Received 5 April 2018
Revised 10 July 2018
1 August 2018
Accepted 23 August 2018

Health of caregiver-employees in Canada

Determining the value of caregiver-friendly workplace policies and social support

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Abstract

Purpose – The purpose of this paper is to investigate the impact of various employment characteristics on the health of Canadian caregiver-employees (CEs), who are working full-time in the labor market while also providing informal/family care to adults.

Design/methodology/approach – Framed with Pearlin *et al.*'s (1990) stress model and using data from Statistic Canada's General Social Survey Cycle 26 (2012), several work-related variables for caregivers were considered, including the availability of various forms of caregiver-friendly workplace policies (CFWPs), and a series of work interferences (WIs) experienced as a result of the caregiving role.

Findings – This study provides evidence for the value of CFWPs in all workplaces. Counter-intuitively, family and other forms of support were found to negatively relate to both physical and mental health.

Originality/value – This suggests that CFWPs will not only have an impact on CEs' physical health outcomes, but will likely decrease the effect of the WIs experienced.

Keywords Qualitative research, Caregiver, Caregiver-friendly workplace policies, Health outcomes, Work interferences

Paper type Research paper

Introduction

Given Canada's aging demographic, and impending care demands of aging baby boomers, there is growing concern about caregivers being able to remain productively employed and financially stable while providing additional support to their elderly dependents (Dembe *et al.*, 2011). Caregiver-employees (CEs) are defined as unpaid caregivers, who are providing care to an elder care recipient (often at home), while also engaging in paid employment. CEs can be caring for a parent, parent-in-law, spouse, life partner, adult child or friend. In 2012, more than 5.6m employees in Canada (approximately 35 percent of the workforce) had adult/elder care responsibilities (Fast *et al.*, 2014). This translates to 2.4bn h of care being provided annually by CEs in Canada; the equivalent of 1.2m full-time employees (Fast *et al.*, 2014). In Canada, it is known that 50 percent of CEs are between the ages of 45 and 65,

This research is supported by the Canadian Institutes of Health Research (CIHR) and specifically, Dr Allison Williams' Chair in Gender, Work and Health, which examines Gender, Health and Carer-Friendly Workplaces.

International Journal of Workplace Health Management
Vol. 11 No. 6, 2018
pp. 382-394
Emerald Publishing Limited
1753-8351
DOI 10.1108/IJWHM-04-2018-0043

representing the most experienced workforce in the labor market (Employers for Carers, 2013; Fast *et al.*, 2014). Additionally, over 50 percent of CEs are caring for their parents or their parents-in-law, and one in four CEs is sandwiched between child rearing and caregiving (Fast *et al.*, 2014). Canada has begun to initiate state-provided options for CEs, such as the 2004 Compassionate Care Benefit and limited tax credits for working carers. Canada's 13 provincial jurisdictions are similarly initiating various work-family supports to enhance work-life balance for working carers.

Framed within Pearlin *et al.*'s (1990) stress process model, which provides a framework for understanding the outcomes of caregiving stress, this paper uses Statistics Canada (2012) data, specifically the General Social Survey (GSS) cycle 26, to consider the availability of various caregiver-friendly workplace policies (CFWPs), various work interferences (WIs), as well as the types of social support associated with CEs' health outcomes – specifically physical and mental health. The GSS is an excellent data set as it not only has a large sample size, but also has captured a wide range of different variables, such as socio-economic status, degree of social support, and work characteristics and experiences. This study has three specific objectives as follows:

(1) to determine how intensity of care, CFWPs and WIs are associated with CE's health outcomes;

(2) to determine whether CFWPs have a greater effect on CEs health outcome if work demands are more onerous (more intensity of care and experiencing more WIs); and

(3) to determine how social support is associated with CE's health outcomes.

These objectives will be realized while controlling for a caregiver's personal characteristics, socio-economic status and geography.

First, the theoretical framework will be set, followed by a review of the literature. The data and analytical methods are then reviewed before the results and discussion are presented. The findings from this paper aim to contribute to the understanding of CEs for three audiences: public health, human resource management, and occupational health and safety.

Theoretical framework and literature review

A wide range of caregiving studies have used Pearlin *et al.*'s (1990) stress process model, including those involving AIDS (Wight *et al.*, 2003), leukemia (Demirtepe-Savgili and Bozo, 2011), dementia (Lee *et al.*, 2006), long-term care (Gaugler *et al.*, 2005) and transnational caregiving (Amin and Ingman, 2014). This suggests that Pearlin *et al.*'s conceptual framework has broad applicability given that it provides an approach to understanding caregivers' stress and related physical and mental health outcomes. Pearlin *et al.*'s model defines four domains: background characteristics (sex, age, etc.); primary stressors (role overload, care recipients care needs) and secondary stressors (role strain as a result of demands outside of caregiving, caregivers' self-esteem and mastery); mediating roles, which includes social support, as well as coping mechanisms; and outcomes address both physical and mental health and include physical illness/injury (physical health), and depression, anxiety, irritability (mental health).

Lack of workplace support via caregiver-friendly workplace policies (i.e. work from home, flextime and job sharing) can result in amplified avoidable costs, such as increases in absenteeism, decreases in employee retention and subsequent increases in employee turnover. Evidence suggests that CEs are much more likely to leave their jobs entirely (Lilly *et al.*, 2010), and that this decision to leave the labor force is most often permanent (Lilly *et al.*, 2007). Leaving the labor force is detrimental to CEs because it puts them at risk, with respect to: lower incomes and smaller pensions; issues with labor force re-entry;

economic losses; and poverty over the long term (Lilly *et al.*, 2011). Other examples of losses that CEs face when trying to balance work-life conflict include: relinquished management positions, refused promotions, and unfair treatment by coworkers and managers (Rosenfeld and Birkelund, 1995). One obvious approach to mitigate this is to implement strategies to better enable CEs with balancing paid work and unpaid caregiving.

Although there has been a growing amount of research on the impact of employment on various caregiver outcomes (Edwards *et al.*, 2002; Rosenthal *et al.*, 2007; Starrels *et al.*, 1997), few substantive conclusions have been reached (Reid *et al.*, 2010). Sims-Gould and Martin-Matthews (2007) found that studies about CEs are mostly found in the disciplines of gerontological and family studies and have concentrated on issues like caregiver burden and caregiver strain, although sociologists have contributed to the historical and societal understanding of this phenomenon (Bruhn and Rebach, 2014). Our knowledge about CEs is limited but growing (Fast and Keating, 2000; Fast *et al.*, 2014).

Caregiver-employees inevitably experience role conflicts given the tension on their time and energy. Pavalko and Artis (1997) found that 43 percent of working women reduced their working time by 13.5 h/week, and some even left their job, after providing care for three years. When a family member needs assistance, females in the family are more likely to provide care without regard to the impact on their employment and are more likely to assume all the caregiving tasks required (Johnson and Lo Sasso, 2006; Kramer and Kipnis, 1995). On the other hand, males are less likely to be involved in the intensive personal caregiving work and are less likely to give up employment to provide care (MetLife Mature Market Institute, 2003). Caregiving also affects CEs' career opportunities, impacting their opportunities for training and job transfer/relocation – all of which limit their chances to acquire new skills and be promoted (Bumagin and Hirn, 2001). Frederick and Fast (1999) discovered that after increasing caregiving duties from 2 to 7.5h per week, the percentage of men who claimed that they had delayed their career plans increased from 5 to 34 percent; however, very few women reported that a delay in their career plans had happened.

Caregiving results in negative financial impacts on caregivers. Missed work time and/or missed promotions negatively impact CEs' incomes, hurting their long-term economic well-being (Albert and Schulz, 2010; Bumagin and Hirn, 2001). Caregiving also affects CEs' social and family life, as more of their paid work is brought home or done outside regular work hours, causing CEs to miss social activities and give up hobbies and vacations (Abel, 1991; Cranswick, 1999; Johnson and Lo Sasso, 2000; Margolies, 2004). CEs often feel stressed and depressed, have limited time alone with other family members and can become isolated (Margolies, 2004). Given the context of the gendered nature of work – both paid employment and family care work, it would be amiss not to examine the intersection between gender, work and health. As the GSS only collects a sex variable (male/female) and not a gender variable (man/woman/other), we only have the opportunity to examine sex.

There has been little consistency in research findings specific to the impacts of employment status on caregiver outcomes (Reid *et al.*, 2010). Some studies show that being employed has positive impacts on caregiver outcomes, while others show negative impacts, and some display no impact at all. Reid *et al.* (2010) pointed out that previous studies focus on employment status (either being employed or not), but neglect to explore the many different employment characteristics and experiences, such as in the scope of caregivers who had been employed and the availability of CFWPs and WIs experienced – all of which likely have impact on caregivers. Thus, Reid *et al.* (2010) created a 13-item Work Interference Scale to determine how WIs may impact caregiver burden, well-being and self-esteem. In their conclusions, they asserted that: employment status is unrelated to outcomes in the total sample (including employed and unemployed caregivers); and WIs are related to

caregiver burden, but not related to well-being and self-esteem in the sub-sample of employed caregivers, suggesting the need for work accommodations for CEs.

Work accommodations, such as CFWPs, are becoming increasingly necessary given that the rise in CEs is becoming a growing phenomenon. CFWPs are understood to be the intentional organizational changes – whether in practices, policies or the workplace culture – which relieves work-family conflict. They are sometimes called family-friendly policies. CFWPs are wide-ranging and include: support services, such as counseling, support groups and skills training; flexible work arrangements, such as working from home and job sharing; strategies which support employees, such as culture change initiatives and educational workshops; paid or unpaid leave, such as sick days and compassionate care leave; and financial and other forms of assistance, such as employee assistance plans and insurance coverage.

Data and method

Data and sample

The study data came from the Canadian GSS cycle 2012 Master File, released in August 2014 (Statistics Canada, 2012). Approval for this study was received from the (redacted for double blind review).

The 2012 GSS is entirely focused exclusively on the various aspects of giving and receiving care. The survey collects information on the types and amount of care that family caregivers provide the kinds and amounts of care Canadians receive, as well as unmet needs. An expanded set of questions covers the impact of caregiving on various aspects of the lives of caregivers, such as employment, general health and well-being. Data were also collected on a wide range of socio-economic characteristics, such as education, employment status, income, marital status and geography. In this study, a sub-sample of the survey was used that was specific to those caregivers providing care for an adult (aged 18 or above) with a long-term health condition or a physical or mental disability during the past 12 months, while also engaging in paid employment. Of the total caregiver sample of 7,082 available in the 2012 Canadian GSS, 3,209 full-time caregiver-employees were identified based on four combined questions: "Have you provided care for a person with a long-term health condition or a physical or mental disability during the past 12 months?" (if yes); "How old is your primary care receiver?" (if above 18 years old); "Are you employed?" (if yes); and "How many hours a week do/did you usually work at your job? (if more than 35 hours)." In addition, 16 unpaid workers were excluded to avoid the ambiguous definition of caregiver-employees. Further, 319 observations were dropped due to the incomplete records in the variables of interest, such as marital status, education and sources of support. Additionally, 740 missing income values were imputed by linear regression, using age, sex, marital status, education, number of working weeks/year and number of working hours/week as predicators. Sensitivity analysis was conducted to provide the evidence that the income imputation would not affect the robustness of the results.

Data analysis

The analysis investigates the association between work-related caregiving characteristics and caregiver's physical and mental health. First, the dependent and independent variables will be described in the study as follows.

Dependent variables. Self-reported measures of physical health and mental health were analyzed. The survey questions analyzed are outlined in Table I.

The GSS collects self-assessed physical and mental health status in five response categories: excellent, very good, good, fair and poor. Physical status and mental health status were dichotomized by lumping "fair" and "poor" as "unfavorable health."

Independent variables. The key independent variables we want to examine include:

- A series of variables indicating whether a CE works in an environment with CFWPs: the GSS addresses numerous self-reported CFWPs, as outlined in Table I. In addition, we also generate a binary variable which indicates working in an environment with at least one of the CFWPs. The Cronbach's α 0.71 for the CFWPs shows the acceptable reliability of CFWP items.
- A series of variables indicating whether a CE experiences WIs; Table II outlined the details of the WIs in the GSS.

Other socio-economic and demographic caregiver variables are also controlled in the models, including:

- Sex: male and female (reference).
- Age: this variable is organized into three groups – younger than 45 years old (reference), 45–55, 55 and above.
- Income: income is measured as the respondent's household income from all sources adjusted for household composition using the square root of the household size.
- The highest level of education attained is categorized into two categories: less than secondary and secondary education, and post-secondary education (reference).
- Marital status includes the four common categories: single (reference), former married (widow, divorced and separated), married and legal partner.
- Geographic indicator: Statistics Canada's dichotomous urban/rural classification was used.

The intensity of caregiving is also controlled in the models:

- Intensity of caregiving: the number of weekly hours of care or help to the primary recipient is categorized into three groups: less than 4 h (reference), 4–10 h and more than 10 h a week.

Finally, it was deemed important to consider the importance of social support to the caregiver's health condition. The sources of social supports for the caregiver include: direct family (spouse/partner, children); extended family, friends, spiritual community or cultural or ethnic group; financial support from government (public program or tax benefit), family

Table I.
GSS questions addressing health outcomes

SHP_Q10	In general, would you say your health is excellent, very good, good, fair or poor?
SHM_Q10	In general, would you say your mental health is excellent, very good, good, fair or poor?

Table II.
GSS questions addressing caregiver-friendly workplace policies (CFWPs)

FWA_Q120	Do/Did you have a flexible schedule that allows/allowed you to choose the time to begin and end your work day?
FWA_Q132	Does/did your employer provide you with the option to work part-time?
FWA_Q133	Does/did your employer provide you with the ability to take leave, paid or unpaid, to take care of your child (ren), spouse, partner and other family member?
FWA_Q137[a]	Does/did your employer provide you with the option to telework?

Note: [a]Excluding due to the low counts

members or friends; as well as respite care. Table III displays the detailed survey questions on the sources of social support for caregivers. Table IV lists the categories specified for each variable.

Logistic regression was conducted to explore the association between work-related caregiving characteristics and caregiver's health status. The mediation of CFWPs on CEs' health outcome was also examined if work or caregiving demands were more onerous by testing the interaction between CFWPs with WIs and intensity of care. In addition, the relationship between social support and the caregiver's health condition was investigated. This was accomplished by modeling health status separately for physical and mental health. Bootstrapping weights and bootstrapped standard errors are used to account for the complex survey design. A p-value of less than 5 percent is regarded as significant.

Results

As noted above, the purpose of this work is to consider the availability of various caregiver-friendly workplace policies (CFWPs), various WIs, as well as the types of social support associated with CEs' health outcomes. Descriptive statistics of the sample will be first described, followed by the logistic regression results.

Descriptive statistics

The summary statistics of each variable for the full sample and by sex are presented in Table V. The sample's socio-demographic characteristics follow the typical CE profile (Giesbrecht *et al.*, 2009; Sinha, 2013), with majority being male (53 percent), above 45 years old (54 percent) and married (74 percent). The mean adjusted household income is found to be $56,000. Approximately 65 percent of the CEs were found to have a secondary or less than secondary education. Nearly 80 percent of CEs reside in urban areas. Approximately 43 percent of CEs spend more than 4 h a week on care or help for the primary care recipients.

ITL_Q10	Did you go to work late, leave early or take time off during the day because of your caregiving responsibilities?
ITL_Q30	Did you reduce your regular weekly hours of work because of your caregiving responsibilities?
ITA_Q10	Did you take one or more days off from your job because of your caregiving responsibilities?
ITE_Q10[a]	During the past 12 months, did you quit a job because of your caregiving responsibilities?
ITJ_Q10[a]	During the past 12 months, were you fired, laid off or asked to resign from a job because of your caregiving responsibilities?
ITO_Q10[a]	During the past 12 months, did you turn down a job offer or promotion, or decide not to apply for a job, because of your caregiving responsibilities?
IPR_Q20[a]	Was the timing of your retirement/Will the timing of your retirement be affected because of your caregiving responsibilities?

Note: [a]Suppressed as the other type of the WIs

Table III. GSS work interference (WI) questions addressing the impact of caregiving on employment

To accommodate your caregiving duties, have your	
scg_q110[a]	Spouse or partner modified their life and work arrangements?
scg_q120[a]	Children provided with help (such as helping with household chores)?
scg_q130	Extended family members provided with help?
scg_q140	Close friends or neighbors provided with help?
scg_q160	Community, spiritual community, or cultural or ethnic groups provided with help?
scg_q170	Local or provincial government provided with help or support?
scg_q181	Take a "Compassionate Care Leave" to help or care for any of the people helped in the past 12 months?
scg_q300	Is there any other type of support that you would like to have to accommodate your caregiving duties?

Note: [a]Combined as the sources of support from the directly family

Table IV. GSS questions addressing sources of support for caregivers

Variables	All CEs ($n = 2,874$) Prop. (%)	SD	Female CEs ($n = 1,554$) Prop. (%)	SD	Male CEs ($n = 1,320$) Prop. (%)	SD	*t*-Test diff.
Age							
< 45	46.00	0.50	49.33	0.50	43.09	0.50	
45–55	35.44	0.48	33.09	0.47	37.49	0.48	
> 55	18.56	0.39	17.58	0.38	19.41	0.40	
Male	53.35	0.50					
Less than or equal to secondary education	65.34	0.48	59.88	0.49	70.13	0.46	Sig.
Marital status							
Married/partner	74.44	0.44	70.98	0.45	77.46	0.42	Sig.
Formerly married	7.03	0.26	9.26	0.29	5.09	0.22	Sig.
Single	18.53	0.39	19.76	0.40	17.45	0.38	
Income (mean $1,000)	56.05	40.94	55.85	37.66	56.21	43.62	
Urban area	81.04	0.39	82.13	0.38	80.09	0.40	
Number of hours of care							
< 4	57.31	0.49	54.49	0.50	59.78	0.49	Sig.
4–10	27.75	0.45	28.64	0.45	26.98	0.44	
> 10	14.93	0.36	16.88	0.37	13.23	0.34	Sig.
Workplace policy(ies) (CFWP)							
FWA_Q120: flexible schedule	34.86	0.48	32.60	0.47	36.83	0.48	Sig.
FWA_Q132: the ability to take leave	88.02	0.32	89.02	0.31	87.15	0.33	
FWA_Q133: reduction to part-time	31.43	0.46	38.91	0.49	24.89	0.43	Sig.
Having at least one type of CFWP	92.63	0.26	92.58	0.26	92.67	0.26	
Work interferences (WI)							
ITL_Q10: work leave	33.24	0.47	34.33	0.47	32.28	0.47	
ITL_Q30: reduce regular work hours	93.55	0.25	93.95	0.24	93.19	0.25	
ITA_Q10: full day off	32.26	0.47	35.22	0.48	29.67	0.46	Sig.
Other types of WIs	10.49	0.31	11.59	0.32	9.53	0.29	Sig.
Sources of support							
Direct family	37.91	0.49	36.50	0.48	39.15	0.49	
Extended family	34.86	0.48	30.98	0.46	38.26	0.49	
Friend	22.71	0.42	23.62	0.42	21.91	0.41	Sig.
Community group	13.28	0.34	12.28	0.33	14.15	0.35	
Respite care	10.80	0.31	10.42	0.31	11.13	0.31	
Financial support	13.48	0.34	12.24	0.33	14.57	0.35	
Other support	21.94	0.41	23.56	0.42	20.52	0.40	Sig.

Note: Sig. indicates the difference between the female and male is significant at 5 percent level

Table V.
Summary statistics of variables in the analysis

There were more female CEs (17 percent) than male CEs (13 percent) who spent more than 10 h a week providing care. The major caregiving supports include those from: direct family (37 percent) and extended family (34 percent). Approximately 13 percent of caregivers have obtained financial support from either: government, care recipients or friends. There is no significant difference in the sources of support between female and male CEs except that "from friends" or "any other types of support."

It is noteworthy that there were significant differences in the work-related variables between female and male CEs. With respect to the CFWPs, around 37 percent of the male CEs were allowed a flexible schedule, compared to only 32 percent of female CEs. Further, female CEs (39 percent) were more likely to be given the option to reduce their work hours to part-time than were male CEs (25 percent). There were more female CEs (35 percent) who experienced taking one or more days off from their job than were male CEs (30 percent). Approximately 92 percent of CEs worked in an environment with at least one type of CFWPs.

Logistic regression on self-assessed physical and mental health

Logistic regression models were applied for physical and mental health, respectively. Emphasis was placed on the association between health outcomes and employment-related caregiving characteristics, e.g. the availability of CWFPs and WIs. The interaction between CWFPs and WIs and intensity of care was also noted. In addition, sources of support for caregiving were considered while controlling for: type of care; CE's age, sex, income, and other socio-demographic and geographic variables. Table VI presents the estimates of the odds ratio for the key variables, based on the logistic regression (columns 1 and 2 for physical health and columns 3 and 4 for mental health). Recognizing that the care recipient's

Variables	Unfavorable physical health Odds ratio	95% CI	Unfavorable mental health Odds ratio	95% CI
Age group (ref. ⩽45)				
45–54	1.416***	[1.190–1.685]	0.897	[0.744–1.081]
55+	1.704***	[1.429–2.033]	1.109	[0.913–1.347]
Male (ref. = female)	0.894	[0.777–1.029]	0.659***	[0.553–0.786]
Less than or equal to secondary education	1.187**	[1.008–1.399]	1.287***	[1.083–1.528]
Marital Status (ref. = single)				
Married	0.677***	[0.547–0.837]	0.807	[0.622–1.045]
Formerly married	0.787*	[0.611–1.014]	1.144	[0.868–1.51]
Equivalent income (log form)	0.998*	[0.997–1.000]	0.998	[0.995–1.000]
Urban (ref. = rural)	1.228*	[0.994–1.516]	1.441***	[1.141–1.820]
Intensity of caregiving (ref. = less than 4 h)				
4–10	1.081	[0.667–1.754]	1.245	[0.945–1.616]
> 10	1.340	[0.731–2.455]	1.395	[0.882–2.208]
Workplace policy(ies) (CFWP)				
FWA_Q120: flexible schedule	0.802**	[0.676–0.953]	0.988	[0.819–1.192]
FWA_Q132: the ability to take leave	0.814	[0.545–1.217]	0.732	[0.490–1.092]
FWA_Q133: reduction to part-time	0.834	[0.781–1.509]	0.936	[0.864–1.541]
Work interferences (WIs)				
ITL_Q10: work leave	0.783	[0.446–1.373]	0.278***	[0.140–0.549]
ITL_Q30: reduce regular work hours	1.439	[0.897–2.309]	2.374***	[1.468–3.839]
ITA_Q10: full day off	1.206	[0.692–2.103]	2.262**	[1.168–4.379]
Other types of WIs	1.604*	[0.991–2.596]	4.100***	[2.660–6.320]
Having at least one type of CFWP × WIs				
CFWP × work leave	1.693*	[0.930–3.080]	1.584	[0.945–1.653]
CFWP × reduce regular work hours	0.570**	[0.367–0.887]	0.512***	[0.323–0.811]
CFWP × full day off	0.678	[0.373–1.233]	0.455**	[0.230–0.901]
CFWP × Other types of WIs	1.203	[0.720–2.009]	0.283***	[0.172–0.464]
CFWP × intensity of care				
CFWP × 4–10 h	0.897	[0.528–1.524]	2.516***	[1.366–4.634]
CFWP × 10 h +	0.890	[0.476–1.662]	0.606**	[0.370–0.992]
Sources of support				
Direct family	1.399***	[1.201–1.631]	1.392***	[1.143–1.695]
Extended family	1.084	[0.921–1.276]	1.311***	[1.101–1.560]
Friend	0.838*	[0.697–1.008]	1.320***	[1.093–1.594]
Community group	0.924	[0.764–1.117]	1.264*	[0.984–1.622]
Respite care	1.148	[0.922–1.429]	1.095	[0.873–1.375]
Financial support	1.591***	[1.313–1.929]	1.187	[0.944–1.492]
Other support	1.735***	[1.464–2.056]	1.767***	[1.493–2.091]
_cons	0.068***	[0.038–0.122]	0.035***	[0.019–0.065]

Notes: *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

Table VI.
Odds ratio and alternative logistic regression models for probability of unfavorable physical and mental health

diagnosis has not been captured in the data set, the intensity of care is not shown to be significantly related to unfavorable physical health or mental health. This is a surprising finding that suggests the complexity of factors at play in impacting CEs' health outcomes.

While controlling for the intensity of care, given other things equal, CEs who work in an environment with a flexible work schedule are less likely to have unfavorable physical health, but there is no significant association with the likelihood of unfavorable mental health. Specifically, having a job with a flexible work schedule decreases the odds of having unfavorable physical health by approximately 20 percent.

As for the experience of WIs, given other things equal (including the same CFWPs), CEs who experienced: reducing the regular weekly hours of work; taking one or more day off; and the other types of WIs (quitting a job, or having been fired, laid off, or asked to resign from a job, or turning down a job offer/promotion, or the time of retiring affected) are found to have a positive association with unfavorable mental health. However, they are not significantly associated with unfavorable physical health.

With respect to the interaction between the availability of CFWPs (any type of CFWPs) and the experience of WIs, it was found that the CEs who worked in a workplace with CFWPS, and whom experienced a reduction of regular weekly hours of work were less likely to have unfavorable physical health (OR = 0.570). CEs who were employed in a workplace with CFWPs and who: experienced a reduction of their regular weekly working hours; took one or more days off; and had other types of WIs were less likely to have unfavorable mental health.

The interaction between CFWPs and the intensity of care is not significantly associated with the physical health. However, it was found that CEs who had not only worked in an environment with the availability of CFWPs, but also provided caregiving more than 10 h a week were less likely to have unfavorable mental health.

With respect to the types of caregiving support, consistent with the findings of Williams *et al.* (2016) and contrary to what would be expected, unfavorable physical or mental health of CEs is significantly associated with the social supports from the direct family, e.g. the spouse/partner modifying his/her life and work arrangements, or help is received from children.

Financial support from local and provincial government is positively related to unfavorable physical health but has no association with mental health. Support from the neighborhood community, spiritual community and cultural/ethnic groups is negatively associated with unfavorable physical health. The likelihood of having unfavorable mental health is significantly positively associated with the social support from the extended family and the friends.

With respect to sex differences, female CEs were found to always be more likely to have unfavorable mental health when compared to male CEs. No significant sex differences were found in physical health.

Discussion and conclusions

The impact of employment on health outcomes for CEs is a very complicated issue, given the wide variety of compositional and contextual factors involved. To attempt to simplify the problem, models have been created, incorporating socio-economic variables, work experiences (WIs and CFWPs) and social support. Although we can highlight how these variables are associated with physical and mental health outcomes, the pathways used in how these factors directly or indirectly impact CEs health cannot be surmised.

This paper investigates the availability of CFWPs (reflecting the accommodations available in the workplace for caregivers), and experiences with WIs (reflecting whether caregiving interrupts CEs paid employment). CFWPs were found to support CEs physical health and it can be inferred that CFWPs thereby enable CEs to sustain their dual roles.

CFWPs were found to be negatively associated with CE's unfavorable physical health. This association makes sense as accommodations in the workplace would help the CEs in managing the two demanding roles of caregiving and employment (Ireson *et al.*, 2015).

WIs due to caregiving were shown to decrease CEs' mental health. Among the WIs outlined, the following were found to have strong negative associations with CEs' mental health: "reduce work hours"; "take days off"; and other types of WIs, including "quitting a job"; and "turn down a job offer/promotion, or decide not to apply for a job." Quitting work or being unable to progress at work as a result of caregiving obligations may make CEs feel very distressed and stagnant, which, in turn, would negatively impact physical and mental health, as suggested by Margolies (2004). Quitting work may have long-term health implications, given that the decision to leave the workforce is often permanent (Lilly *et al.*, 2007). The results reflect the stress that CEs are experiencing in managing two very demanding roles. These findings specific to WIs suggest the need for further adoption of CFWPs, which would alleviate many of the WIs that CEs experience.

The last category of variables addressed social support. Indicators like "direct family (support from direct family)" and "other support needed" were found to negatively relate to both physical and mental health. Although logic suggests that if a CE receives help from other sources then she/he will feel supported and thus mentally and physically healthier, the data suggest otherwise, as confirmed in earlier research (Williams *et al.*, 2016). This may be due to the fact that those who care for people with serious health problems need a lot of support (clearly more than they are receiving), and CEs who are also juggling paid employment may need even more support then they may currently be receiving from others. CEs that get financial support are generally lower income, which is known to be directly related to poor physical and mental health.

Male CEs are more likely to have better mental health when compared to female CEs. As reflected in the larger literature specific to sex differences in caregiving (Kramer and Kipnis, 1995; Johnson and Lo Sasso, 2006; MetLife Mature Market Institute, 2003), this is likely influenced by the fact that male CEs carry out more comparatively lighter managerial caregiving tasks, as opposed to the heavier personnel care tasks that are more likely carried out by female CEs. When compared to female CEs, male CEs are also more likely to prioritize paid employment over caregiving, given that they are less likely to work less than full-time hours, and are less likely to have availability of and access to CFWPs. This finding suggests that female CEs may require more support in managing both paid employment and caregiving and may need to be encouraged to ask for and receive the supports available to them.

Given the limitations of the data and statistical methods used in unpacking the complexity of the pathways involved in determining the associations on CEs physical and mental health, this study provides evidence for the value of CFWPs in all workplaces, and particularly in those which are female-dominated. Not only will this have an impact on physical health outcomes, but will also decrease the effect of the WIs experienced, the latter which is known to have negative associations with mental health. Clearly, CEs require various types of support depending on need, but increased availability and accessibility of respite care would greatly impact CEs' health outcomes. Given the complexity of the pathways involved, as described earlier, these findings would be greatly enhanced in future with the addition of a qualitative approach. Although not currently available, qualitative research would allow an in-depth investigation and provide further comprehension of the significant associations noted.

There are two obvious limitations to the analysis. The first is that the cross-sectional analysis does not allow for the examination of how the relationship between employment status and health status may change over time. Further, the former employment history of the CEs concerned may play a critical role in this pathway as well. The assessment at a

single time point may miss the large deviations that occur during a person's lifetime (Newman and Cauley, 2012). Further, the cross-sectional data do not allow for the confirmation of the presumed effects on health status. The second limitation is that the disease diagnosis of the care recipient is not collected in the GSS, disallowing the control of the variance resulting from the disease diagnosis of the care recipients' in the models. Given that the disease diagnosis provides a key indicator of care need, the availability of this information would provide an additional variable to include in the models. Recognizing these limitations, the results of this research are useful for informing the provision of caregiver-employee supports generally, specific to the workplace, and to health and social care supports more broadly. Given the impending demands of Canada's aging baby boomers, these results suggest that CFWP be incorporated into the labor market, with a specific focus on female-dominated sectors. The findings from this paper inform our understanding of CEs, and have clear implications for public health, human resource management, and occupational health and safety.

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