

Do age and gender contribute to workers' burnout symptoms?

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Background	Despite mounting evidence on the association between work stress and burnout, there is limited knowledge about the extent to which workers' age and gender are associated with burnout.
Aims	To evaluate the relationship between age, gender and their interaction with burnout in a sample of Canadian workers.
Methods	Data were collected in 2009–12 from a sample of 2073 Canadian workers from 63 workplaces in the province of Quebec. Data were analysed with multilevel regression models to test for linear and non-linear relationships between age and burnout. Analyses adjusted for marital status, parental status, educational level and number of working hours were conducted on the total sample and stratified by gender.
Results	Data were collected from a sample of 2073 Canadian workers (response rate 73%). Age followed a non-linear relationship with emotional exhaustion and total burnout, while it was linearly related to cynicism and reduced professional efficacy. Burnout level reduced with increasing age in men, but the association was bimodal in women, with women aged between 20–35 and over 55 years showing the highest burnout level.
Conclusions	These results suggest that burnout symptoms varied greatly according to different life stages of working men and women. Younger men, and women aged between 20–35 and 55 years and over are particularly susceptible and should be targeted for programmes to reduce risk of burnout.
Key words	Age; bimodal; burnout; gender; non-linear; occupation.

Introduction

Workers' mental health problems related to psychological distress, depression and burnout are a serious organizational concern. In Canada, for example, 80% of employers rated mental health problems as one of the top three drivers of both short-term and long-term disability claims [1]. Burnout-related absenteeism tends to last for relatively long periods [2] compared with other mental and physical health conditions [3], and recent studies found that burnout might be clinically similar to depression [4,5].

Burnout is mostly viewed as a multidimensional phenomenon encompassing emotional exhaustion, cynicism (depersonalization) and reduced professional efficacy [6]. Over the years, studies have consistently found an

association between burnout and work stressors such as low job control [7], high psychological demands [6,7], low social support [6,8] and low rewards [9,10].

Despite mounting evidence on the association between work stress and burnout, there is limited knowledge about the extent to which workers' personal characteristics such as age and gender are associated with burnout. Current evidence suggests that age is negatively associated with burnout [11,12]. However, some studies have also suggested a bimodal relationship [13,14], with burnout measures elevated in both younger and older workers. By contrast, others have found higher levels of burnout only in older workers [15,16]. Overall, previous studies found mixed evidence on the association with age, and whether non-linear relationships between age and burnout differed significantly from linear associations. When

associations are examined by gender, women appear to report higher levels of burnout than men [9], but the difference appears greater for emotional exhaustion than for depersonalization [17]. Previous studies also did not evaluate gender differences in the relationship between age and burnout. As men and women may experience differential work and life stressors [18], the way gender shapes the relationship between age and burnout may be important.

This study aims to evaluate the contribution of age, gender and their interaction on burnout and its components in a Canadian company-based sample. Conceptually, we view age as a marker of individual experience in work and life domains that shape environmental constraints and resources available to workers at different life stages [19]. Environmental constraints and resources may influence individuals' adaptation to stressors, with age representing a biological marker of the body's declining resistance and adaptation to stressors in older age. In early stages of their careers, younger workers develop an initial mastery of their work requirements and demands and as a result, may be at greater risks of experiencing depleted resources and exhaustion [8]. Also, younger workers may have to juggle work–family conflicts, which are a known risk factor for burnout [13]. With successful work mastery, burnout may start declining with age as a consequence of workers' greater adaptation to work requirements and demands. Furthermore, work–family conflicts may also decline [20], thus lessening their influence on burnout. For older workers, however, adaptation to stressors tends to decline, increasing the risk of burnout. Also, new forms of work–family conflicts may appear, such as caring for elderly relatives, which have been associated with burnout [21]. It may therefore be hypothesized that age follows a non-linear relationship with burnout.

Gender may be expected to moderate the relationship between age and burnout. Men and women are differentially exposed to work and non-work stressors [18], with men, on average, being more often exposed to better work conditions and lower work–family conflicts [22]. Working men and women also tend to react differently to work and non-work stressors [23] as well as to work–family conflicts [24]. The relationship between age and burnout may differ depending on differential exposure to constraints and resources.

Methods

Data were obtained from the Salveo Study [11] collected in 2009–12 from a random sample of 63 Canadian private sector workplaces in the province of Quebec. All workplaces were clients of a large insurance company. Overall, 19 workplaces from the manufacturing sector and 44 from the services sector were enrolled; 35% were

unionized, and the workforce averaged 247 workers per workplace (range: 25–1900 workers).

In each workplace, a random sample of workers was selected, and workers were invited by the researchers to complete a questionnaire on company work time using a touch-screen monitor. Support was provided by on-site trained research assistants. Participating workers signed an informed consent form and the necessary instructions were given. The study protocol was approved by the Ethical Committees of the University of Montreal, McGill University, Laval University, Bishop's University and Concordia University.

Burnout was measured with the Maslach Burnout Inventory-General Survey (MBI-GS). Items assessed how frequently respondents experienced thoughts and feelings related to components of burnout: emotional exhaustion (five items), cynicism (five items) and professional efficacy (six items). The professional efficacy score was inverted to correspond to the direction of the other two measures. Alpha statistics were 0.89 for emotional exhaustion, 0.80 for both cynicism and professional efficacy and 0.89 for a global measure of burnout. Age was measured in years. Covariates included gender (0 = male, 1 = female), marital status (0 = living alone, 1 = living as a couple), parental status (0 = no children, 1 = living with children), education (1 = none to 10 = university doctorate) and number of working hours per week.

Data had a hierarchical structure in which workers were nested in their workplaces. Multilevel regression models were performed using Stata 13 software. Linear and non-linear relationships were tested based on a likelihood ratio test. Age models were estimated with a linear term, as well as with quadratic and cubic polynomial terms. Using estimated multilevel regression coefficients, relationships were further plotted as line plots. Analyses were conducted on the overall sample and were also stratified by gender. Tests for age–gender interactions were also conducted using cross-product interaction terms. All analyses were adjusted for marital status, parental status, educational level and number of working hours.

Results

Overall, 2162 Canadian workers agreed to participate in the survey. The workplace response rate was 41%. This response rate was significantly higher than is usually found in organizational research [25]. The insurance claims rates (2009–12) for mental health problems were not significantly different between participating and non-participating companies [11]. Workers' response rate was 73% (range: 51–100%). After excluding cases with missing values, the sample size in the present study was $n = 2073$ workers (49% female), nested in 63 workplaces.

Table 1 shows the sample descriptive statistics. Overall, women reported significantly higher levels of emotional exhaustion, low professional efficacy and total burnout. Women also worked fewer hours per week and were also less likely to live as a couple than men.

Table 2 shows results of the significance of linear, quadratic and cubic terms for the modelled associations between age and dimensions of burnout.

Based on the overall sample, age followed a non-linear cubic relationship with emotional exhaustion and total burnout, while age was linearly related to cynicism and reduced professional efficacy. For men, age was linearly related to all three components of burnout, as well as with total burnout. For women, age followed a non-linear cubic relationship with emotional

exhaustion, cynicism and total burnout, but was linearly related to reduced professional efficacy. However, gender significantly interacted with all associations between age and burnout components as well as with total burnout. Table 3 shows the multilevel model regression coefficients from the retained significant models outlined in Table 2. These coefficients were used to construct graphs of age–burnout associations (Figures 1 and 2).

Figure 1 plots the relationship between age and burnout for the overall sample. Both emotional exhaustion and cynicism levels are low when workers are 20 years old, and then tended to increase until 30 years old. Between 30 and 55 years old, emotional exhaustion and cynicism levels declined, while after 55 years old, they

Table 1. Descriptive statistics of the overall sample in the Salveo Study

	Men (n = 1065)		Women (n = 1008)		Total (n = 2073)	
	n (%)	Mean (SD)	n (%)	Mean (SD)	n (%)	Mean (SD)
Age		40.0 (11.0)		41.6 (10.7)		40.8 (10.9)
Working hours		41.5 (6.6)		39.3 (11.4)**		40.5 (9.3)
Living in couple	767 (72)		665 (66)**		1430 (69)	
Living with minor children	948 (89)		837 (83)		1783 (86)	
Education		4.2 (2.2)		5.0 (2.3)		4.6 (2.3)
Emotional exhaustion		1.6 (1.3)		1.8 (1.4)**		1.7 (1.4)
Cynicism		1.5 (1.3)		1.4 (1.2)		1.5 (1.3)
Professional efficacy (reverse-coded)		1.1 (1.0)		1.3 (1.0)**		1.2 (1.0)
Total burnout		1.4 (1.0)		1.5 (1.0)*		1.4 (1.0)

SD, standard deviation.

Men–women differences **P* < 0.05, ***P* < 0.01.

Table 2. Test of fit of linear, quadratic and cubic associations between age and burnout (Salveo Study)

	Total (n = 2073)			Men (n = 1065)			Women (n = 1008)			Gender interaction		
	$\Delta\chi^2$	df	<i>P</i> value	$\Delta\chi^2$	df	<i>P</i> value	$\Delta\chi^2$	df	<i>P</i> value	$\Delta\chi^2$	df	<i>P</i> value
Exhaustion												
Linear	50.74	1	<0.001	22.85	1	<0.001	30.26	1	<0.001	2.73	1	NS
Quadratic	0.00	1	NS	0.20	1	NS	0.20	1	NS	1.08	1	NS
Cubic	8.27	1	<0.01	3.01	1	NS	6.29	1	<0.05	9.23	1	<0.01
Cynicism												
Linear	69.92	1	<0.001	25.25	1	<0.001	42.70	1	<0.001	0.37	1	NS
Quadratic	0.18	1	NS	1.08	1	NS	1.26	1	NS	2.88	1	NS
Cubic	1.32	1	NS	0.02	1	NS	6.14	1	<0.05	5.24	1	<0.05
Professional efficacy (reverse-coded)												
Linear	56.25	1	<0.001	28.32	1	<0.001	29.99	1	<0.001	3.94	1	<0.05
Quadratic	0.97	1	NS	0.09	1	NS	2.70	1	NS	2.32	1	NS
Cubic	0.25	1	NS	0.14	1	NS	3.27	1	NS	2.94	1	NS
Total burnout												
Linear	63.19	1	<0.001	32.81	1	<0.001	30.72	1	<0.001	2.96	1	NS
Quadratic	0.06	1	NS	0.01	1	NS	0.80	1	NS	0.54	1	NS
Cubic	4.21	1	<0.05	0.41	1	NS	7.83	1	<0.01	8.12	1	<0.01

Adjusted for marital status, parental status, education level and number of working hours. $\Delta\chi^2$, difference in chi-square; df, degrees of freedom; NS, non-significant.

Table 3. Multilevel model regression coefficients of retained significant models from Table 2

	Total (<i>n</i> = 2073)			Men (<i>n</i> = 1065)			Women (<i>n</i> = 1008)		
	Coefficient	SE	<i>P</i> value	Coefficient	SE	<i>P</i> value	Coefficient	SE	<i>P</i> value
Exhaustion									
Constant	1.69	0.060	<0.001	1.52	0.058	<0.001	1.83	0.080	<0.001
Age	2.72	1.009	<0.01	-0.14	0.038	<0.001	3.98	1.705	<0.05
Age ²	-0.71	0.247	<0.01				-1.00	0.409	<0.05
Age ³	0.06	0.003	<0.01				0.08	0.004	<0.05
χ^2 (df) Age model	59.01 (3)		<0.001	22.85 (1)		<0.001	36.75 (3)		<0.001
Cynicism									
Constant	1.46	0.046	<0.001	1.48	0.057	<0.001	1.53	0.068	<0.001
Age	-0.12	0.026	<0.001	-0.12	0.037	<0.001	3.81	1.470	<0.01
Age ²							-0.91	0.352	<0.01
Age ³							0.07	0.027	<0.05
χ^2 (df) Age model	69.92 (1)		<0.001	25.25 (1)		<0.001	50.10 (3)		<0.001
Professional efficacy (reverse-coded)									
Constant	1.19	0.032	<0.001	1.12	0.043	<0.001	1.44	0.054	<0.001
Age	-0.10	0.021	<0.001	-0.13	0.030	<0.001	-0.10	0.036	<0.01
Age ²									
Age ³									
χ^2 (df) Age model	56.25 (1)		<0.001	28.32 (1)		<0.001	29.99 (1)		<0.001
Total burnout									
Constant	1.44	0.044	<0.001	1.36	0.045	<0.001	1.55	0.056	<0.001
Age	1.38	0.623	<0.05	-0.13	0.028	<0.001	3.46	1.204	<0.01
Age ²	-0.37	0.177	<0.05				-0.83	0.289	<0.01
Age ³	0.03	0.014	<0.05				0.06	0.003	<0.01
χ^2 (df) Age model	67.46 (3)		<0.001	32.81 (1)		<0.001	39.35 (3)		<0.001

Adjusted for marital status, parental status, education level and number of working hours. df, degrees of freedom; SE, standard error.

appear to increase sharply. Age was negatively associated with low professional efficacy and total burnout.

Figure 2 shows the interaction between gender, age, and burnout components and total burnout. For emotional exhaustion, there was a significant non-linear relationship for women, while for men the relationship was mostly linear, as indicated in Table 2. For men, age was associated with lower levels of emotional exhaustion. For women, emotional exhaustion levels were low at the age of 20 years old, then increased until the age of 30. Between ages 30–50, emotional exhaustion levels were lower. However, after age 50, emotional exhaustion levels appeared to increase sharply. The same pattern was seen for cynicism, but younger women had lower levels of cynicism compared with younger men. Cynicism among women increased sharply between ages 20–35. Age was associated with higher levels of professional efficacy in both genders, but the association was statistically stronger for men than women. Finally, the relationship between age and total burnout most closely resembled the one described for the cynicism dimension.

Discussion

We found that age was positively associated with emotional exhaustion and total burnout until the age of 30,

then negatively associated until the age of 55, and finally associated again after the age of 55. Age was negatively and linearly related to cynicism and reduced professional efficacy. These results suggest that burnout symptoms vary according to different life stages of workers. Different experiences in the mastery of work requirements and demands, as well as different experiences of work-family conflicts, may arise at different life stages.

Associations between age and burnout were strongly moderated by gender. The linear relationship reported in previous studies [11,12] was not supported by our study when the moderating effect of gender was considered. For men, total burnout levels as well as emotional exhaustion, cynicism and reduced professional efficacy steadily declined over time. Ageing may not necessarily reduce resistance and adaptation to work stressors in more experienced workers. However, as men age, work conditions may improve, which may also explain lower burnout levels with ageing. In a recent study based on longitudinal data from Statistics Canada, age was associated with higher levels of skill, decision authority and social support at work, as well as with lower psychological-physical demands, job insecurity and irregular work schedules [26].

The situation seems to be quite different for women. Burnout symptoms were at their lowest levels at age 20, but then increased until age 30 to 35. This result suggests

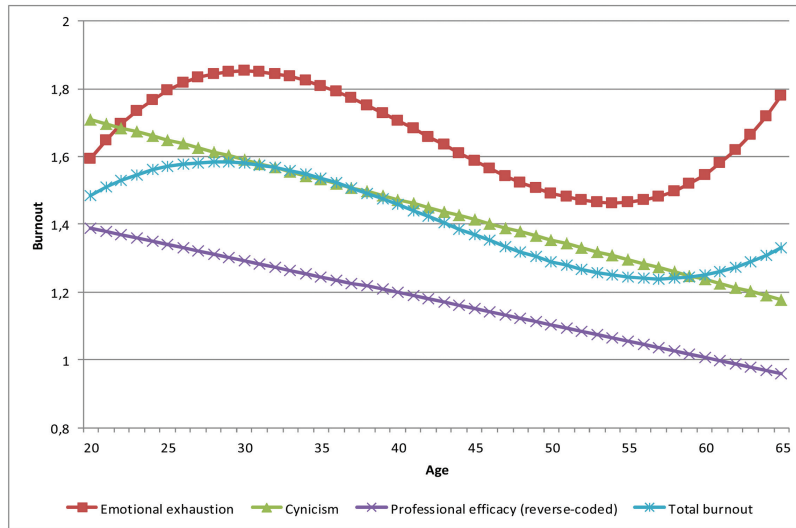


Figure 1. Relationship between age and burnout. Salveo Study, $n = 2073$.

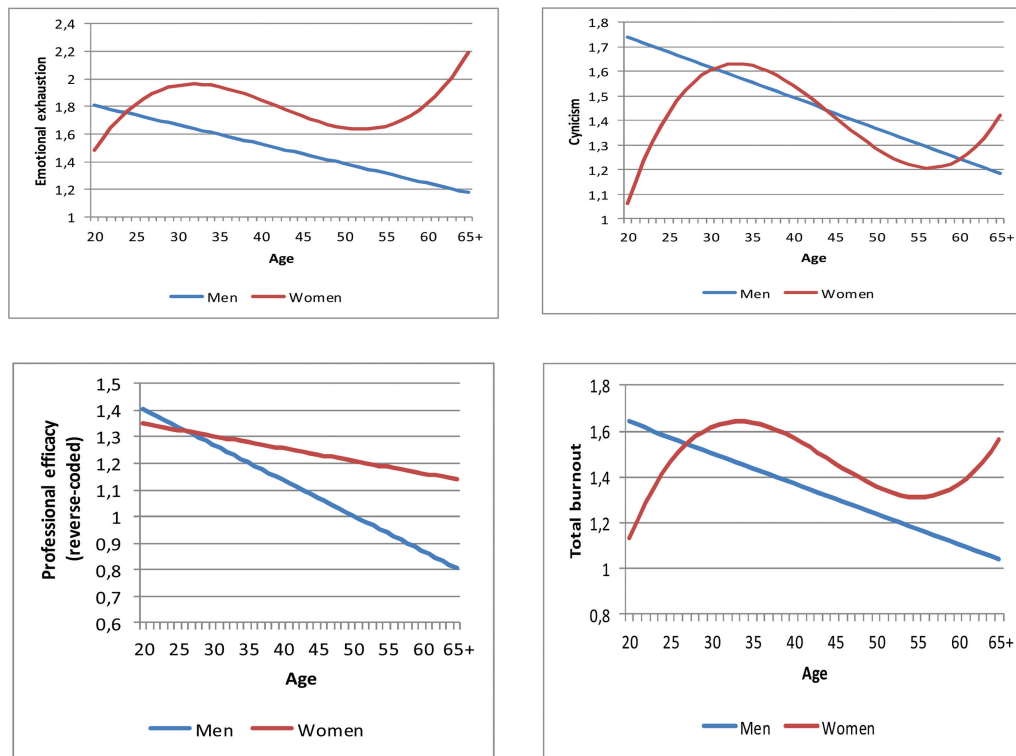


Figure 2. Interaction between gender, age and burnout. Salveo Study, men = 1065, women = 1008.

that women’s process of acquiring work mastery, combined with work–family conflicts, often higher for women than men [22,23], is stressful and leads to burnout symptoms. Women and are more likely to be the principal care provider in the family [23], and the burden of work may be higher for women. Between ages 35 and 55, burnout symptoms were lower, which may indicate a greater adaptation to work stressors conferred by work experience. As with men, work conditions may also improve with age [26]. At the same time, work–family conflicts may be less prevalent

as children age. However, for women over the age of 55, it seems that resistance and adaptation to work stressors decline with ageing, and burnout symptoms appear to increase again sharply. For some women over 55, perimenopausal and menopausal symptoms could be risk factors for depressive symptoms [27], which may be similar to burnout symptoms [4,5]. Also, new forms of work–family conflict may emerge at this life stage. Workers’ elderly relatives may need more support, and more women than men become carers of an elderly relative [28]. Women younger

than their retired spouses may face additional pressure to increase involvement in joint activities. This has been associated with burnout and early retirement in women [29]. Finally, women may not see the same levels of improvement in work conditions as men while still engaged in more responsibilities derived from unpaid work [30].

This study has some limitations. As a cross-sectional study, the observed relationships cannot be interpreted causally. Generational cohort effects may produce differences that appear to arise from age. Secondly, results may not be generalizable, as data came from a single insurance company. However, the 63 workplaces sampled were diverse in terms of economic sector, size and unionization. The workplace response rate of 41% may have introduced selection bias, even if the response rate was significantly higher than other studies [25]. The incidence insurance claims rate (2009–12) for mental health problems was not different between respondent and non-respondent workplaces [11]. Burnout symptoms were self-reported, which could have introduced bias. Finally, not considering specific occupations may have introduced bias, as different age–burnout patterns may vary with specific types of work, industries or economic sectors. Larger sample sizes would be needed to account for specific occupational group age–burnout patterns.

Despite these limitations, this study suggests different patterns of burnout based on age and gender. The non-linear age–burnout relationship for women may be a product of specific stressful work and non-work life stages especially in women aged over 55 years. For these groups, work and general life experiences shape their adaptation to stressors and impact on their health, well-being and work absenteeism. Better training, better support at the start of the working career and implementation of work–family friendly practices may help to develop better adaptation to work stressors. Also, occupational health professionals should be aware of the higher risk of burnout in younger men and women, and in older women [4,5]. These groups could potentially benefit from workplace mental health surveillance programmes to reduce risk of burnout.

Key points

- This study suggests that there are gender differences in the association between age and burnout.
- Age is associated with lower burnout for men, while women report higher burnout level between the ages of 20–35 years, and after 55 years of age.
- Interventions for burnout reduction should target younger men and women, and women over 55 years of age.

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Competing interests

None declared.

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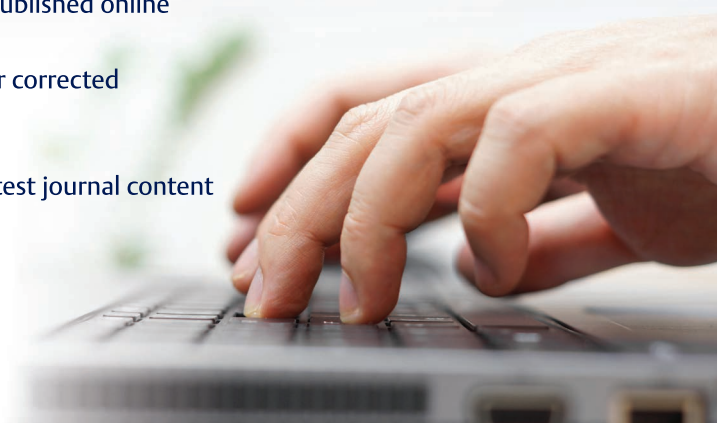
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