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Male/Female Differences in the Impact of Caring for Elderly Relatives on Labor Market Attachment and Hours of Work: 1997–2015

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Abstract

Objectives: Using representative samples of the Canadian labor market (N = 5,871,850), this study examined male/female differences in the impact of informal care on labor market attachment, and the extent to which differences in labor market participation and employment relationships explained these differences over a 19-year period.

Methods: We examined four outcomes related to labor market impacts associated with caring for elderly relatives: leaving the labor market, working part-time, taking time off work in the previous week, and the amount of time taken off from work. Regression models examined differences between men and women, and the extent to which gendered labor market roles accounted for these differences.

Results: We observed an increase in all labor market outcomes over the study period. Women were more likely than men to experience each outcome. Adjusting for labor market role variables did not change these estimates appreciably. After adjustment for differences in labor market roles women were 73% more likely to leave the labor market, more than 5 times more likely to work part-time, and twice as likely to take time off in the last week due to informal care. Further, for temporary absences to provide care, women took an average of 160 min more per week than men.

Discussion: Taken together, these results suggest an increasing impact of informal care on labor market participation in Canada between 1997 and 2005, and it remains gendered.

Keywords: Caregiving, Employment, Gender, Informal care

Canada, like most developed countries, has seen a steady increase in life expectancy and declines in fertility rates over the last 50 years; each of which has contributed to an increase in the average age of the population (Statistics Canada, 2016). Over this same time period the Canadian labor market has seen increasing participation among women, and subsequent increases in the number of families where both parents are working outside the home (Smith & Koehoorn, 2016). The development of chronic conditions and subsequent restrictions in activity are common as people age (Health Council of Canada, 2007), and often lead to a need for care related to performing regular tasks

and acts, particularly assisted transport and the activities of daily living (e.g., washing, dressing, and feeding oneself). In many situations the responsibility for this care work falls on family members (defined here as informal care work). There is a reasonably large body of research demonstrating that informal care work is associated with negative labor market participation outcomes (Carmichael, Charles, & Hulme, 2010; Lilly, Laporte, & Coyte, 2007; Nguyen & Connelly, 2014; Nguyen & Connelly, 2017). The labor market outcomes associated with informal care work may include major transitions, such as the need to leave work, or less intrusive impacts such as working fewer hours in a given week (these are also referred to as extensive and intensive margins in the economic literature) (Carmichael & Charles, 2003; Van Houtven, Coe, & Skira, 2013). The objective of this article is to examine time trends in the impacts of informal care on multiple labor market participation outcomes in Canada over a 19-year period, with a focus on differences between men and women.

Understanding which workers are more likely to have their labor market participation affected by informal care is complex (Nguyen & Connelly, 2014; Van Houtven et al., 2013). Under a role-strain hypothesis, workers who have the strongest attachment to the labor market (i.e., work the longest hours) would be the most likely to have their labor market participation affected by informal care. This is because, given the finite number of hours in a day, time spent giving informal care is more likely to affect the number of hours they can spend at work, compared to workers who have more hours per day/week outside of the labor market available to them to provide informal care (i.e., part-time workers or casual workers) (Carr et al., 2018; Gonzales, Lee, & Brown, 2017). Conversely, under a marginal utility hypothesis, those workers who have lower quality jobs and those who are less attached to the labor market (i.e., work fewer hours) might be the most likely to engage in informal care, as the loss of paid hours or their overall contribution to total household income will be less than that of workers who earn higher wages, or who are the main breadwinner in the household (Carmichael et al., 2010; Carr et al., 2018; Nguyen & Connelly, 2014; Van Houtven et al., 2013). It is possible that in relation to labor market impacts of informal care both these hypotheses could be supported, as workers with less attachment may be more likely to provide informal care per se, but workers with greater attachment may be more likely to have informal care affect their labor market hours. It is also possible that the impacts might differ depending on the outcome under investigation. For example, part-time workers might be less likely to make a permanent change to exit the labor market, because they can more easily accommodate hours spent doing informal care compared to workers who work full-time (Carr et al., 2018). However, under a marginal utility framework, they will be more likely to miss hours from work on a nonpermanent basis, compared to those who work full-time.

Theories of gender-role expectations in relation to providing care and gendered labor market participation would suggest that women, in general, will be more likely to provide care, and subsequently have informal care affect labor market outcomes, compared to men (Pinquart & Sorensen, 2006); although men will also engage in informal care work (Carmichael & Charles, 2003; Lilly et al., 2007). Although authors have suggested that gendered labor market roles have changed in Canada and in other countries over recent decades, with differences between men and women in caregiving and labor market hours narrowing to some extent (Pinquart & Sorensen, 2006; Smith & Koehoorn, 2016), there are still substantial differences in male and female roles both inside and outside of the workplace (Quinn & Smith, 2018).

Women and men hold different positions in the labor market across occupations and industries, work hours, and employment relationships (Armstrong & Messing, 2014; Quinn & Smith, 2018; Smith & Koehoorn, 2016). For example, women are more likely than men to work part-time, and men are more likely than women to be the main wage earner in the household. As such, under both the marginal utility and role-strain hypotheses these gendered characteristics of employment will explain, to some extent, male/female differences in the labor market impact of informal care work. However, the relative contribution of these gendered labor market roles in explaining more general gendered differences in the impact of informal care work is currently not well understood (Pavalko & Artis, 1997; Smith & Koehoorn, 2016).

A final methodological challenge in much of the research examining the impacts of informal care on labor market participation is to isolate the impact of caregiving on labor market hours (Nguyen & Connelly, 2014; Van Houtven et al., 2013). As outlined earlier, under a marginal investment framework, workers who work the fewest hours, those in lower wage jobs, or those with lower quality jobs might be the most likely to engage in informal care, given the loss of income will be less than those who work full-time or at higher wages, and the benefits of providing care may outweigh benefits gained through their paid employment (Carr et al., 2018; Gonzales et al., 2017). This creates potential issues of reverse causation between labor market attachment and informal care work. Although reverse causation can to some extent be addressed with longitudinal study designs and instrumental variable analyses, these approaches still involve certain unverifiable assumptions. For example, instrumental variable analyses require that all impact between the instrumental variable and the outcome is completely mediated via the exposure of interest. Further, both approaches assume that differences in labor market attachment between caregivers and noncaregivers are attributed solely to caregiving, and not to other concurrent changes that might be unmeasured, but have also taken place simultaneously.

The objectives of this study were to address the earlier research gaps by examining male/female differences in the probability of making a major change in labor market

attachment (to either part-time or not working at all), or having a temporary absence from work, to care for elder relatives over the period 1997 through 2015. Secondary objectives were to examine the extent to which differences in labor market participation across occupations and employment relationships between men and women contribute to the male/female differences in these relationships, and to examine trends over time in the probability in informal care work affecting labor market participation outcomes. To address issues of reverse causality, the impact of informal care work on labor force attachment is obtained by directly asking respondents the reason for their current labor force attachment or reasons for not working, rather than inferring impact of informal care using differences in labor market attachment between those engaged in informal care work compared to those who are not.

We have the following hypotheses related to our analyses. We expect that women will be more likely to have informal care work that affects their labor market participation compared to men, and that differences between men and women in relation to likelihood of labor market impacts will be consistent over time (gendered role expectations). We expect that part-time workers will be less likely to take time off work to provide informal care, as they have more nonwork hours in which care can be provided compared to workers who work full-time (role-strain). However, we expect workers who are the main income earner in their household will be less likely to take time off work due to informal care (marginal utility framework). Although we expect that women will be both more likely to work part-time and be less likely to be the main income earner in their household, we hypothesize that adjustment for these gendered labor market factors will only minimally affect male/female differences in labor market disruption due to informal care work.

Method

This article uses secondary data from Statistics Canada's Labour Force Survey (LFS). The LFS is a monthly survey carried out by Statistics Canada with the objective of providing information on trends in labor market participation and hours of work across major occupational and industrial sectors in Canada (Statistics Canada, 2012). The LFS surveys approximately 56,000 Canadian households per month. Households remain in the sample for six consecutive months, with one sixth of the sample rotated out, and replaced by a new group of households each month. The target population for the LFS is the civilian, noninstitutionalized population 15 years and older residing in all of Canada's provinces and territories. Persons living on Aboriginal reserves, full-time members of the Canadian Armed Forces, and the institutionalized population are excluded from coverage, as are households in extremely remote areas. Statistics Canada estimates these groups represent less than 2% of the Canadian population aged

15 and older, and that these exclusions do not limit the ability of the LFS to be representative of its target population (Statistics Canada, 2012). The household nonresponse to the LFS is estimated to be approximately 10%. Nonresponse is dealt with through an adjustment of sampling weights (Statistics Canada, 2012)

For the purpose of this analysis we used microdata files for the LFSs for the years 1997–2015 inclusive. The year 1997 was chosen as the starting point for the analysis, as the questions asked in the LFS changed in this survey year (Statistics Canada, 2012). For each survey cycle, the analysis was restricted to non-self-employed respondents aged 40 and older who were either currently working or not working because they were caring for an elderly relative but had worked at some stage in the past year ($N = 5,871,850$ survey responses over the 19-year study period, with the number of responses examined ranging from 249,593–342,819 annually). The exclusion of respondents aged less than 40 years reflects the low proportion of workers within this demographic group who engage in informal care, and is consistent with other research in this area (Carr et al., 2018; Gonzales et al., 2017; Longacre, Valdmanis, Handorf, & Fang, 2017).

Outcomes: Impact of Care Work for Elderly Relatives (Aged 60 and Older) on Labor Market Participation

The LFS includes multiple questions about reasons for not currently working (for respondents who have worked in the previous 12 months), reasons for working part-time (less than 30 hr per week); and reasons for respondents not working the normal number of hours they usually work in the week of the survey. Multiple options are available for each of these outcomes, one of which is "Caring for an elder relative (60 years of age or older)".

This question offers some advantages over previous analyses examining differences in labor market status or hours of work between respondents who are engaged in informal care work versus those who are not, as it specifically asks the respondent to determine if their current labor market status or hours of work in the previous week is attributable to their informal care work.

Using these responses, we defined the following outcomes:

1. Respondents who were currently not working due to caring for elderly relatives;
2. Respondents who were working part-time as a result of caring for elderly relatives; and
3. Respondents who had taken time off work in the last week to care for an elderly relative.

Information on the number of hours the respondent was away from work to care for elderly relatives is collected for all respondents who had a temporary absence from work (outcome three given earlier). As such, we also examined the number of hours taken off work to care for elderly

relatives among those respondents who had taken some time off. For respondents who missed a full week of work, we used the hours usually worked per week to indicate the number of hours missed.

Main Independent Variable

The main variable for this analysis was male or female, as reported by the respondent. For all analyses females were compared to males.

Covariates Focused on Gendered Labor Market Participation

To examine these gendered labor market participation factors, we used the following variables which might be associated with informal care affecting labor market participation, and are potentially differentially distributed across male and female labor force participants.

1. The amount of sex segregation in the respondent's occupation operationalized as four groups (occupations with more than 70% men—most masculine; occupations 50%–69% men; occupations with 50%–69% women; occupations with 70% or more women—most feminine). Examples of the specific types of occupations worked by men and women within each of these categories are provided in Supplementary Table 2;
2. To determine if the respondent was likely the main wage earner in the household we used the reported weekly wages from the respondent, compared to the weekly wages of their partner (if applicable). If the respondent earned more than $150 more than their spouse per week ($7,800 per year) they were classified as the main income earner. If the respondent did not have a spouse, they were also classified as the main income earner. All other groups of respondents (those earning similar weekly wages as their spouse/partner, and those earning less) were classified as non–main income earners;
3. Hours of work: Based on the usual hours of work respondents were classified into the following groups: working 1–14 hr; working 15–34 hr; working 35–40 hr; working 41–49 hr; and working 50 or more hours. When examining leaving the labor market, we used the hours of work in the respondent's previous job (full-time vs part-time).

Models were also adjusted for the following labor market variables: If the respondent was working in a nonpermanent or in a permanent job (yes/no); if they were a member of a union or collective bargaining agreement (yes/no); how long they has been working in their current job (less than 1 year, 1–3 years, 3–5 years, 5–10 years, more than 10 years); and the number of employees at their workplace (less than 20 employees; 20–99 employees; 100–499 employees; more than 500 employees).

Other covariates

We included several other variables that may be differentially associated with male/female (our primary independent variable), and also might be associated with labor market changes due to informal care. These measures included the year and month of the survey, the age of the respondent, if they had dependent children, marital status and if their spouse worked, if they lived in a rural or urban location, and their province of residence.

Analyses

Initial descriptive analyses examined the percentage and number of respondents who had changed their labor market attachment due to caring for elderly relatives, and the percent and number of the employed labor force who had missed some time off work in the past week due to caring for elderly relatives. These estimates were provided by survey year, and where sample size permitted estimates were provided separately for men and women. Descriptive analyses also estimated the total number of hours lost due to temporary part and full absences from work in the LFS week, by survey year, separately for men and women.

To examine male/female differences in labor market disruption due to care work, and the extent to which these differences can be explained by the gendered nature of labor market roles, we ran a series of nested regression models both with and without these gendered covariates. The first model included an adjustment for age, marital status and if the respondent's spouse was working, presence of children, urban/rural living location, and the province of residence. A second model additionally included variables related to gendered labor market participation. For the outcome of permanently leaving the labor market these included occupational segregation and the hours of work (part-time vs full-time). For the outcome of working part-time as the result of caring this included occupational segregation, with additional adjustment for job tenure, membership in a union or collective bargaining agreement and workplace size. Work hours were not included in this model, as this measure is captured by the outcome. For the models examining temporary absence and the length of absences once taken, gendered labor market factors included hours of work, main income earner status and occupational segregation, with additional adjustment for the job tenure, union/Collective Bargaining Agreement membership, and workplace size.

For models examining change in labor market attachment and temporary absences from work due to caring for elderly relatives, we conducted a logistic regression model as these outcomes were binary (yes/no). For the model examining the number of hours absent from work in the survey week due to caring for elderly relatives, we used an ordinary least squares regression model, after checking that the distribution of variable of hours away from work in the previous week was normally distributed. The samples for these final models were only respondents who had taken

time off in the survey week for informal care work. For each outcome we also ran models including a multiplicative term to examine if the association between survey year and each outcome differed for men and women. To further examine changes in trends over time we undertook an analysis of time trends using Joinpoint Trend Analysis Software from the National Cancer Institute (National Cancer Institute, 2017). This program analyses rate data to find the best model to summarize the time trend over the study years using a Monte Carlo permutation method to test apparent changes in trends.

For all models, we included weights developed by Statistics Canada that take into account the probability of selection for the survey and the small nonresponse in the sample. In addition, to account for the clustering of responses within respondents over time, and within households we used the SURVEY commands in SAS, version 9.4 (PROC SURVEYLOGISTIC and PROC SURVEYREG), with the ID for the household included as a clustering variable (The SAS Institute, 2017).

Results

Figure 1 presents descriptive information on the percentage of respondents in each year of the labor force survey who had various types of labor market disruption due to caring for elderly relatives. Owing to small numbers of respondents leaving the labor market, and permanently working part-time, to care for elderly relatives, these two outcomes are combined in the figure. In general, the prevalence of all outcomes increased between 1997 and 2014. The percentage of labor market participants who had permanently changed their labor market status (to either not working or working part-time) to care for relatives ranged from just more than 3,300 respondents in 1997 (0.07% of the labor force) to a maximum of just less than 15,000 respondents in 2012 (0.2% of the labor force). Owing to the small number of men who had left the labor market permanently, in accordance with Statistics Canada guidelines in data suppression, it was not possible to present trends separately for men and women for this outcome.

The average percent of the labor market who had a temporary absence from work in any week increased from 0.04% (representing approximately 1,890 workers per week in 1997) to 0.14% of workers (representing approximately 10,600 workers per week in 2012). Between 2005 and 2015 it was possible to examine trends separately for men and women. With a few exceptions, in each year, the prevalence and numbers of temporary absences were more than double for women compared to men. We also estimated the average number of hours lost per week, among those people who took a temporary absence to care for an elderly relative. Average hours lost from work per week across the labor market increased from just more than
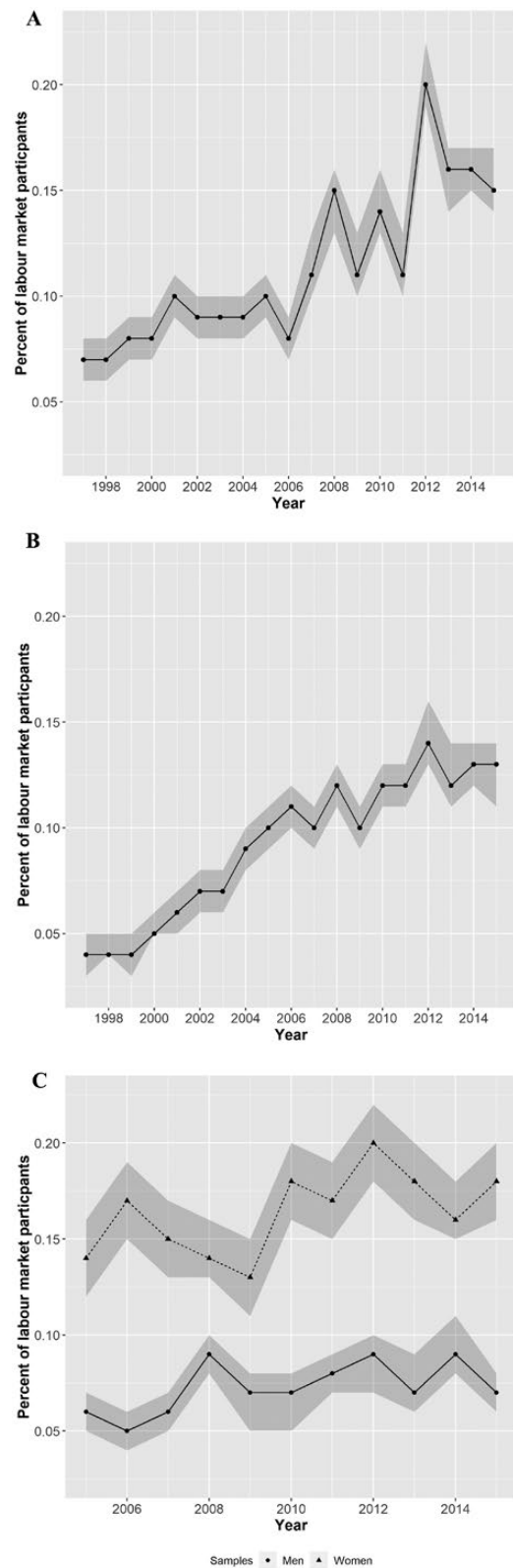

Figure 1. Average monthly estimates of the percent of the labor force who (A) have left the labor force or moved to part-time work due to caring for elderly relatives; or (B) and (C) had an absence from work in the last week to care for elderly relatives.

Table 1. Adjusted[a] Odds Ratios and 95% Confidence Limits for Permanently Leaving the Labor Market to Care for Elderly Relative (60+ Years of Age). Employed Labor Market Participants Aged 40 Years of Age and Older, Including Those Not Working Due to Caring for Elderly Relatives. 1997 Through 2015 (*N* = 5,871,850)

	Model 1		Model 2	
	OR	95% CI	OR	95% CI
Sex				
Male	Ref		Ref	
Female	1.97	1.52 to 2.54	1.73	1.23 to 2.41
Survey year	1.04	1.02 to 1.06	1.04	1.02 to 1.07
Working Status				
Full-time	—		Ref	
Part-time	—	—	2.86	2.22 to 3.69
Occupational segregation				
Occupations with 70% of more men (most masculine)	—		Ref	
Occupations with 50%–69% men	—	—	0.93	0.62 to 1.40
Occupations with 50%–69% women	—	—	1.22	0.82 to 1.82
Occupations with 70% or more women (most feminine)	—	—	0.81	0.56 to 1.18

Note: CI = confidence interval; OR, odds ratio.

[a]Estimates adjusted for all variables in the table and in addition age (continuous), survey month, province, urban/rural living location, working status of spouse, and presence of children younger than 12 years in the household.

30,500 hr in 1997, peaking at just more than 174,026 hr in 2012, reducing slightly to just more than 164,060 hr in 2015 (estimates not presented, but available on request). Given this is an estimate of the average weekly number of hours lost, these numbers equate to just more than 8.5 million hours which are lost from work due to informal care work among Canadian labor market participants aged 40 and older, in 2015. Across study years, the number of hours lost was approximately 2 –3 times larger among women compared to men (results not shown but available on request).

Table 1 presents the estimates for a series of nested regression models examining the probability of permanently leaving the labor market due to caring for elderly relatives. The first model is adjusted for covariates, with the second model additionally adjusting for variables describing gendered labor market roles. Descriptive information on all study variables is available in Supplementary Table 1. After adjusting for covariates women were almost twice as likely (OR 1.97, 95% CI 1.52–2.54) to have left the labor market compared to men. The estimate for survey year demonstrates that the probability of leaving the labor market has increased over the study period (on average 4% per year). Joinpoint analyses for trends indicated no change in the time trend over the study period. Adjustment for working status and occupational segregation slightly attenuated differences between men and women, although women were still more likely to have permanently left the labor market (OR 1.73, 95% CI 1.23–2.41).

Table 2 presents the odds of working part-time due to caring for elderly relatives. Women were more than 8 times more likely to be working part-time due to care work (OR 8.27, 6.85–9.98), with the probability of working part-time due to care work increasing over the study period (OR 1.04, 1.03–1.05). Joinpoint analyses indicated no change in the

time trend over the study period. Additional adjustment for occupational segregation, job tenure, being a member of a union of collective bargaining agreement, and workplace size attenuated differences between men and women; however, women were still more than 5 times more likely to be working part-time. In addition, respondents in occupations with a higher proportion of women (most feminine occupations), were twice as likely to be working part-time, compared to respondents in the most masculine occupations (OR 2.01, 95% CI 1.54–2.63), with this likelihood increasing with increasing female participation within occupations.

Table 3 presents the odds ratios for models examining taking a temporary absence from work in the last week. Women were more than twice as likely (OR 2.41, 2.21–2.64) than men to have taken a temporary absence. The probability of taking an absence increased on average 6% each year over the study period (OR 1.06, 1.05–1.07). Joinpoint analyses for trends indicated that there was a difference in the trend in the period 1997–2005, compared to 2006–2015, with a flatter trend in the latter period ($OR_{1997-2005}$ = 1.12, 1.09–1.15; $OR_{2006-2015}$ = 1.03, 1.01–1.05). Adjustment for hours of work, main earner status, occupational segregation, job tenure, if the respondent was a member of a union of collective bargaining agreement, and workplace size slightly attenuated male/female differences (OR 2.01, 1.78–2.27). Respondents who were the main income earner were less likely to have taken a temporary absence (OR 0.79, 0.70–0.91), and respondents in occupations with a greater proportion of women were more likely to have taken a temporary absence. No clear relationship was observed between working hours and taking a temporary absence from work.

Table 4 presents ordinary least squares estimates for the number of hours taken off work in the last week, only among those respondents who had taken a

Table 2. Adjusted[a] Odds Ratios and 95% Confidence Limits for Permanently Working Part-Time in Order to Care for Elderly Relative (60+ Years of Age). Employed Labor Market Participants Aged 40 Years of Age and Older, Excluding Those Not Working Due to Caring for Elderly Relatives. 1997 Through 2015 (*N* = 5,869,693)

	Model 1		Model 2[b]	
	OR	95% CI	OR	95% CI
Sex				
Male	Ref		Ref	
Female	8.27	6.85 to 9.98	5.52	4.28 to 7.13
Survey year	1.04	1.03 to 1.05	1.04	1.03 to 1.05
Occupational segregation				
Occupations with 70% of more men (most masculine)	—		Ref	
Occupations with 50%–69% men	—	—	1.12	0.84 to 1.48
Occupations with 50%–69% women	—	—	1.67	1.26 to 2.21
Occupations with 70% or more women (most feminine)	—	—	2.01	1.54 to 2.63

Note: CI = confidence interval; OR, odds ratio.
[a]Estimates adjusted for all variables in the table and in addition age (continuous), survey month, province, urban/rural living location, working status of spouse, and presence of children younger than 12 years in the household.
[b]Model two estimates additionally adjusted for job tenure, member of union or collective bargaining agreement, and workplace size.

Table 3. Adjusted[a] Odds Ratios and 95% Confidence Limits for Taking Time Off Work in the Past Week to Care for Elderly Relative (60+ Years of Age). Employed Labor Market Participants aged 40 Years of Age and Older. 1997 Through 2015 (*N* = 5,869,693)

	Model 1		Model 2[b]	
	OR	95% CI	OR	95% CI
Sex				
Male	Ref		Ref	
Female	2.41	2.21 to 2.64	2.01	1.78 to 2.27
Survey year	1.06	1.05 to 1.07	1.06	1.05 to 1.07
Hours of work				
1–14 hr per week	—	—	1.00	0.81 to 1.23
15–34 hr per week	—	—	1.15	1.03 to 1.28
35–40 hr per week	—		Ref	
41–49 hr per week	—	—	1.03	0.84 to 1.26
More than 50 hr per week	—	—	1.02	0.82 to 1.28
Main income earner				
No	—		Ref	
Yes	—	—	0.79	0.70 to 0.91
Occupational segregation				
Occupations with 70% of more men (most masculine)	—		Ref	
Occupations with 50%–69% men	—	—	1.12	0.96 to 1.30
Occupations with 50%–69% women	—	—	1.27	1.09 to 1.47
Occupations with 70% or more women (most feminine)	—	—	1.23	1.06 to 1.41

Note: CI = confidence interval; OR, odds ratio.
[a]Estimates adjusted for all variables in the table and in addition age (continuous), survey month, province, urban/rural living location, working status of spouse, and presence of children younger than 12 years in the household.
[b]Model two estimates additionally adjusted for job tenure, member of union or collective bargaining agreement, and workplace size.

temporary absence (*n* = 4,572). No statistical differences were observed between men and women or across survey years in the first model. After adjustment for various work status measures women took just more than 2.5 hr more off work than men. The hours a respondent usually worked was associated with the time taken off work, with respondents who worked more hours per week having to take more hours off work, than respondents who worked fewer hours. No differences were observed across main income earner status, or occupational segregation measures.

Table 4. Adjusted[a] Ordinary Least Squares Estimates and 95% Confidence Limits for the Number of Hours Taken Off Work in the Past Week to Care for Elderly Relative (60+ Years of Age). Employed Labor Market Participants Aged 40 Years of Age and Older, Who Have Taken Time Off Work in the Last Week. 1997 Through 2015 (*n* = 4,572)

	Model 1		Model 2[b]	
	Est	95% CI	OR	95% CI
Sex				
Male	Ref		Ref	
Female	1.06	–0.12 to 2.24	2.68	1.14 to 4.21
Survey year	0.04	–0.07 to 0.14	0.03	–0.08 to 0.13
Hours of work				
1–14 hr per week	—	—	–10.07	–11.29 to –8.84
15–34 hr per week	—	—	–1.21	–2.34 to –0.07
35–40 hr per week	—		Ref	
41–49 hr per week	—	—	3.92	0.82 to 7.01
More than 50 hr per week	—	—	11.04	6.87 to 15.21
Main income earner				
No	—		Ref	
Yes	—	—	0.97	–0.73 to 2.67
Occupational segregation				
Occupations with 70% of more men (most masculine)	—		Ref	
Occupations with 50%–69% men	—	—	–1.45	–3.34 to 0.43
Occupations with 50%–69% women	—	—	–0.52	–2.42 to 1.37
Occupations with 70% or more women (most feminine)	—	—	–0.66	–2.46 to 1.14

Note: CI = confidence interval.

[a]Estimates adjusted for all variables in the table and in addition age (continuous), survey month, province, urban/rural living location, working status of spouse, and presence of children under 12 in the household.

[b]Model two estimates additionally adjusted for job tenure, member of union or collective bargaining agreement, and workplace size.

For each of the earlier analyses we also examined if the increasing trend for each outcome over time differed for men compared to women, using a multiplicative interaction term between sex and survey year. This interaction was only statistically significant for the outcome of permanently leaving the labor market, with the interaction term suggesting the increase in the outcome over time was stronger among men (10% increased likelihood per year) compared to women (2% increased likelihood per year).

Discussion

As the Canadian population ages, it is likely that increasing numbers of labor force participants will be engaged in informal care work for elderly relatives (Fast, 2015). Although men and women are engaged in informal care work to differing extents (Carmichael & Charles, 2003; Jacobs, Laporte, Van Houtven, & Coyte, 2014; Van Houtven et al., 2013), few studies have examined male/female differences in the impact of informal caregiving on work outcomes, how gendered labor market roles impact these differences, and if these differences have narrowed or widened over time. The purpose of this study was to address these research gaps using large, representative samples of the Canadian labor market over a 19-year period. We observed the proportion of respondents who made a permanent change in employment (left the labor market or were working part-time due to informal care work) had

increased over the study period, although this was still less than 0.2% of employed labor force participants aged 40 and older. Similarly, the proportion of the labor market who had missed work in the last week to provide informal care increased over the study period. Although the trends in increases over time were similar for permanently leaving the labor market, and working part-time to care for elderly relatives, we observed a difference in the time trend for temporary absences from work, with a steeper year over year increase between 1997 and 2005 (OR for each year change = 1.12, 95% CI 1.09–1.15), compared to 2006 to 2015 (OR for each year change = 1.03, 95% CI 1.01–1.05).

Between the period 2005 to 2015, women were approximately twice as likely to miss work compared to men, with these differences between men and women remaining relatively stable between 2005 and 2015. Among individuals who missed work, women took marginally more time off, compared to men. Although adjustment for gendered differences in labor market participation among men and women attenuated these estimates to varying extents, women were still more likely than men to have each outcome, even when these factors were taken into account. Taken together, in the most recent time period (2015) almost 12,000 Canadians have permanently changed their employment due to informal care work, and just less than 10,000 other Canadians took time away from work each week due to informal care work. It was estimated that just more than 8.5 million hr are lost from paid employment

annually in 2015 due to informal care work, with approximately two thirds of these hours being among female labor force participants, despite their weaker attachment to the labor market in general.

We had hypothesized that respondents who were working fewer hours would be less likely to take time off work to care for elderly relatives, as they had more nonwork hours available to them in general (role-strain hypothesis). Although we observed no clear relationship between number of usual work hours and the probability of taking time off work to care for elderly relatives, we did observe that when taking time off work, those respondents working fewer hours as part of their normal work schedule, took fewer hours off work, partially supporting this hypothesis. We had also hypothesized, within a marginal utility framework, that respondents who were the main income earner in their household would be less likely to take time off work. Supporting our hypothesis, we did observe that respondents who were the main income earners were less likely to have a temporary absence from work, although we observed no difference in the number of hours taken per absence. We also observed that workers who were working part-time had a more than 2.5 increase in their likelihood to leave the labor market to care for an elderly relative, compared to those working full-time. This finding does not support the suggestion that those working part-time might more easily accommodate informal care work, without having to make a permanent change in labor market participation.

It should be noted that the outcomes examined in this study are probably the tip of the iceberg related to informal care work. It is likely that many labor market participants have and will spend time engaged in informal care work, which does not always result in having to take time off work. As such, our estimates should not be generalized to total hours of informal care work undertaken by Canadian workers, nor should the differences between men and women reported in this article be generalized to differences in total hours of informal care work between men and women (both inside and outside of the labor market).

Comparing our results with previous research is hindered by the comparability between our outcomes and the outcomes previously examined. Most work in this area has examined differences in labor market engagement, or hours of work, or wages, between respondents reporting providing care and those who do not (Lilly et al., 2007). These articles generally find modest impacts on labor market attachment (absolute differences in employment participation less than 5%), but that providing care does have important impacts on the number of hours worked (Lilly et al., 2007; Van Houtven et al., 2013). Our results are generally similar, as the proportion of the labor market who report taking hours off work to engage in informal care annually is higher than the proportion of workers who make a permanent change in employment. It should be noted, however, that in many of the previous analyses in this area hours of work refer to the

hours generally worked, as opposed to the outcome in our article, which refers to hours specifically not worked in the previous week, assessed on a monthly basis.

It is important to note that for the most part, gendered labor market factors explain only a relatively small proportion of male/female differences in informal care work. Even though respondents in more feminine occupations were more likely to be working part-time or to take time off work to care for elderly relatives, compared to those in the most masculine occupations, women were still 5 times more likely to be working part-time due to care work, and twice as likely as men to have a temporary absence from work, even after accounting for these factors. As such, based on our results, even if men and women were attached to the labor market in similar ways (e.g., part-time work vs full-time work), and working in similar occupations, women would still be 73% more likely to permanently leave the labor market, more than 5 times more likely to be working part-time due to informal care work, and twice as likely to take time off each week due to informal care. Further, when they did take time off work, women would take approximately 160 min more off work per week, compared to men.

Our study does have strengths and limitations. We do not know if people were paid during their absence from work, or if they would have liked to take an absence from work for informal care work but were unable to due to workplace demands or financial necessity. We also do not know what role the respondent plays in caregiving (e.g., are they the primary carer and is the recipient of the care inside or outside of their house), the relationship the respondent has to the care recipient, and how informal care affects other nonwork time use (e.g., housework, child care, and leisure time activities). It is likely these factors would affect the number of hours required for informal care (Jacobs et al., 2014; Nguyen & Connelly, 2014). The brevity of information available to us, however, is balanced by the large and representative sample available to us for this study, with information captured over multiple contiguous time periods. This allowed estimation of trends in informal care work, which can be generalized to the Canadian labor market (Statistics Canada, 2012). In addition, due to the questions available to us, we were able to estimate changes in labor market attachment, and hours away from work, that each respondent attributed directly to informal care work. Although the measure used in our analyses, which involves a direct attribution from a respondent, has strengths over comparing work hours (or labor market status) between respondents who provide care for elderly relatives and those that do not, it is not without its own limitations. It is possible that a workers' ex-post justification for their employment status may not be an accurate representation of the potentially complex decision to leave the labor market or to work part-time. It is possible that workers with elderly parents may be more likely to justify their employment status through caregiving responsibilities, irrespective of their initial reason for changing employment status. In

addition, it is also possible that these justifications may differ for men and women. Future work in this area should continue to improve on accurately assessing the impacts of informal care work on various labor market outcomes.

In conclusion, the permanent and temporary impacts of informal care work on labor market participation in Canada have increased between 1997 and 2015. Given the demographic forces at play, specific to a growing elderly population, increasing longevity and continued retreat of the public health care system, it is very likely that the impacts of informal care work on labor market participation will continue to increase in the years ahead. For each labor market outcome in our article, women were more likely to be affected than men, with the gendered nature of employment having relatively small impacts on these male/female differences. This suggests that informal care work continues to be gendered, in that it is experienced more so by women. This has important implications for supervisors, managers, human resource professionals, and employers generally, with respect to being sensitive to, and responding to the gendered experience of caregiving, specifically for female employees. With the exception of leaving the labor market due to informal care work, trends in the increased probability of labor market disruption due to informal care were similar for men and women between 1997 and 2015. This suggests that the gendered burden of informal care work is not substantially changing, despite greater participation of women in the labor market. Future studies should examine the associated financial and health related impacts of these increases in informal care work using a gendered lens, and the imbalance in disruptions in labor market participation due to informal care between men and women. Studies are also encouraged to examine the role of flexible workplace practices and other carer-friendly workplace programs from a gendered perspective, in addressing the increased need for providing informal care among labor force participants (Williams et al., 2017).

Supplementary Material

Supplementary data are available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

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Author Contributions

P. Smith and C. Mustard conceived the study. C. Cawley conducted the analyses under the supervision of P. Smith. All authors participated in the interpretation of study results and the writing and revision of the article.

Conflict of interest

None declared.

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