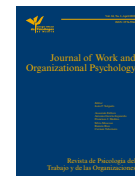




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Gender Differences on Mental Health, Work-Family Conflicts and Alcohol Use in Response to Abusive Supervision

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ABSTRACT

This study aimed to examine gender effects on the relations between abusive supervision and mental health issues, work-family conflicts, as well as the risk of alcohol use. A subset of the SALVEO data ($N = 2,058$) was used in this paper to conduct multilevel regression analysis, controlling for both work and non-work related determinants. Results showed that abusive supervision was positively related to psychological distress and work-family conflicts, but not the risk of alcohol use. There were no gender differences found in our study, except for psychological distress. Comparing to men, abusive supervision had a stronger negative effect on women's psychological distress. Both work and non-work determinants had significant contributions to mental health issues, work-family conflicts, as well as the risk of alcohol abuse. This study illustrated the importance of using multilevel approach to examine the negative impact of abusive supervision.

Diferencias de género en salud mental, conflictos familia-trabajo y consumo de alcohol como respuesta a la supervisión abusiva

RESUMEN

Este estudio tuvo como objetivo examinar los efectos del género en las relaciones entre la supervisión abusiva y las cuestiones de salud mental, los conflictos familia-trabajo, así como el riesgo de consumo de alcohol. Un subconjunto de los datos de SALVEO ($N = 2,058$) se utilizó en este trabajo para realizar un análisis de regresión multinivel, controlando tanto los determinantes relacionados con el trabajo, como los no relacionados con éste. Los resultados mostraron que la supervisión abusiva se relacionó positivamente con la angustia psicológica y los conflictos familia-trabajo, pero no con el riesgo de consumo de alcohol. No se encontraron diferencias de género en nuestro estudio, a excepción de la angustia psicológica. Si se compara con los hombres, la supervisión abusiva tuvo un efecto negativo más fuerte sobre la angustia psicológica de las mujeres. Tanto los factores determinantes del trabajo, como los que no lo son, contribuyeron significativamente a desarrollar problemas de salud mental, conflictos trabajo-familia, así como al riesgo de abuso de alcohol. El estudio ilustra la importancia de utilizar un enfoque multinivel para examinar el impacto negativo de la supervisión abusiva.

Workplace aggression affects a wide range of occupations and has been a national and international concern for over 25 years. In Canada, nearly one-fifth of all incidents of violent victimization occurred in the workplace (de Léséleuc, 2004). It was estimated that about 7 millions (6%) of U.S. employees have been exposed to physical violence in the past 12 months, whereas 47 millions (about 41%) have experienced some forms of psychological aggression (Schat, Frone, & Kelloway, 2006). Workplace aggression is a risk factor for individuals' health and well-being (Barling, Dupré, & Kelloway, 2009; Lanctôt & Guay, 2014). Specifically, abusive supervision as a form of workplace

aggression has been examined in a substantial number of studies in the past two decades (e.g., Hershcovis et al., 2007; Martinko, Harvey, Brees, & Mackey, 2013; Tepper, 2000, 2007). It is defined as "subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact" (Tepper, 2000, p. 178). Specific behaviours include yelling, undermining, publicly ridiculing, and ignoring subordinates (see a review in Tepper, 2007). About 13.6% of U.S. workers are affected by abusive supervision (Schat et al., 2006). According to the recent report from the Library of Parliament Research

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Publications of Canada, abusive supervision has been identified as one of the major contributors to depression, psychological distress, and burnout in Canadian workplaces (Pang, 2013).

Abusive supervision is associated with important organizational outcomes, such as organizational citizenship behaviour and commitment (e.g., Aryee, Chen, Sun, & Debrah, 2007; Harris, Harvey, & Kacmar, 2011), job frustration and performance (e.g., Harris, Kacmar, & Zivnuska, 2007), and work deviance (e.g., Hershcovis & Barling, 2010; Mitchell & Ambrose, 2007). It also has great impact on employees' health, well-being (Marchand, Durand, Haines, & Harvey, 2014; Martinko et al., 2013; Tepper, 2000, 2007), and their family lives (e.g., Carlson, Ferguson, Hunter, & Whitten, 2012; Hoobler & Brass, 2006; Schat et al., 2006). Despite the strong research interests sparked by the topic of abusive supervision, the differential gender effects of abusive supervision have received little attention, with a few exceptions (e.g., Atwater et al., 2015; Ouyang, Lam, & Wang, 2015; Restubog, Scott, & Zagenczyk, 2011). In face of distress, men and women may have different emotional experiences and therefore react differently (e.g., Denton, Prus, & Walters, 2004; Fingerman & Birditt, 2011; Wilhelm, 2014). Previous research have primarily focused on workers' emotional/affective reactions to abusive supervision without taking into account the work context where these emotions are generated and propagated. The goal of this study is to address these issues by investigating gender variations in abusive supervision using both the stress/strain framework for workplace aggression (see Barling, Kelloway, & Frone, 2005) and the multilevel determinants of mental health model (Marchand, Demers, & Durand, 2005b; Marchand et al., 2014) to analyze the differential effects of abusive supervision on women and men.

Theoretical Backgrounds

Barling et al. (2005) used the stress/strain framework to argue that aggression is a stressor in the workplace that relates to higher psychological distress, lower physical well-being, as well as a range of other outcomes, such as job satisfaction, performance, and turnover rates. This framework has been widely used in workplace aggression research in the past decade, but this psychological framework focuses on a single level of analysis – individuals (i.e., workers in our case). Workers are not isolated entities in the society. The social environments around workers contribute to and shape their everyday experiences (Turner, 2005). In other words, a worker's well-being is influenced not only by his/her own personal characteristics, such as age, gender, and personality, but also by the larger social environments (e.g., workplace, family, social network) in which he/she is embedded (Marchand et al., 2005b; Marchand et al., 2014). Similarly, Inness, Barling, and Turner (2005) suggest that it is imperative to examine both situational and individual factors in workplace aggression research in order to avoid the potential risk of exaggerating the predictive power of either situational or individual factors. To better understand the direct link between abusive supervision and workers' mental health and well-being, we must take into account both work and non-work determinants in workers' social environments.

Workers' mental health is closely related to their position and experiences in their respective workplaces. This relation could vary from one workplace to another according to the company's organizational culture, human resources practices, profitability, specific work conditions (e.g., physical and psychological demands), and so forth. Hoobler and Brass (2006) illustrated that aggressive organizational culture played a critical role in the acceptance of workplace aggression. A recent study by Mawritz, Mayer, Hoobler, Wayne, and Marinova (2012) on abusive supervision showed that not only abusive behaviours from higher level managers had trickle down effects on employees two levels lower through abusive behaviours from intermediate level supervisors, but this indirect relation was

further strengthened by hostile work climate. In other words, being in a hostile and aggressive work environment has direct psychological and behavioural impacts on individual workers. Furthermore, this negative consequence of abusive supervision might transcend as displaced aggression in other domains of employees' lives, such as increased undermining towards family members (Hoobler & Brass, 2006) and elevated work-family (family-work) conflicts (Carlson et al., 2012).

As mentioned earlier, individual workers' mental health and well-being are not affected by work-related factors only. Much of research has been dedicated to identifying individual differences that are related to the negative consequences caused by abusive supervision (e.g., Burton & Hoobler, 2011; Hershcovis et al., 2007; Inness et al., 2005; Inness, LeBlanc, & Barling, 2008). Going beyond personality traits, other non-work determinants, such as marital and parental status, social support outside of workplace, age, and gender, also played important roles in workers' mental health (Marchand et al., 2005b; Marchand et al., 2014). In the multilevel determinants of mental health model, Marchand et al. (2014) posit that work related factors (e.g., skill utilization, psychological demand, and support from colleagues) are only one possible mechanism that is related to worker's mental health. Other structures of daily life, such as family and social network outside of workplace, as well as individual characteristics, could also contribute to the development of mental health issues in workers. These different structures of an individual's life are all interlocked together to influence worker's mental health and must be examined simultaneously because the investigation of only work or non-work determinants will produce biased results otherwise.

Gender Variations on Mental Health

In 2002, the World Health Organization (WHO) initiated its first gender policy on health and mental health (World Health Organization, 2002). Since then, there is an increasing need for integrating sex and gender into health related research. In 2009, Health Canada put forth the Health Portfolio Sex and Gender-Based Analysis Policy to encourage differentiating sex and gender-based analysis in the Canadian research community (Health Canada, 2009). Sex denotes biologically determined characteristics, such as hormonal activity or functioning of organs, whereas gender refers to socially and culturally constructed characteristics of men and women (Health Canada, 2009; World Health Organization, 2002). In this study, we will be investigating how workers' social environments (i.e., both workplace and family) could impact their mental health. The conceptualization of gender in terms of social roles and behaviours is more suitable for answering our research questions in this context. Nonetheless, sex and gender are interrelated. Even though we chose to focus on the effects of gender, by no means are we denying the important biologically determined sex differences in health and mental health problems related to experiencing ongoing workplace stress and aggression (Lundberg, 2005; Mattson, 2003). For the sake of simplicity, we will use the gender dichotomy (men vs. women) in this study.

Gender has been identified as the most consistent social determinant for mental health problems, with women being more likely to suffer from internalizing problems, such as anxiety and depression, whereas men are more likely to exhibit externalizing problems, such as substance abuse or dependency (Rosenfield & Mouzon, 2013). In the *Gender Disparities in Mental Health* report from WHO (2006), it was pointed out that depression was reported by women almost twice as much as by men. This is considered to be the most robust finding in psychiatry epidemiology across different sociocultural contexts. Studies conducted using the Canadian National Population Health Survey also showed that women consistently

reported higher levels of psychological distress (Denton et al., 2004) and were 44% more likely than men to experience repeated episodes of psychological distress (Marchand & Blanc, 2011).

Women are more inclined to express their stress in how they feel whereas men tend to reflect it in what they do (Wilhelm, 2014). This might be due to the fact that women experience and display greater emotional range and they are also more reactive towards stress experienced by others (e.g., Denton et al., 2004; Fingerman & Birditt, 2011; Turner, Wheaton, & Lloyd, 1995). Because women have a wider range of social concerns for others, their orientation towards maintaining harmonious social ties might eventually become a source of stress for them (Matud, 2004; Rosenfield & Mouzon, 2013). Therefore, women tend to report higher levels of stress than men throughout life span (Fingerman & Birditt, 2011), and experience more intense distress in a longer period of time when faced with interpersonal problems (Birditt & Fingerman, 2003). Women's higher susceptibility towards interpersonal stressors, as opposed to men, was termed by Kessler, McLeod, and Wethington (1985) as "the costs of caring". According to previous research on gender variations in stress (e.g., Matud, 2004; Rosenfield & Mouzon, 2013; Wilhelm, 2014), it was expected that women would be more negatively affected by abusive supervision, resulting in higher levels of internalizing problems (i.e., psychological distress), and men would be more likely than women to reflect their distress from abusive supervision in alcohol use. Therefore, we expect that:

Hypothesis 1: Abusive supervision will be positively related to psychological distress and risks of alcohol use.

Hypothesis 2: Women will report higher levels of psychological distress than men in response to abusive supervision.

Hypothesis 3: Men will report higher risks of alcohol use than women in response to abusive supervision.

Gender and Work-Family (Family-Work) Conflicts

Work-family (family-work) conflicts have been conceptualized as a form of inter-role conflicts that create stress and strains in both work and family domains among workers (Allen & Finkelstein, 2014; Gutek, Searle, & Klepa, 1991; Pleck, 1977; Rajadhyaksha, Korabik, & Aycan, 2014). Employees' work role can have interferences on the performance of family role (e.g., working over time), which creates work-family conflicts; the family role can also interfere with the work role (e.g., sick kids at home), which then creates family-work conflicts. With women's increasing participation in the workforce, there are emerging needs for men and women to integrate their roles in both work and family spheres, which in turn might lead to an ebb and flow of work-family (family-work) conflicts (e.g., Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Pleck, 1977).

One central theory dominating research on work-family (family-work) conflicts is the gender-role theory. Gender-role theory suggests that family demands are more likely to have a negative impact on women's work role, and work demands are more likely to have a negative impact on men's family role because women and men prioritize responsibilities in work versus family domains differently (Pleck, 1977). Previous research of gender differences on work-family (family-work) conflicts have yielded mixed results (Allen & Finkelstein, 2014; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Rajadhyaksha et al., 2014). Some research found evidence of women reporting higher levels of work interference on family (work-family conflict) than men, and no differences on family interferences on work (family-work conflict; Gutek et al., 1991). Other research found no significant gender differences on work-family (family-work) conflicts.

Abusive supervision, as a serious work stressor (e.g., Pang, 2013), can have spillover effects on employees' family lives. Perceived abusive supervision was found to be positively related to higher levels of undermining towards family members (Hoobler & Brass, 2006). Other

research also suggest that abusive supervision as a stressor from the work domain is permeable to the family domain and could give rise to greater work-family (family-work) conflicts (Carlson et al., 2012). Women usually place their central gender role in the family domain, whereas men usually place their central gender role in the work domain (Amstad et al., 2011; Pleck, 1977). There could be significant gender variations in how women and men experience work-family (family-work) conflicts in response to abusive supervision. Moreover, previous research on work-family (family-work) conflicts rarely take into account both work and non-work determinants simultaneously while examining gender differences on the negative effects of abusive supervision on work-family (family-work) conflicts. Since women tend to be more emotionally involved than men in social and family networks, and carry greater work-family dual demands (e.g., Harryson, Strandh, & Hammarström, 2012; Lachance-Grzela & Bouchard, 2010; Matud, 2004; Turner et al., 1995), we expected that women might be particularly vulnerable in experiencing work-family (family-work) conflicts even after controlling for both work and non-work determinants. In other words, according to the gender-role theory, we expect that:

Hypothesis 4: Abusive supervision will be positively related to work-family (family-work) conflicts.

Hypothesis 5: Women will report greater work to family interferences (work-family conflicts) in response to abusive supervision due to their gender role emphasis on the family domain.

Hypothesis 6: Men will report greater family to work interferences (family-work conflicts) in response to abusive supervision due to their gender role emphasis on the work domain.

Method

Data

The data used in this paper were collected for a larger study in Canada and aimed to evaluate the contribution of work, family, individual characteristics, and social network to workers' experiences of mental health problems. Data were collected in 2009–2012 within 63 Canadian workplaces, randomly selected from a list of client companies of a large insurance company. These companies were invited to participate in this study and those who accepted were referred to the research team, with a response rate at 41.0%. The workplaces were very diverse, with 19 in manufacturing and 44 in the service sector. More information regarding specific data collection procedures and company characteristics were detailed in another report (cf. Marchand et al., 2014). About 0.8% responses were missing in our dataset. Little is missing completely at random test, with age, gender, and company as covariates being non significant, indicating the data were missing completely at random, $\chi^2(52716) = 1,413.68, p = 1.00$. After deleting cases with missing values, the available worker sample size was $N = 2,058$ (men = 1,054). The workforce ranged from 13 to 202 employees per workplace in our final sample for data analysis.

Measures

Abusive supervision. Abusive supervision was measured by the 15-item Tepper Abusive Supervision Questionnaire ($\alpha = .91$ for men and $\alpha = .90$ for women; Tepper, 2000). This questionnaire is a subjective assessment of subordinates' perceptions of sustained hostile verbal or nonverbal supervisory behaviours in the workplace. It has been used in almost all studies involving abusive supervision since its publication in year 2000 and has demonstrated good reliability cross-culturally (e.g., Hu, Wu, & Wang, 2011).

Mental health. Psychological distress, as an indicator of mental health, was measured by the 12-item General Health Questionnaire (GHQ, $\alpha = .85$ for both men and women; McDowell & Newell, 1996).

Work-family (family-work) conflicts. Work-family (family-work) conflicts were measured using Gutek et al.'s (1991) models, with four items measuring work-to-family conflicts (e.g., "After work, I come home too tired to do some of the things I'd like to do"; $\alpha = .79$ for both men and women) and four items measuring family-to-work conflicts (e.g., "My personal life takes up time that I'd like to spend at work"; $\alpha = .74$ for men and $\alpha = .75$ for women). Even though work-to-family conflicts and family-to-work conflicts are often correlated, previous research showed that these two aspects of work-family (family-work) conflicts have distinctive characteristics that should be examined separately (e.g., Amstad et al., 2011; Duxbury & Higgins, 1991; Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011). In this study, we used work-to-family and family-to-work conflicts as separate outcome variables in the following analyses.

Alcohol use. Alcohol intake was the sum of daily alcoholic drinks consumed over the past week and this measure was further dichotomized into 0 = low risk of alcohol use and 1 = high risk of alcohol use (i.e., consumed 11 or more alcoholic drinks for women and 16 or more for men), based on the Canadian low-risk drinking guidelines (Butt, Gliksman, Beirness, Paradis, & Stockwell, 2011).

Work determinants. Skill utilization (six items; $\alpha = .81$ for men and $\alpha = .79$ for women), decision authority (three items; $\alpha = .79$ for both men and women), psychological demands (nine items; $\alpha = .71$ for men and $\alpha = .75$ for women), and workplace social support from colleagues (four items; $\alpha = .81$ for men and $\alpha = .84$ for women) and from supervisors (four items; $\alpha = .87$ for men and $\alpha = .90$ for women) were derived from the Job Content Questionnaire (Karasek et al., 1998).

Since workplace gender composition was found to be related to psychological distress in recent research (e.g., Elwér, Johansson, & Hammarström, 2014), percentage of female workers was entered as a workplace covariate. This information was collected from the human resources department in each company.

Family determinants. Guided by the multilevel determinants of mental health model (Marchand, Demers, & Durand, 2005a;

Marchand et al., 2014), non-work determinants will also be examined in this study to take into account both micro and macro analysis of individuals' lives (Turner, 2005). Marital status was coded 1 for people who were married or cohabiting, and 0 for others. Parental status was coded 1 for having one or more minor children, and 0 for no minor children. Marital strains were assessed by four "true or false" questions regarding stress in the marital relationship ($\alpha = .70$ for both men and women), such as "Your partner doesn't understand you" (Wheaton, 1994). Parental strains contain three "true or false" items also from Wheaton, such as "Child's behaviour is a source of serious concern to you" ($\alpha = .61$ for men and $\alpha = .59$ for women).

Social network support. Social support outside the workplace was assessed using four yes/no (i.e., "yes" coded as 1 and "no" coded as 0) questions from the Statistics Canada National Population Health Survey (Catlin & Wilkins, 1992), asking participants if they had a confident, someone to count on in a crisis situation, when making personal decisions, and someone who makes them feel loved and cared for. This scale was dichotomized as low (0 = 0 to 3) and high (1 = 4) support.

Individual determinants. Gender was coded 0 for male and 1 for female. Perceived general health was measured by asking respondents to indicate "Compared to other persons your age, would you say your health is, overall on a 5-point rating scale (from 1 = excellent to 5 = poor)". Physical health was the number of physical health problems from a list of 29 possibilities (e.g., heart problems, cancer, asthma, etc.). Physical activity was a measure of monthly frequency of one or more physical activities over 15 minutes in duration. Smoking habit was measured based on the number of cigarettes consumed weekly.

Analysis

Multilevel regression modeling was used in this study to account for the hierarchical structure of the data in which workers

Table 1. Descriptive Statistics and Mean Differences

Variables	Men (<i>n</i> = 1,054)		Women (<i>n</i> = 1,004)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Mental health</i>				
1 Psychological distress***	1.93	2.48	2.37	2.72
<i>Work-Family (Family-Work) Conflicts</i>				
2 Work-to-family conflicts	9.64	3.47	10.15	3.52
3 Family-to-work conflicts	8.22	2.86	8.14	2.76
<i>Alcohol use</i>				
4 Alcohol use (%)	14.80	–	8.07	–
<i>Workplace determinants</i>				
5 Skill utilization***	18.07	3.48	17.41	3.23
6 Decision authority***	8.84	1.99	8.42	1.98
7 Psychological demands	23.23	3.85	23.67	3.88
8 Colleague support	12.51	1.92	12.56	1.96
9 Supervisor support	11.87	2.55	12.00	2.66
10 Abusive supervision	18.85	6.67	18.27	6.02
11 Female workers (%)	46.13	–	46.13	–
<i>Family determinants</i>				
12 Marital status (%)	71.73	–	66.33	–
13 Minor children presence (%)	–	–	49.50	48.29
14 Marital strains	0.44	0.90	0.44	0.90
15 Parental strains	0.18	0.53	0.25	0.61
<i>Social network support</i>				
16 External support (%)	80.93	–	87.15	–
<i>Individual determinants</i>				
17 Age	39.87	10.97	41.58	10.80
18 General health**	2.20	0.84	2.29	0.83
19 Physical health***	0.82	1.14	1.29	1.40
20 Physical activity	4.06	2.07	4.26	2.05
21 Smoking	3.54	7.46	2.20	5.31

Note. The *p* values for mean differences have been adjusted for the multilevel design.

** *p* < 0.01, *** *p* < 0.001.

Table 2. Matrix of Correlations among the Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	–	.30	.26	.09	-.25	-.25	.12	-.22	-.20	.23	-.03	-.13	-.01	.28	.14	-.21	-.10	.31	.20	-.17	.15
2	.36	–	.43	.06	.00	-.02	.43	.22	-.17	.20	.00	.00	.07	.19	.13	-.14	.00	.15	.14	-.03	.09
3	.28	.33	–	.09	-.15	-.14	.12	.20	-.11	.20	-.04	-.11	.01	.22	.14	-.11	-.17	.16	.07	-.04	.11
4	.10	-.02	-.05	–	.00	-.04	.03	-.02	-.12	.06	-.04	-.05	-.05	-.01	-.01	-.03	-.04	.04	-.03	.02	.18
5	-.13	.00	-.10	-.01	–	.62	.22	.31	.36	-.17	.01	.18	.13	-.03	.02	.09	.23	-.16	-.09	.11	-.11
6	-.16	-.10	-.11	-.01	.62	–	.12	.25	.39	-.26	.00	.10	.08	-.02	.00	.04	.16	-.15	-.06	.08	-.13
7	.21	.46	.07	-.05	.16	-.02	–	-.10	-.11	.20	.06	.07	.11	.11	.07	-.02	.04	.00	.07	.10	-.03
8	-.15	-.20	-.07	-.02	.23	.22	-.17	–	.38	-.21	.04	.05	.02	-.13	-.06	.13	.00	-.15	-.11	-.01	-.08
9	-.17	-.24	-.04	-.01	.29	.33	-.25	.37	–	-.50	.10	.02	-.01	-.06	.00	.19	-.03	-.06	-.10	.09	-.09
10	.25	.23	.08	.04	-.17	-.25	.26	-.22	.55	–	-.01	-.04	.01	.13	.04	-.11	-.03	.06	.17	-.05	.04
11	-.01	.04	-.07	.00	.05	.02	.06	.03	.00	-.04	–	.02	.00	-.01	.00	-.01	.08	-.01	.05	.09	-.05
12	-.06	.05	-.03	.01	.04	.06	.01	.02	.02	-.09	-.02	–	.41	.31	.17	-.03	.24	-.05	-.03	.03	-.09
13	-.02	.03	.16	-.12	.02	.03	.00	.06	-.01	-.04	.01	.17	–	.24	.35	-.04	.14	-.03	-.03	.04	-.05
14	.16	.12	.16	.02	-.04	-.01	.04	-.03	-.04	.00	-.03	.34	.08	–	.29	-.21	.00	.13	.11	-.06	.07
15	.11	.11	.19	-.05	.00	.00	.08	-.01	-.06	.01	.03	.02	.41	.04	–	-.12	.11	.10	.02	-.02	.02
16	-.13	-.16	-.09	.01	.09	.10	-.07	.13	.14	-.11	.01	.02	-.05	-.12	-.07	–	-.05	-.14	-.06	.07	-.07
17	-.05	.01	-.15	.03	.09	.06	.03	-.10	-.07	.00	.07	-.03	.05	-.04	.07	-.11	–	-.11	.06	-.02	-.05
18	.22	.24	.22	.05	-.16	-.14	-.13	-.16	-.12	.08	-.01	.04	.02	.07	.10	-.06	-.12	–	.28	-.24	.15
19	.17	.18	.08	.04	-.04	-.09	.18	-.15	-.08	.11	.05	.04	-.03	.05	.03	-.08	.11	.30	–	-.08	.04
20	-.12	-.08	-.10	.04	.15	.12	.06	.04	.03	.00	.05	.00	-.11	-.07	-.02	.06	-.05	-.18	-.08	–	-.21
21	.07	.06	.09	.09	-.04	-.10	.04	-.10	-.08	.18	-.13	-.09	-.01	.03	.02	.00	.03	.13	.14	-.16	–

($n_1 = 2,058$) were nested within workplaces ($n_2 = 63$). Abusive supervision was used to predict psychological distress, work-family (family-work) conflicts and alcohol use separately. The first multilevel regression model determined the overall mean of psychological distress, work-family (family-work) conflicts and high risks of alcohol use, as well as the variability of individual and workplace (Model 1). Workers' perception of abusive supervision was entered as a predictor in the second model (Model 2). Then, workplace, family, social network, and individual determinants were entered in the third model as covariates (Model 3). In the analysis, all independent variables were mean centered, except for dichotomous variables. Since the measure for the high risk of alcohol use is a binary variable, multilevel mixed-effect logistic regression was used for analyzing the effect of abusive supervision on the risks of alcohol use. This analysis followed the same steps as the other outcome variables described above. All analyses were conducted for men and women separately using STATA 13.0 unless otherwise specified.

Results

Table 1 presents descriptive statistics between men and women, and their differences on all measures in this study. Table 2 presents the bivariate correlations among all variables for men and women separately. Multicollinearity tests were conducted for men and women separately due to correlated independent variables. Based on the third multilevel regression model proposed above, the variance inflation factor (VIF) ranged between 1.04 and 1.96 with an average of 1.33 for men; and the VIF ranged between 1.04 and 1.85 with an average of 1.30 for women. These values are much lower than the threshold of 10, indicating our data do not have serious multicollinearity problems (Chen, Ender, Mitchell, & Wells, 2003).

Psychological Distress

The results of Model 1 indicated the overall mean of psychological distress and significant variations of psychological distress at the workers and workplaces levels. The intraclass correlation (ICC; ρ) indicated that workplaces accounted for 1.2% of total variance in psychological distress for men and 0.4% for women. Model 2

indicated a statistically significant association between abusive supervision and psychological distress for both men ($B = 0.09$, $p < .001$, $\rho = .016$) and women ($B = 0.11$, $p < .001$, $\rho = .008$).

Finally, Model 3 (see Table 3) showed that abusive supervision was positively related to psychological distress after controlling for work, family, social network, and individual determinants. Furthermore, there were some gender differences among work determinants. Skill utilization and psychological demands were associated with psychological distress for both men and women, but decision authority was a significant predictor for men only. This third model accounted for about 29% of variations between workplaces and 29% between workers for men, and 11% of variations between workplaces and 18% between workers for women. Likelihood-ratio tests indicated that Model 3 had a significant better fit than Model 2 and Model 1 for both men and women across all the outcome variables ($ps < .01$).

In order to determine whether the effect of abusive supervision on psychological distress differed between men and women, the regression coefficients of abusive supervision in Model 3 were compared between men and women using the technique developed by Paternoster, Brame, Mazerolle, and Piquero (1998). The result showed that the effect of abusive supervision was significantly stronger for women, $z = 2.48$, $p = .007$. The same modeling approach was used for the analysis of all outcome variables.

Work-to-Family Conflicts

For the analysis of work-to-family conflicts, Model 1 showed significant variations at both the worker and workplace levels. The workplaces accounted for 6.9% of the total variation in work-to-family conflicts for men and 5.1% for women. Abusive supervision was significantly related to work-to-family conflicts for both men ($B = 0.10$, $p < .001$, $\rho = .071$) and women ($B = 0.13$, $p < .001$, $\rho = .053$) in Model 2.

In Table 4, Model 3 indicated abusive supervision remained significant for women but not for men, after controlling for work, family, social network, and individual determinants. Similar patterns of results between men and women were obtained among work determinants. However, for family determinants, parental strains were significant for men only. For individual determinants, smoking was significantly associated with work-to-family conflicts

Table 3. Results of Multilevel Regression for Psychological Distress between Men and Women

	Men			Women		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	1.92***	1.88***	3.22***	2.37***	2.40***	3.19***
Abusive supervision		.09***	.03**		.11***	.08***
<i>Work determinants</i>						
Skill utilization			-.07*			-.21**
Decision authority			-.13**			-.09
Psychological demands			.07***			.09***
Colleague support			-.06			-.05
Supervisor support			.00			.04
Female workers			.00			.00
<i>Family determinants</i>						
Marital status			-.91***			-.52**
Minor children presence			.00			-.30
Marital strains			.59***			.48***
Parental strains			.29*			.47**
<i>Social network support</i>						
External support			-.58**			-.49*
<i>Individual determinants</i>						
Age			-.01			-.04*
General health			.49***			.37***
Physical health			.16**			.13*
Physical activity			-.09**			-.12**
Smoking			.01			-.01
<i>Random Part</i>						
Workplaces variance	.07*	.09*	.05	.03	.06	.12*
Worker variance	6.08***	5.72***	4.33***	7.37***	6.89***	5.94*
ICC (ρ)	.012	.016	.011	.004	.008	.02
<i>Goodness-of-fit</i>						
χ^2		63.15***	426.41***		66.64***	228.40***
df		1	17		1	17
R ² (Workplaces)		.03	.29		.04	.11
R ² (Workers)		.06	.29		.06	.18
Deviance	4,903.97	4,842.82	4,545.90	4,795.00	4,859.44	4,654.86

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

for men and physical activity was not. On the contrary, physical activity was significantly related to work-to-family conflicts for women, but not smoking. This last model explained 36% of variations between workplaces and 27% between workers for men, and 39% of variations between workplaces and 29% between workers for women. No gender differences were found for the effect of abusive supervision on work-to-family conflicts by comparing the two regression coefficients, $z = .70$, $p = .241$.

Family-to-Work Conflicts

For the analysis of family-to-work conflicts, Model 1 showed that there was no variation between the workplaces for men, but about 1.9% of total variation was accounted for between the workplaces for women. Similar to previous results, abusive supervision was significantly related to family-to-work conflicts for both men ($B = 0.09$, $p < .001$, $\rho = .00$) and women ($B = 0.04$, $p = .02$, $\rho = .019$) in Model 2.

However, abusive supervision remained significant only for men but not for women, after controlling for work, family, social network, and individual determinants as shown in Model 3 (see Table 5). There were gender variations in some of the covariates in the analysis of family-to-work conflicts. For work determinants, both psychological demands and colleague support were predictive of family-to-work conflicts for men, but not for women.

Supervisor support was predictive of family-to-work conflicts only for women, but not for men. For family determinants, presence of minor children was significantly associated with the outcome variable for women but not for men. No other gender differences were observed among the other covariates. This last model explained 18% of variations between workplaces and between workers for men, and 16% of variations between workplaces and 15% between workers for women. Lastly, there were no gender differences for the effect of

abusive supervision on family-to-work conflicts by comparing the two regression coefficients in Model 3, $z = 1.61$, $p = .054$.

Alcohol Use

Multilevel logistic regression analysis was conducted for the risk of alcohol use (see Table 6). The computation of ICC in Model 1 attributed 6.0% of logit variance to workplaces for men and no logit variance to workplaces for women. Model 2 showed that abusive supervision was not associated with the risk of alcohol use for both men ($B = 0.02$, $p = .051$, $\rho = .058$) and women ($B = 0.02$, $p = .19$, $\rho = .00$). This relationship remained the same in Model 3, after controlling for work, family, social network, and individual determinants. There were some gender differences observed among the covariates in Model 3. Supervisor support was a significant predictor for the risk of alcohol use for men only. Psychological demands and presence of minor children were associated with the risk of alcohol use for women but not for men. Both physical activity and smoking were positively related to alcohol use for both men and women. Finally, the statistical test for equality of coefficients showed no gender differences for the effect of abusive supervision on the risk of alcohol use, $z = .84$, $p = .20$.

Discussion

This study examined the negative effects of abusive supervision on worker's mental health, work-family (family-work) conflicts, as well as risk of alcohol use between men and women, controlling for both work and non-work related determinants. Overall, our results suggest that abusive supervision not only affects workers' mental health, but also has spillover effects on the family sphere of the workers. Both work and non-work determinants show significant contributions to

Table 4. Results of Multilevel Regression for Work-to-family Conflicts between Men and Women

	Men			Women		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	9.69***	9.65***	10.27***	10.06***	10.07***	10.51***
Abusive supervision		.10***	.02		.13***	.04*
<i>Work determinants</i>						
Skill utilization			.00			.05
Decision authority			.01			-.05
Psychological demands			.34***			.33***
Colleague support			-.18**			-.11*
Supervisor support			-.05			-.06
Female workers			.00			.00
<i>Family determinants</i>						
Marital status			-.42			.23
Minor children presence			.10			.03
Marital strains			.32**			.25*
Parental strains			.38*			.25
<i>Social network support</i>						
External support			-.55*			-.98**
<i>Individual determinants</i>						
Age			-.01			-.01
General health			.28*			.57***
Physical health			.13			.09
Physical activity			-.04			-.13**
Smoking			.03*			.00
<i>Random Part</i>						
Workplaces variance	.82**	.83**	.34**	.63**	.63**	.19*
Worker variance	11.14***	10.68***	8.45***	11.71***	11.08***	8.60***
ICC (ρ)	.069	.071	.039	.051	.053	.022
<i>Goodness-of-fit</i>						
χ ²		44.35***	357.79***		56.25***	393.97***
df		1	17		1	17
R ² (Workplaces)		.03	.36		.04	.39
R ² (Workers)		.04	.27		.05	.29
Deviance	5,574.45	5,531.02	5,268.70	5,355.48	5,300.75	5,027.09

*p < 0.05, ** p < 0.01, *** p < 0.001.

Table 5. Results of Multilevel Regression for Family-to-work Conflicts between Men and Women

	Men			Women		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	8.22***	8.19***	9.12***	8.15***	8.16***	8.81***
Abusive supervision		.09***	.06***		.04*	.02
<i>Work determinants</i>						
Skill utilization			-.04			-.03
Decision authority			-.04			-.07
Psychological demands			.07**			.02
Colleague support			-.17***			-.06
Supervisor support			.07			.08*
Female workers			.00			.00
<i>Family determinants</i>						
Marital status			-.81***			-.59**
Minor children presence			.00			.64***
Marital strains			.55***			.45***
Parental strains			.53**			.59***
<i>Social network support</i>						
External support			-.28			-.41
<i>Individual determinants</i>						
Age			-.03***			-.04***
General health			.23*			.44***
Physical health			-.02			.07
Physical activity			.01			-.04
Smoking			.02			.02
<i>Random Part</i>						
Workplaces variance	.00	.00	.00	.15*	.14*	.12
Worker variance	8.17***	7.83***	6.74***	7.48***	7.44***	6.36***
ICC (ρ)	.00	.00	.00	.019	.019	.018
<i>Goodness-of-fit</i>						
χ ²		46.21***	223.81***		5.87*	177.81***
df		1	17		1	17
R ² (Workplaces)		.04	.18		.01	.16
R ² (Workers)		.04	.18		.01	.15
Deviance	5,205.16	5,159.94	5,002.21	4,886.40	4,880.55	4,722.71

*p < 0.05, ** p < 0.01, *** p < 0.001.

Table 6. Results of Multilevel Logistic Regression for Alcohol Use between Men and Women

	Men			Women		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-1.86***	-1.88***	-1.63***	-2.43***	-2.43***	-2.23***
Abusive supervision		.02	.00		.02	.02
<i>Work determinants</i>						
Skill utilization			.07			.05
Decision authority			-.02			-.02
Psychological demands			.01			-.08*
Colleague support			.05			.10
Supervisor support			-.17*			-.05
Female workers			.00			.00
<i>Family determinants</i>						
Marital status			-.26			.17
Minor children presence			-.17			-.90**
Marital strains			-.01			.20
Parental strains			.04			.17
<i>Social network support</i>						
External support			.08			.05
<i>Individual determinants</i>						
Age			-.01			.02
General health			.11			.31
Physical health			-.06			.04
Physical activity			.10*			.15*
Smoking			.06***			.05**
<i>Random Part</i>						
Workplaces variance	.21*	.20*	.18	.00	.00	.00
Residual ICC	.06	.058	.053	.00	.00	.00
<i>Goodness-of-fit</i>						
χ^2		3.80	56.39***		1.73	36.57**
df		1	17		1	17
Deviance	877.90	874.36	819.08	563.08	561.54	524.44

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

mental health and work-family (family-work) outcomes. However, contrary to our hypothesis, no gender differences were observed for most of our outcome variables, except for psychological distress.

Psychological distress assessed by the 12-item GHQ is a widely used and well validated measure in both clinical and research settings. It has been used as a screening tool for mental health and mental illness (e.g., Drapeau et al., 2010; Matud, Bethencourt, & Ibanez, 2014; Weich, Sloggett, & Lewis, 2001). Consistent with our Hypothesis 1, abusive supervision, as an interpersonal stressor at the workplace, was positively related to psychological distress for both men and women, with women rating higher on this outcome (Hypothesis 2). Our results in psychological distress support previous research examining gender differences in the emotional reaction to interpersonal problems. Women tend to report more intense emotions than men when encountering problems in their social relationships because they feel more responsible for maintaining social harmony (Birditt & Fingerman, 2003; Turner et al., 1995). Therefore, when women are experiencing abusive supervision, they may have stronger psychological reactions to this social stressor at the workplace, which is reflected in higher ratings of psychological distress than men even after controlling for both work and non-work related determinants.

The spillover effects from workplace to family sphere were also examined in this study. Our findings partially supported previous research that perceived abusive supervision is positively related to work-to-family (family-to-work) conflicts (Hypothesis 4), as indicated in Tables 2 and 3. Nonetheless, when both work and non-work related determinants were entered as covariates in the analysis, a trending gender difference emerged. Perceived abusive supervision was positively associated with work-to-family conflicts for women only and family-to-work conflicts for men only, after accounting for work and non-work related determinants (Hypotheses 5 and 6). According to previous conceptualization on the relationship between abusive supervision and work-family (family-work) conflicts (e.g., Carlson et al., 2012), employees who experience abusive supervision might spend more time and energy in the work domain in order to

avoid potential repercussion (e.g., lose a job). This relocation of time and energy, consequently, creates inter-role conflicts for employees in their family domain.

Inter-roles conflict could be more salient for women than for men, because, traditionally, family roles are more central to the identity of women whereas work roles are more central to men (e.g., Cinamon & Rich, 2002). With women's increased participation in the work domain and their continuation of assuming most of the family responsibilities (e.g., Harryson et al., 2012; Lachance-Grzela & Bouchard, 2010), it is not surprising that women would experience more work-family (family-work) conflicts. Furthermore, family roles are very important to women. Women might not perceive family-to-work interferences as conflicts but would regard work-to-family interferences as noticeable conflicts because it might threaten the core of their identity to be a nurturing and caring person congruent with their gender role expectations. For men, on the other hand, since work roles are central to their identity, they might consider work-to-family interferences as a norm and family-to-work spillovers as intolerable. Therefore, perceived family-to-work conflicts may be more salient for men than for women (Cinamon & Rich, 2002).

Previous findings on gender differences of work-family (family-work) conflicts have been mixed (e.g., Cinamon & Rich, 2002; Duxbury & Higgins, 1991; Michel et al., 2011). Our results in the current study were also inconclusive, such that even though there appeared to be gender differences in work-family (family-work) conflicts in the multilevel regression analysis, the equality of coefficient tests showed that the differences were not significant. Future investigation is needed not only for between gender differences but also within gender differences in the relation between abusive supervision and work-family (family-work) conflicts. Our analysis for the risk of alcohol use showed that abusive supervision was not directly related to high risk of alcohol use. Contrary to our hypothesis, men did not reflect their distress at work in alcohol use. This nonsignificant relationship between abusive supervision and alcohol use was the same for men and women. Previous research on gender differences of mental health indicated that alcohol use in the face of distress for

men may have high comorbidity with other mental health issues, such as depressive and anxiety symptoms (Denton et al., 2004; Rosenfield & Mouzon, 2013). However, this was not directly examined in the current study. Future studies focusing on the risk of alcohol use need to take into account this possible comorbidity while examining gender differences or similarities in the relationship between abusive supervision and alcohol use.

Supporting the multilevel determinants of the mental health model, both work and non-work related determinants were associated with workers' mental health (Marchand et al., 2005b; Marchand et al., 2014), as well as work-family (family-work) conflicts. Among the individual determinants, there are some gender differences observed across our findings that are worth mentioning. Physical activity was found to be negatively related to the outcome variables for women while smoking was positively related to the outcome variables for men. Physical activity appears to be a protective factor or a coping strategy for women, while smoking appears to be a dysfunctional coping strategy for men when facing stressful situations. Future studies will prove fruitful by looking into the gender effects of these two individual determinants in more detail.

Limitations, Future Directions and Implications

The present study has some limitations that should be taken into consideration while interpreting the results. The analysis in this study can not imply causality due to its cross-sectional design. Some reverse causations might be possible. For instance, Boles, Wood, and Johnson (2003) showed that employees would rate their supervisors less favorably if they were experiencing high levels of work-family (family-work) conflicts. Due to the fact that abusive supervision was measured based on workers' own perception of their supervisors' behaviours, it was possible that workers who were having more work-family (family-work) conflicts might in fact perceive more abusive supervision. There is no study to our knowledge that has used objective observational measures of supervisory behaviours to assess abusive supervision. Martinko et al. (2013) have criticized this measurement issue in their recent review on abusive supervision. We agree with Martinko et al. that research on abusive supervision has reached a saturated point that significant improvement in the measurement of abusive supervision is warranted. On a similar note, the measure for parental strains have a relatively low Cronbach's alpha ($\alpha = .61$ for men and $\alpha = .59$ for women). Results regarding parental strains should be interpreted with caution. Furthermore, common method variance bias might be present because all measurements in this study were based on one source. In another study using a similar dataset, factor analysis was conducted and found that common method variance bias was very small (cf. Marchand et al., 2014). Accordingly, the concerns for common method variance bias in this study would also be small.

This study did not take into account physical environments (e.g., dust, noise, etc.), job security, human resources practices on workplace aggression, or other elements in the workplace that might have promoted mental health and helped to balance work and family lives of their employees. Data collected in this study were primarily from White/Caucasian participants. Although the 63 firms have diverse organizational characteristics (e.g., sizes, economic sectors, unionization, etc.), the findings in the current study may not be generalizable to the overall workforce or other cultural contexts. Future studies should consider expanding this line of research to other cultural contexts in order to test the universality of the negative impact of abusive supervision.

Despite the limitations, the present study has great implications for management and human resources practices. Our study shows that abusive supervision has detrimental effects on workers' mental health and work-family (family-work) conflicts for both

men and women. On the one hand, interventions for preventing abusive supervisory behaviours and promoting mental health can be conducted in a gender-neutral manner since the negative effects of abusive supervision are similar between men and women. On the other hand, since men are more reluctant to actively seek help, especially regarding mental health issues (e.g., Ang, Lim, Tan, & Yau, 2004; Berger, Levant, McMillan, Kelleher, & Sellers, 2005) and our study clearly showed that abusive supervision has a negative impact on both men and women, organizations should provide a judgement-free environment to promote men's mental health at the workplace. In sum, the examination of gender effects in the present study provides empirical evidence that women and men suffer the adverse effects of abusive supervision in a very similar fashion. Abusive supervision, a form of workplace aggression, is pernicious to employees' mental health and well-being both at the workplace and in the family sphere. Thus, uniform intervention could be employed for both men and women to reduce symptoms.

Conflict of Interest

The authors of this article declare no conflict of interest.

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