
Original Article

Gendered Pathways to Burnout: Results from the SALVEO Study

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Abstract

Aim: Burnout is a pervasive mental health problem in the workforce, with mounting evidence suggesting ties with occupational and safety outcomes such as work injuries, critical events and musculoskeletal disorders. While environmental [work and non-work, work-to-family conflict (WFC)] and individual (personality) pathways to burnout are well documented, little is known about how gender comes to influence such associative patterns. The aim of the study consisted in examining gendered pathways to burnout.

Methods: Data were derived from the SALVEO study, a cross-sectional study of 2026 workers from 63 workplaces from the province of Québec (Canada). Data were analyzed using multilevel path analysis.

Results: Direct effects of gendered pathways were evidenced for work (e.g. decision latitude) and non-work (e.g. child-related strains) environmental pathways, as well as for individual pathways (i.e. internal locus of control). Indirect effects of gendered pathways were also evidenced, with women reporting higher levels of burnout compared to men due to lower levels of decision latitude and of self-esteem, as well as higher levels of WFC. Women also reported lower burnout levels through investing more time into domestic tasks, which could represent a recovery strategy to highly demanding work. WFC further mediated the associations between working hours and burnout, as well as the between irregular work schedules and burnout. These results suggest that men distinctively reported higher levels of burnout due to the specific nature of their work contract negatively impacting on WFC, and incidentally, on their mental health.

Conclusion: Study results supported our hypotheses positing that gender distinctively shapes environmental and individual pathways to burnout. OHS prevention efforts striving for better mental health outcomes in the workforce could relevantly be informed by a gendered approach to burnout.

Keywords: psychosocial work environment, non-work environment, gender differences, burnout, Canada, multilevel path analyses

Introduction

Empirical research has long emphasized the need to better understand pre-pathological mental health outcomes in order to sustainably foster a healthy workforce (Stansfeld and Candy, 2006; Seidler *et al.*, 2014), with burnout attracting significant attention. Burnout is a psychological syndrome that encompasses symptoms of emotional exhaustion, cynicism, and self-inefficacy in work role performance and results from chronic exposure to excessive demands from the work environment (Maslach *et al.*, 2001). Burnout prevalence in the general workforce is estimated between 4 and 13% (Norlund *et al.*, 2010; Maske *et al.*, 2016), with higher figures generally concentrated in at-risk occupations (e.g. human services, healthcare) (Bährer-Kohler, 2012). Burnout has been identified as a risk factor for occupational health and safety (OHS) outcomes such as work injuries, critical events at work (Nahrgang *et al.*, 2011), and musculoskeletal disorders (Armon *et al.*, 2010). Consequently, increasing knowledge on burnout and its explanatory dynamics may represent a key component to a comprehensive OHS prevention strategy.

Nevertheless, one current challenge faced by burnout and OHS research in general arises from the limited knowledge we have on gender inequalities in workers' health outcomes (Campos-Serna *et al.*, 2013; Malach-Pines and Ronen, 2016), potentially curtailing well-targeted prevention efforts in that respect. Tackling gender inequalities in occupational mental health invites us to conceive gender as a social determinant shaping differential exposure to constraints and opportunities for men and women in employment. The gendered processes underlying such differential exposure (e.g. social stratification, socialization) are posited to be associated with differences in mental health problems reported by men and women (Springer *et al.*, 2012). Relatedly, the primary assumption that burnout is not evenly distributed among men and women seems supported. In a recent meta-analysis, Purvanova and Muros (2010) found that women tended to report somewhat higher levels of overall burnout than men. Further attempts to identify the underlying explanatory pathways leading to differences in burnout between men and women have so far been limited and inconsistent (Malach-Pines and Ronen, 2016). This study thus aims to shed additional light on gendered pathways to burnout relying on a quantitative assessment of a large sample of Canadian workers.

Gendered environmental and individual pathways to burnout

Predominant models of work stress such as the Job Demand–Control–Support model (Karasek and Theorell, 1990), the Effort–Reward–Imbalance model (Siegrist and

Peter, 2000), and the Job Demands–Resources model (Demerouti *et al.*, 2001) have targeted multiple pathways linking the work environment to burnout. *Work demands* are features of the psychosocial work environment (e.g. psychological or physical demands, job insecurity, negative social interactions at work such as abusive supervision, interpersonal conflicts) and of the work contract (i.e. long hours, irregular shifts) conventionally seen as stressors leading to burnout development over time. *Work resources* are features of the psychosocial work environment (e.g. skill utilization, decision authority, organizational rewards, adequate social support at work) that contribute to reducing the negative impact of work stressors on burnout development. According to these theoretical models, adverse mental health outcomes are anticipated when chronic work demands deplete work resources that can effectively be accessed and mobilized by workers in dealing with such demands over time. Although there is ample evidence supporting associations between work demands, work resources, and burnout (Crawford *et al.*, 2010), little is known about whether and how gender is an antecedent to an unequal distribution of work demands and resources *a priori*. Seidler *et al.* (2014), in a systematic review on associations between work demands, work resources, and emotional exhaustion, concluded to insufficient prospective evidence of differences between men and women in burnout and associated work factors.

Environmental pathways to burnout have been extended to the non-work environment. The non-work environment refers to pivotal life environments outside the workplace (e.g. family, networks, community, society) in which workers also evolve on a daily basis (Beauregard *et al.*, 2011), and from which demands and resources influential to workers' mental health can also emanate. Non-work demands (e.g. parental stress) and non-work resources (e.g. marital support) from the family domain have been the most often investigated in that matter (Leiter, 1990; Missler *et al.*, 2013). Conflicting relationships between work and family domains are also deemed to place additional demands on workers. Work-to-family conflict (WFC) is a 'form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect' (Greenhaus and Beutell, 1985). Both WFC and family-to-work conflict (FWC) are considered as stressors associated with burnout, WFC showing associations of a stronger magnitude (Reichl *et al.*, 2014). Given that work and non-work stressors are antecedents of WFC/FWC (Michel *et al.*, 2011), it can be argued that WFC/FWC plays a mediating role in the stressors–burnout association. One study corroborated that WFC- and FWC-mediated associations

between work and non-work social support and burnout and that such associative patterns differed for men and women (Blanch and Aluja, 2012). Despite a narrowing gap in gender inequality in the division of housework observed in industrialized countries over the past decades (Scott and Plagnol, 2012; Altintas and Sullivan, 2016), a pervasive imbalance still places women at a disadvantage. Consequently, assessing gender differences in exposure to non-work demands and resources may provide additional insights as to whether this imbalance, as a gendered social process, extends to burnout. Individual pathways to burnout pertaining to individual resources from workers' personality have also been documented. Locus of control and self-esteem are psychological traits linked with burnout (Rosse *et al.*, 1991; Wang *et al.*, 2010) and known to be sensitive to gender differences (Sherman *et al.*, 1997; Kocalevent *et al.*, 2014). To our knowledge, no study has assessed whether gendered environmental pathways (work, non-work, WFC/FWC) and individual pathways (personality) contribute cumulatively to explaining burnout differences in men and women.

Lastly, it has been suggested that a gendered differential exposure to stressors and resources from life environments (work and non-work) rather than a vulnerability to stress reactions most prominently accounted for differences between men and women in depressive symptoms (Marchand *et al.*, 2016). In accordance with an exposure hypothesis, we seek to examine whether differences in burnout between men and women stem from environmental pathways that are gendered. Specifically, we posit that a gendered exposure to resources and demands from life environments (e.g. work and non-work) is associated with differences in burnout between men and women. Additionally, we seek to examine whether access to personal resources associated with personality (e.g. self-esteem, locus of control)

is a gendered individual pathway explaining burnout differences in men and women. Figure 1 illustrates the analytical model guiding our empirical validation.

Method

Participants and procedures

The analyses were based on data from the SALVEO study, a cross-sectional study conducted in 2009–2012 in the province of Québec (Canada). The SALVEO study followed a two-stage design. First, $n = 63$ workplaces identified from a list of 500 client companies of a large insurance company were randomly sampled, for a response rate of 41.0% significantly higher than what is reported elsewhere in organizational research (Baruch and Holtom, 2008). Participating workplaces did not significantly differ from non-participating workplaces based on insurance claims for mental health issues. Sampled workplaces were from the private sector and reflected a wide range of industrial activities ($n = 19$ from the manufacturing sector, $n = 44$ from the services sector), with a union rate of 34.9% and an average workplace size of 247.1 workers. Second, a random sample of workers was selected within workplaces, yielding $n = 2162$ participants for a response rate of 73.1%. Respondents answered during working hours a self-administered questionnaire aimed at evaluating work and non-work determinants of workers' mental health. The Ethics Committees of the University of Montreal, McGill University, Laval University and Concordia University approved the study.

Measures

Burnout

Burnout was evaluated using the 16-item Maslach Burnout Inventory—General Survey (Schaufeli *et al.*, 1996) based on a four-point Likert scale (1 = strongly

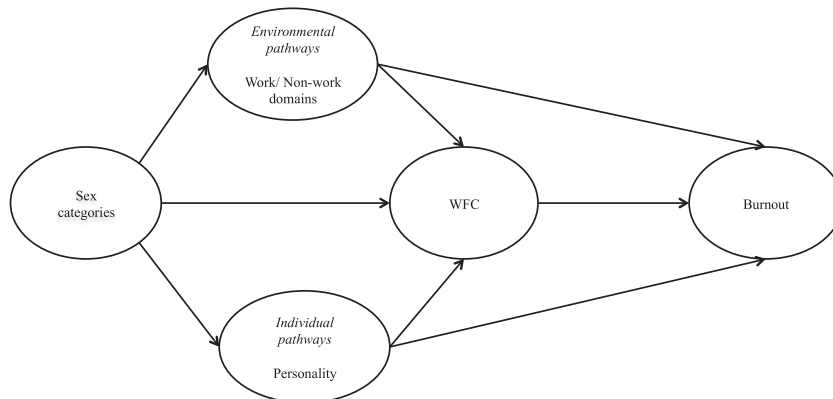


Figure 1. Tested model of the associations between study variables.

disagree, 4 = strongly agree). Drawing from a unidimensional approach of the burnout concept (Brenninkmeijer and Van Yperen, 2003), we relied on a composite score from subscales of emotional exhaustion (five items), cynicism (five items) and professional inefficacy (six items) to examine burnout as a global syndrome. The composite score had good reliability (Cronbach's $\alpha = 0.89$).

Work-family conflict

WFC (four items; $\alpha = 0.79$) and FWC (four items; $\alpha = 0.74$) were assessed using a scale developed by Gutek *et al.* (1991). Items were measured on a four-point Likert scale (1 = strongly disagree, 4 = strongly agree).

Work factors

Psychosocial work environment was evaluated using recommended instrumentation for the Demand-Control-Support model (Karasek and Theorell, 1990) and the Effort-Reward-Imbalance model (Siegrist, 2002). The Job Content Questionnaire (Karasek *et al.*, 1998) measured skill utilization (six items; $\alpha = 0.80$), decision authority (three items; $\alpha = 0.79$), psychological demands (nine items; $\alpha = 0.73$), social support from colleagues (four items; $\alpha = 0.83$), and social support from the supervisor (four items; $\alpha = 0.89$). The Effort-Reward-Imbalance questionnaire (Siegrist and Peter, 1996) measured physical demands (one item; 'my job is physically demanding'), recognition (six items; $\alpha = 0.82$), career perspectives (four items; $\alpha = 0.69$), and job insecurity (two items, $\alpha = 0.65$). Both instruments were assessed using a four-point Likert scale (1 = strongly disagree, 4 = strongly agree). Abusive supervision was measured using Tepper's 15-item scale with a five-point Likert scale (1 = I cannot remember him ever using this behavior with me, 5 = He uses this behavior very often with me; $\alpha = 0.91$) (Tepper, 2000). Interpersonal conflicts were measured with a five-item scale developed by Harvey *et al.* (2006) based on a four-point Likert scale (1 = never, 4 = very often; $\alpha = 0.91$). The nature of the work contract was evaluated based on the number of working hours per week and on the frequency of exposure to irregular or unpredictable work schedule (1 = never, 4 = all the time).

Non-work factors

Single-parent family status was derived from respondents' marital status and parental status of minor children in the household (1 = single parent, 0 = other possible combinations in marital and parental status). Marital strains (four items; $\alpha = 0.70$) and parental strains (four items; $\alpha = 0.60$) were two scales derived from Wheaton's work (Wheaton, 1994) based on a binary response

format (false/no; true/yes). Domestic tasks measured the number of hours spent on housework chores per week, whereas caregiving accounted for the number of hours spent on taking care of an elderly parent and/or a handicapped person per week.

Individual factors

Personal resources included psychological traits associated with locus of control and self-esteem. Locus of control (internal) was measured using a seven-item scale ($\alpha = 0.84$) developed by Pearlin and Schooler (1978). Self-esteem was measured using Rosenberg's 6-item scale ($\alpha = 0.87$) (Rosenberg, 1979). Both instruments were assessed using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). In terms of sociodemographic factors, sex categories were coded 0 = men and 1 = women. Age, measured in years, was included as a covariate given cumulative evidence of its association with burnout (Brewer and Shapard, 2004).

Analytical strategy

Multilevel path analyses were performed using Mplus software package (Muthen and Muthen, 2006). This analytical strategy was retained to account for the hierarchical structure of the data where workers (Level 1) were nested in workplaces (Level 2). Intra-class coefficients for burnout, WFC, and the majority of work and non-work variables confirmed the necessity of adjusting path analyses for workplace variations (data not shown). All study variables were measured at the workers' level. Missing values were low, ranging from 0.2% for burnout and 3.0% for caregiving hours, with non-respondents showing on average no differences in burnout, WFC, or gender. Accordingly, analyses were conducted on respondents with complete cases only ($n = 2026$).

Weighted least-squares parameter estimates method of estimation was retained because of dependent categorical variables included in the models (Muthen and Muthen, 2006). The fit of the model was based on a multi-criteria assessment including a chi-square test, root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMSR). A non-significant chi-square test, $RMSEA < 0.06$, $CFI > 0.95$, and $SRMSR < 0.08$ are indicative of a good model fit (Hu and Bentler, 1999; Tabachnick and Fidell, 2013). We followed Muthen and Muthen's model constraints' approach for multilevel models to test for significance of indirect effects (Muthen and Muthen, 2006). Further, as the bidirectionality of conflicts steaming from work and non-work domains is well acknowledged, we also investigated whether family-work conflict (FWC) could play a similar mediating

role as WFC (Reichl *et al.*, 2014). Because previous multilevel path analyses did not support a significant association between FWC and burnout, we concentrated our efforts on the analytical model displayed in Fig. 1. The analytical model posits differences between men and women as inferred from respondents' self-classification into either sex category (Risman and Davis, 2013). By positing sex categories as an antecedent of work and non-work demands and resources, as well as their subsequent consequences (i.e. WFC, burnout), we therefore sought to capture gendered exposure processes at the basis of differences between men and women in the explanatory dynamics of burnout.

Results

Table 1 presents means, standard deviations, and percentages for study variables for men and women, and the total sample. Differences between men and women from *t*-tests were found for burnout, WFC, work (7 out of 13 indicators), and non-work factors (2 out of 5 indicators), as well as individual factors (2 out of 4 indicators). Table 2 reports on Pearson's correlations offering preliminary support for associative patterns between study variables.

Table 3 presents the results of the multilevel path analysis model. Fit indices show an acceptable fit to the data. Examination of direct effects indicates that WFC and burnout shared common explanatory factors. As such, work factors relative to psychological demands and job insecurity were associated with higher WFC and burnout levels and conversely for recognition at work. Working hours showed a positive association with WFC but a negative association with burnout. Other common direct effects pertained to psychological traits of locus of control and self-esteem, both associated with lower WFC and burnout levels. Contributive factors specific to WFC encompassed working irregular shifts, experiencing marital strains, and being a woman. Similarly, low skill utilization, low decision authority, low career perspectives, interpersonal conflicts, abusive supervision, less caregiving hours and domestic tasks, and WFC were distinctively associated with elevated burnout levels.

Differences between men and women in burnout levels were found in a preliminary multilevel regression, after single adjustment for age as a covariate ($b = 0.111$, $SE = 0.054$, $P < 0.05$). From the full model in Table 3, the variable sex categories became, however, non-significant. Hence, its relative contribution to the model was fully mediated by all other explanatory factors (i.e. work and non-work, WFC, individual), therefore confirming the presence of gendered pathways to burnout. Precisely,

results from direct effects indicate that women compared to men reported lower levels of skill utilization, of decision authority, and of physical demands and were less prone to work long hours or irregular shifts. Women also tended compared to men to more frequently head single-parent families, experience child-related strains, invest time in domestic tasks, and have lower self-esteem.

Results for indirect effects are shown in Table 4. Women reported higher levels of burnout than men because of their exposure to lower levels of decision latitude (i.e. skill utilization, decision authority) at work as well as to higher WFC levels. Differences between men and women in burnout also indirectly resulted from the ways with which work contract (i.e. working hours, irregular shifts) and WFC associated. In fact, men tended to work longer hours than women, which distinctively prevented them from reporting high levels of burnout. However, as men worked longer hours, they were also more likely to experience higher WFC levels and incidentally higher levels of burnout than women. A similar associative pattern was observed for irregular shifts: as men tended to work more frequently in irregular shifts, they were also more likely to experience higher WFC levels and incidentally higher levels of burnout than women. As for non-work factors, women reported lower levels of burnout than men indirectly due to their greater involvement in domestic tasks. Lastly, women expressed lower levels of self-esteem than men, which in turn contributed to their higher levels of burnout.

Discussion

In line with studies adopting a gender-based approach to occupational mental health, the aim of the study was to examine the specific nature of gendered pathways to burnout. We put to contribution theoretical and empirical work on gender and work to conceive features of the life environments (i.e. work and non-work factors, WFC) and of individuals' personality (i.e. self-esteem, locus of control) as being gendered (Campos-Serna *et al.*, 2013; Marchand *et al.*, 2016). Following from this, we hypothesized that differences among men and women in burnout levels resulted from (i) a differential exposure to resources and demands from the work and non-work environments and (ii) a differential access to personal resources from the personality that are mobilized in dealing with demands from the work and non-work environments. Results from multilevel path analysis supported both hypotheses as gendered pathways were evidenced for some of the environmental and individual pathways to burnout tested in this study.

With regard to gendered environmental pathways, women expressed higher levels of burnout because of

Table 1. Sample descriptive statistics.

	Men, <i>n</i> = 1038		Women, <i>n</i> = 988		Total, <i>n</i> = 2026		
	Mean (%)	SD	Mean (%)	SD	Mean (%)	SD	Minimum–Maximum
Mental health							
Burnout	1.37	0.96	1.49	0.99	1.43***	0.98	0–6
Work domain							
Skill utilization	18.06	3.49	17.39	3.22	17.73***	3.37	6–24
Decision authority	8.83	2.00	8.41	1.98	8.63***	2.00	3–12
Psychological demands	23.24	3.85	23.67	3.89	23.45*	3.87	10–36
Physical demands	2.27	0.98	1.69	0.85	1.99***	0.96	1–4
Support from colleagues	12.50	1.92	12.56	1.96	12.53	1.94	4–16
Support from supervisor	11.87	2.55	12.00	2.65	11.93	2.60	4–16
Recognition	15.58	2.62	15.78	2.63	15.68	2.63	5–20
Career perspectives	10.38	2.39	10.32	2.37	10.35	2.38	4–16
Job insecurity	3.77	1.29	3.78	1.31	3.78	1.30	2–8
Conflict at work	7.36	2.23	7.40	2.25	7.38	2.24	4–20
Abusive supervision	18.87	6.69	18.26	6.01	18.58*	6.37	15–69
Working hours (week)	41.40	5.33	38.72	5.62	40.10***	5.64	14–67
Work schedule (irregular)	1.57	0.82	1.45	0.74	1.51***	0.79	1–4
Family domain							
Single-parent family	4.0		13.0		8.5		0–1
Marital strains	0.45	0.91	0.44	0.91	0.44	0.91	0–4
Parental strains	0.18	0.54	0.24	0.60	0.21*	0.57	0–3
Domestic tasks (hours/week)	4.22	4.70	5.00	4.53	4.60***	4.64	0–26
Caregiving (hours/week)	0.86	2.69	0.87	2.84	0.87	2.76	0–19
WFC							
Work–family conflict	9.65	3.45	10.19	3.52	9.91***	3.49	4–20
Individual							
Sex (women)					48.8		0–1
Locus of control	19.67	4.76	19.39	4.42	19.54	4.59	0–28
Self-esteem	19.59	3.43	19.21	3.45	19.40*	3.44	2–24
Age	39.79	10.94	41.49	10.78	40.62***	10.89	17–70

**P* values for differences between men and women.

**P* < 0.05.

***P* < 0.01.

****P* < 0.001.

their lower levels of decision latitude (i.e. skill utilization, decision authority). Although evidence of a gendered effect of decision latitude on burnout is limited and equivocal (Seidler *et al.*, 2014), our results nevertheless support the view that larger, societal differentiation processes associated with women's limited access to greater control opportunities in the work and non-work domains may be at play (Whitehead *et al.*, 2016). To illustrate, representative data from the Québec workforce collected at the same period of the SALVEO study indicate that on average, women relative to men reported lower levels of decision latitude (Vézina *et al.*, 2011) and were overqualified in greater proportions

(Gagnon, 2008). Overqualification is a key differentiation process particularly unfavorable to women (Luksyte and Spitzmueller, 2011). In the work domain, overqualification may express a glass ceiling effect where women are less likely to be promoted to higher-level positions characterized by greater levels of decision latitude. In the non-work domain, overqualification may reflect the fewer alternatives women have in accessing positions that can satisfyingly balance demands from the work and non-work domains.

Relatedly, women were specifically disadvantaged relative to men in reported burnout levels as they experienced more WFC. In accordance with gender role theory,

Table 2. Correlation matrix.

	1	2	3	4	5	6	7	8	9	10	11
1. Sex (women)	1										
2. Burnout	0.061	1									
3. Skill utilization	-0.099	-0.408	1								
4. Decision authority	-0.105	-0.383	0.628	1							
5. Psychological demands	0.055	0.266	0.192	0.055	1						
6. Physical demands	-0.303	0.079	-0.095	-0.109	-0.024	1					
7. Support from colleagues	0.016	-0.338	0.265	0.229	-0.128	-0.110	1				
8. Support from supervisor	0.024	-0.415	0.318	0.352	-0.174	-0.152	0.373	1			
9. Recognition	0.038	-0.520	0.325	0.350	-0.235	-0.154	0.502	0.623	1		
10. Career perspectives	-0.014	-0.432	0.440	0.382	-0.098	-0.117	0.304	0.397	0.512	1	
11. Job insecurity	0.003	0.436	-0.173	-0.210	0.211	0.093	-0.269	-0.341	-0.463	-0.318	1
12. Conflict at work	0.009	0.354	-0.113	-0.125	0.300	0.141	-0.266	-0.281	-0.401	-0.217	0.255
13. Abusive supervision	-0.048	0.403	-0.165	-0.246	0.225	0.163	-0.213	-0.518	-0.496	-0.303	0.284
14. Working hours (week)	-0.238	0.002	0.174	0.123	0.238	0.091	-0.012	-0.003	-0.012	0.077	0.011
15. Irregular work schedule	-0.079	0.092	0.133	0.079	0.223	0.114	-0.048	-0.041	-0.077	0.008	0.094
16. Single-parent family	0.149	-0.018	0.002	-0.013	0.012	-0.03	0.008	-0.007	-0.011	-0.008	0.005
17. Marital strains	-0.004	0.142	-0.035	-0.012	0.077	-0.024	-0.084	-0.047	-0.092	-0.090	0.092
18. Parental strains	0.052	0.064	0.000	-0.004	0.080	0.011	-0.028	-0.03	-0.064	-0.066	0.094
19. Domestic tasks (week)	0.084	-0.022	-0.008	-0.027	0.061	0.034	-0.059	-0.023	-0.037	-0.01	0.073
20. Caregiving (hours)	0.001	-0.025	-0.015	-0.004	0.03	0.047	-0.047	-0.011	-0.006	-0.018	0.042
21. WFC	0.078	0.463	-0.006	-0.062	0.450	0.035	-0.198	-0.202	-0.302	-0.164	0.328
22. Locus of control	-0.031	-0.470	0.324	0.311	-0.107	-0.112	0.292	0.267	0.394	0.280	-0.295
23. Self-esteem	-0.054	-0.390	0.298	0.260	-0.026	-0.037	0.245	0.167	0.274	0.214	-0.195
24. Age	0.078	-0.117	0.156	0.100	0.04	-0.083	-0.044	-0.052	-0.008	0.080	0.019

	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Sex (women)													
2. Burnout													
3. Skill utilization													
4. Decision authority													
5. Psychological demands													
6. Physical demands													
7. Support from colleagues													
8. Support from supervisor													
9. Recognition													
10. Career perspectives													
11. Job insecurity													
12. Conflict at work	1												
13. Abusive supervision	0.443	1											
14. Working hours (week)	0.121	0.056	1										
15. Irregular work schedule	0.142	0.056	0.205	1									
16. Single-parent family	0.022	0.018	-0.01	-0.012	1								
17. Marital strains	0.072	0.069	-0.005	0.074	-0.149	1							
18. Parental strains	0.058	0.021	0.017	-0.004	0.167	0.155	1						
19. Domestic tasks (week)	0.016	0.02	-0.005	0.012	-0.006	0.067	0.143	1					
20. Caregiving (hours)	-0.002	0.051	0.019	0.003	0.036	-0.014	-0.006	0.166	1				
21. WFC	0.247	0.207	0.213	0.237	0.01	0.156	0.129	0.086	0.031	1			
22. Locus of control	-0.234	-0.247	0.029	-0.013	-0.018	-0.204	-0.144	-0.061	-0.070	-0.360	1		
23. Self-esteem	-0.114	-0.087	0.003	0.008	-0.038	-0.136	-0.123	-0.019	-0.022	-0.230	0.547	1	
24. Age	-0.100	-0.015	0.031	0.017	0.043	-0.021	0.094	0.168	0.155	0.016	0.022	0.054	1

$n = 2026$. All correlations above 0.045 are significant at $*P < 0.05$.

Table 3. Results of the direct effects from multilevel path analysis for burnout.

	Direct effects		
	Sex	WFC	Burnout
Work domain			
Skill utilization	-0.817***	0.028	-0.065***
Decision authority	-0.491***	0.040	-0.021*
Psychological demands	-0.013	0.244***	0.023***
Physical demands	-0.548***	0.042	-0.025
Support from colleagues	0.067	-0.012	-0.018
Support from supervisor	0.032	0.001	-0.009
Recognition	0.240	-0.062*	-0.021*
Career perspectives	-0.121	-0.025	-0.030***
Job insecurity	-0.031	0.353***	0.089***
Conflict at work	0.041	-0.015	0.026***
Abusive supervision	-0.358	0.006	0.020***
Working hours (week)	-2.714***	0.090***	-0.006*
Work schedule (irregular)	-0.286***	0.431***	0.029
Family domain			
Single-parent family	0.557***	-0.064	-0.050
Marital strains	-0.004	0.173*	0.015
Parental strains	0.051*	0.232	-0.032
Domestic tasks (week)	0.651**	0.021	-0.015***
Caregiving (hours)	-0.067	-0.008	-0.013**
WFC			
Work-family conflict	0.723***		0.067***
Individual			
Sex (women)			0.035
Locus of control	-0.301	-0.182***	-0.018***
Self-esteem	-0.405*	-0.045*	-0.036***
Random part			
σ^2 (workplace)		0.728**	0.056**
σ^2 (workers)		7.507***	0.490***
Goodness of fit			
χ^2 (df)			299.188 (106)***
CFI			0.975
RMSEA			0.030
SRMSR			0.037

$n = 2026$. Unstandardized coefficients reported. Analyses were adjusted for age.

* $P < 0.05$.

** $P < 0.01$.

*** $P < 0.001$.

women would be more likely to suffer from the consequences of WFC such as burnout, as WFC is deemed to impede on the recovery process necessary to the performance of non-work roles traditionally assigned to women (Reichl *et al.*, 2014). Of note, men compared with women were more exposed to long working hours and irregular shifts, resulting in higher levels of WFC and burnout subsequently. Under such circumstances, the recovery process for men is also a challenge; long

working hours and irregular shifts clash with time allocated to non-work activities, when not suppressing it completely. The fact that women saw their burnout levels significantly reduced compared with men by increasing time invested in domestic tasks may indicate that more time outside work may be necessary to recover from work demands. Part-time work arrangements may also represent a temporary strategy deployed by women to increase their participation in non-work activities

Table 4. Results of the indirect effects from multilevel path analysis for burnout.

Indirect effects	Burnout
Sex–working hours–WFC	–0.016***
Sex–working hours	0.016*
Sex–work schedule (irregular)–WFC	–0.008***
Sex–skill utilization	0.053***
Sex–decision authority	0.010*
Sex–WFC	0.048***
Sex–domestic tasks	–0.009**
Sex–self-esteem	0.015**

Listwise $n = 2026$. Unstandardized coefficients reported. Analyses were adjusted for age.

* $P < 0.05$.

** $P < 0.01$.

*** $P < 0.001$.

such as childcare and domestic responsibilities (Walsh, 1999). Although such withdrawal strategies may offer short-term advantages with regard to burnout, in the long term, women may be missing out on other sources of beneficial resources to their mental health from work (e.g. career opportunities). More studies adopting a life course perspective are thus warranted to clarify the contributive role of a gendered time allocation (work and non-work) in explaining inequalities in occupational mental health. Overall, our study extends previous work (Blanch and Aluja, 2012) by confirming the relevance of investigating associative patterns between work and non-work demands and resources, WFC, and burnout from a gendered perspective. One gendered individual pathway to burnout associated with lower self-esteem in women was evidenced by our study, replicating preliminary trends for work-specific, performance-based self-esteem (Blom *et al.*, 2014).

Direct pathways between the work and non-work environments and burnout were also found, although they were not gendered. Negative social interactions at work (e.g. interpersonal conflicts, abusive supervision) were associated with increased burnout levels in our sample and conversely for the possibility of experiencing good career perspectives. These results are in line with past studies concluding to the presence of environmental pathways linking these work factors (Norlund *et al.*, 2010; Martinko *et al.*, 2013) to burnout. As with non-work factors, weekly caregiving hours contributed to reducing burnout levels. Although the detrimental effects of cumulating long work and non-work hours on burnout have been documented (Paris and Hoge, 2010; DePasquale *et al.*, 2017), our results alternatively suggest that not all workers add up the hours at the cost

of their own mental health. Being a caregiver is a role one embarks on with outstanding dedication. For workers who also become caregivers for their close ones, pacing the amount of residual resources directed toward the work domain may prove to be a healthy strategy. Lack of cumulative evidence however regarding the role of caregiving in the occupational mental health literature warrants further examination (Beauregard *et al.*, 2011). Of note, work factors related to job insecurity, psychological demands, and lack of recognition emerged as environmental pathways negatively impacting both burnout and WFC, which corroborates findings reported elsewhere (Leiter and Maslach, 2003; Michel *et al.*, 2011; Sperlich *et al.*, 2012; Seidler *et al.*, 2014; Mauno *et al.*, 2017). In terms of individual pathways, results showed that locus of control was a personal resource associated to lower burnout and WFC levels. This is consonant with meta-analyses confirming the protective role played by locus of control on WFC (Michel *et al.*, 2011), while it further helps clarifying more mitigated trends for burnout (Wang *et al.*, 2010).

Research and practical implications from our study are 2-fold. First, our results supporting direct pathways to burnout that are not gendered reinforce the rationale for primary organizational interventions in occupational mental health emphasizing a more balanced exposure to work demands and resources to all (Egan *et al.*, 2007). The absence of gendered pathways thus expresses a shared experience by men and women of the demands/resources equation. Alternatively, the presence of gendered environmental and individual pathways sustaining differences between men and women in burnout levels supposes that men and women have a distinctive experience of the demands and the resources they juggle with on a daily basis. Indirect pathways to burnout evidenced by our study suggest that interventions aiming to alleviate gender inequalities in exposure to work demands and resources may lead to greater health benefits for one group (men or women) in particular. Nevertheless, studies conceptualizing gender as a structuring principle for work redesign intervention remain scarce (Egan *et al.*, 2007), with similar conclusions extending to secondary interventions aiming at strengthening individual resources to better cope with environmental demands. Second, our results show that several common explanatory pathways characterized WFC and burnout, WFC being also a significant risk factor for burnout. As such, future studies on either phenomenon should pay close attention to their interrelations in the workforce (Reichl *et al.*, 2014). In a nutshell, as suggested by LaMontagne *et al.* (2014), more tailored-based and context-specific interventions focusing on a better understanding of

occupational mental health determinants are warranted. Following from this, our study advises that increasing knowledge about gendered environmental/individual pathways to burnout may be a key to that reflection.

This study nevertheless has limitations. First, the cross-sectional design of the SALVEO study precluded us from drawing causal inferences. Longitudinal studies investigating the dynamic nature of the associative patterns supported by our analytical model are thus required. Second, common method variance is a known methodological caveat encountered in studies based solely on self-reported measures from respondents, which may yield overestimated associations between outcomes and explanatory factors. Relying on multilevel path analysis adjusted study results for objective workplace variations in burnout levels, therefore minimizing small common method variance present in our sample (Marchand *et al.*, 2015). Third, while in our analyses we did not seek to describe the nature of contextual variations in burnout through workplace-level indicators (e.g. healthy organizational policies) (Perry-Jenkins and Wadsworth, 2017), it is plausible that inclusion of such indicators may relevantly further improve model fit. Fourth, results from the SALVEO study cannot be generalized to the overall workforce as the sample was derived from client companies of a single insurance company. Nevertheless, the data showed a diversified range of economic sectors, firm sizes, and unionization profiles. Fifth, while we cannot fully rule out the possibility that a selection bias at the company level may be present in the data—companies dealing with workers' mental health issues might have been more inclined to participate—no statistical differences based on incidence insurance claims rate (2009–2012) for mental health problems could distinguish participating versus non-participating companies in the SALVEO sample.

Conclusion

The main contribution of this study highlights the importance of adopting a more balanced view of the role played by gender in shaping occupational mental health, as both gendered and non-gendered environmental and individual pathways to burnout were supported. By examining gendered pathways to burnout, our study provides additional insights about the circumstances by which health differences between working men and women come to unfold (Campos-Serna *et al.*, 2013; Malach-Pines and Ronen, 2016). Accordingly, to avoid known pitfalls of discrimination and stigmatization surrounding mental health issues in the workforce

(Purvanova and Muros, 2010), results from this study invite us to consider more thoroughly the issue of gender inequalities in occupational mental health. From an OHS prevention standpoint, our study thus reinforces the key message that high-quality work conditions are a *sine qua non condition* for a healthy and balanced workforce and that strategic actions in that sense could relevantly begin with an in-depth understanding of the specificity of working men and women's reality in the first place.

Declaration of Publication

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Conflict of Interest

No conflicting interests are declared.

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