual and institutional/social level, making this an interdisciplinary study, the results can be used by both individuals (e.g., health professionals, psychiatrists, policy makers) and institutions (e.g., governances, states) to improve mothers' wellbeing.

However, as this research is based on mostly assumptions due to the lack of suitable open-datasets and theory, ecological validity may be low, which means results of this study should be interpreted cautiously. Moreover, as the sample contained many outlier scores, which were not deleted due to lack of time, this may alter the interpretations of the results. Next, countries' small sample sizes, especially after the filters were added (e.g., Australia, Germany) could be problematic as it could influence the external validity or generalizability of the results for these countries. Secondly, PB was used as a measurement instead of MB. As there are some minor differences in definition, there may be a problem with the content validity. Lastly, as there was no item measuring weekly working hours, the variable WCTA had to be computed based on assumptions and weekly care hours only. WCTA thus not exactly measured what was intended, influencing the construct validity of this research.

Future research

As there was no item in the existing dataset that measured work hours, this made it difficult to measure WCTA. The development of a validated measurement scale would therefore be valuable as it prevents future bias. Second, as this research only incorporated fulltime working women (> 30 hours a week), it would be interesting to look at the difference in parttime and fulltime working women, as theory suggests that parttime working mothers experience less emotional exhaustion than fulltime working women (Lebert-Charron et al., 2018). Also, as there are many theories about workplace family policies, it would be interesting to replicate the present study with (a combination of state and) workplace policies. Lastly, the dataset did not ask whether parents had children with special needs (CSN), although theory suggests that this could also increase the risk of parental burnout among mothers (Gérain & Zech, 2018). It might thus be interesting to consider CSN in future research.

Conclusion

This present research demonstrated a significant relationship between WCTA and MB but found no evidence for a moderating effect of state-provided FFPs, indicating that the underlying aim of FFPs is not sufficient to decrease the likelihood of mothers becoming more burned-out as a result of the accumulation of work and care hours. As little has changed so far for mothers in terms of care responsibilities, and work responsibilities increase as well, the problem is only expected to worsen. It is thus recommended that OECD-countries review their family-policies and outcomes to be able to decrease the future health risk of maternal burnout. If not, burn-outs may lead to drop-outs.

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Appendix A - Parental Burnout Assessment (Roskam et al., 2017)

Item	Question	7-point Likert Scale					
		Never	A few times a year	Once a month or less	A few times a month	Once a week	Every day
EX1	I feel completely run down by my role as a parent						
EX2	I have the sense that I'm really worn out as a parent						
EX3	I'm so tired out by my role as a parent that sleeping doesn't seem like enough						
EX4	When I get up in the morning and have to face another day with my child(ren), I feel exhausted before I've even started						
EX5	I find it exhausting just thinking of everything I have to do for my child(ren)						
EX6	I have zero energy for looking after my child(ren)						
EX7	My role as a parent uses up all my resources						
EX8	I sometimes have the impression that I'm looking after my child(ren) on autopilot						
EX9	I'm in survival mode in my role as a parent						

CO1	I don't think I'm the good father/mother that I used to be to my child(ren)						
CO2	I tell myself that I'm no longer the parent I used to be						
CO3	I'm ashamed of the parent that I've become						
CO4	I'm no longer proud of myself as a parent						
CO5	I have the impression that I'm not myself any more when I'm interacting with my child(ren)						
CO6	I feel as though I've lost my direction as a mum/dad						
FU1	I can't stand my role as father/mother any more						
FU2	I can't take being a parent any more						
FU3	I feel like I can't take any more as a parent						
FU4	I feel like I can't cope as a parent						
FU5	I don't enjoy being with my child(ren)						
ED1	I do what I'm supposed to do for my child(ren), but nothing more						
ED2	Outside the usual routines (lifts in the car, bedtime, meals), I'm no longer able						

	to make an effort for my child(ren)						
ED3	I'm no longer able to show my child(ren) how much I love them						

EX = Exhaustion in Parental role;

CO = Contrast in Parental self;

FU = Feelings of being fed up;

ED = Emotional Distancing.