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ARTICLE

Care-giver wellbeing: exploring gender, relationship-to-care-recipient and care-giving demands in the Canadian Longitudinal Study on Aging

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Abstract

The three-way intersection of gender, relationship-to-care-recipient and care-giving demands has not, to our knowledge, been examined in relation to the wellbeing of family care-givers. We explore inequalities in depressive symptoms and life satisfaction, comparing wives, husbands, daughters and sons providing *very-intensive* care (36+ hours/week) with those providing less care and disparities between these groups in the factors related to disadvantage. Data from the Canadian Longitudinal Study on Aging (N = 5,994) support the existence of differences between the groups. *Very-intensive* care-giving wives report the most depressive symptoms and lowest life satisfaction; less-intensive care-giving sons report the fewest depressive symptoms, and less-intensive care-giving daughters report the highest life satisfaction. However, group differences in life satisfaction disappear among *very-intensive* care-givers. Drawing on Intersectionality and Stress Process theories, data from regression analyses reveal a non-significant gender–relationship–demand interaction term, but, health, socio-economic and social support resources play a strong mediating role between care demand and wellbeing. Analyses of the eight groups separately reveal diversity in the care-giving experience. Among less-intensive care-givers, the mediating role of resources remains strong even as differences are evident. Among *very-intensive* care-givers, the role of resources is less and differences in wellbeing between the groups are magnified. Policy implications emphasise the imperative to personalise services to meet the varied needs of care-givers.

Keywords: intersectionality; depression; life satisfaction; care demands; spouse care-givers; adult-child care-givers; care-giving; wellbeing

Introduction

This paper focuses on the wellbeing of care-givers at the intersection of gender, relationship of care-giver to care recipient, and care-giving demands. Care-giving refers to unpaid assistance to others due to a health condition (physical, mental or cognitive) or limitations associated with ageing (Cohen *et al.*, 2019). Wellbeing, quality of life and mental health are well-used terms in the gerontological care-giving literature, referring to broad multi-dimensional concepts. They encompass numerous indicators including depression, anxiety, life satisfaction, perceived quality of life, self-esteem, burden and self-rated mental health, among others, and are used either as an outcome or a predictor in analyses. To avoid extrapolating from one dimension to the broader multi-dimensional concept, two indicators of wellbeing are used here: depression – a mood or symptom as well as a disorder consisting of several symptoms (Dow *et al.*, 2011), and life satisfaction – a global concept referring to an evaluation of life as a whole. Depression is role-specific; life satisfaction is a broader concept encompassing all aspects of life.

Much research has been devoted to gender comparisons among family care-givers and many studies document the disadvantaged position of women care-givers compared with men in relation to depression and life satisfaction (Hoe *et al.*, 2007; Rio-Logaro *et al.*, 2013). Some, though, report no gender differences (Poysti *et al.*, 2012; Nogueira *et al.*, 2019). The differences, where found, are often explained in terms of care-giving as an expected role for women who provide more care, more hands-on care, more complex care and more intensive care than men (Pinquart and Sörensen, 2006). Men, it is suggested, are more likely to be acknowledged for the care they provide and take a more instrumental, less emotionally invested approach (Swinkels *et al.*, 2019). However, some researchers (Baker and Robertson, 2008) suggest that men may find care-giving more stressful than women due to its perceived 'feminine' nature. Based on their meta-analysis, Pinquart and Sörensen (2006) conclude that gender differences in health outcomes are small and less pronounced in later than in earlier studies, suggesting that gender differences may be decreasing. Supporting this view, Wolff *et al.* (2018) note a non-significant trend towards more men as primary care-givers from 1999 to 2015.

Spousal care-givers are considered more disadvantaged than other care-givers and often report higher psychological distress than adult-child care-givers (Pinquart and Sörensen, 2011; Wong *et al.*, 2019). This tends to be attributed to their being older, having a greater likelihood of sharing a residence with the care recipient, providing more intensive care, having a stronger emotional attachment to the care recipient and viewing care-giving as a normative part of marriage. They typically have fewer competing responsibilities but worse physical health than adult-child care-givers. However, adult-child care-givers often have busier lives with many competing obligations and can view care-giving as role reversal (Lee and Smith, 2012). Furthermore, Lin *et al.* (2012) find that adult-child care-givers generally report more negative experiences than spouse care-givers. Rigby *et al.* (2019) find that adult children report lower quality of life even though spouse and adult-child care-givers do not differ significantly in levels of depression, adding support to the argument that their overall care-giver experiences are more similar than different.

Among those studying the gender–relationship intersection (*i.e.* comparing wives, husbands, daughters and sons), the findings are equivocal. In an early study, Young and Kahana (1989) find that, among care-givers of recovering heart patients, daughters report greater mental health symptomatology than either wives or husbands (sons were not included). Conde-Sala *et al.* (2010) report that care-giving sons have the worst mental health followed by daughters, wives and finally husbands. Chappell *et al.* (2015) find that wives have the worst self-esteem, followed by husbands, sons and then daughters, whereas daughters experience the most burden, followed by sons, wives and then husbands. Lin *et al.* (2012) report that daughters claim more positive experiences than wives. Others, such as Raschick and Ingersoll-Dayton (2004), find no support for the gender–relationship intersection when studying the mental health costs (such as feeling exhausted at the end of the day) and rewards (such as care-giving made them feel good about themselves) of care-giving. Overall, research to date suggests that these groups vary considerably in their levels of wellbeing albeit with inconsistency in who fares better or worse.

Many reports confirm that the greater the care demands, the worse the mental health (Trivedi *et al.*, 2014; Pristavec, 2019). However, Farina *et al.*'s (2017) systematic review concludes that objective measures of care demands – such as the number of tasks assisted, assistance with basic activities of daily living (ADLs) or with instrumental activities of daily living (IADLs) – are not consistently related to care-giver quality of life. Adding care-giving demands to explore the three-way intersection of gender–relationship–demands has not, as far as we are aware, been done.

This paper explores gender–relationship–demand intersectionality, asking whether there is evidence of inequality in depressive symptomatology and life satisfaction when comparing the intersectional groups. Drawing on intersectionality as a guiding paradigm (Crenshaw, [1994] 2005) and based on past studies assessing gender, relationship and demands separately, it asks whether wives, as women and spouses providing *very-intensive* care, are the most disadvantaged and sons, as men and adult-child care-givers providing less-intensive care, are the most advantaged in terms of wellbeing. Drawing on the Stress Process Model (Pearlin *et al.*, 1990), it explores factors that may be related to disparities in wellbeing, asking whether the intersection of these statuses is related to care-giver wellbeing when taking other factors into consideration (*i.e.* whether the intersectionality provides an additional statistically significant contribution to wellbeing). In addition, irrespective of whether their depressive symptoms and life satisfaction are similar or different from one another, and irrespective of whether the intersection significantly contributes to wellbeing, we also ask whether the intersecting groups differ from one another in the factors related to disadvantage in wellbeing to identify potentially modifiable contextual factors.

These questions are pursued quantitatively, using survey data from a cross-sectional national sample of Canadians interviewed in the Canadian Longitudinal Study on Aging (CLSA). Analyses are conducted among care-givers (N = 5,994) providing *very-intensive* care (36+ hours of care/week) (Cannuscio *et al.*, 2002) and those providing less care, including very low levels of care (1–2 hours/week). Whereas much care-giver research focuses exclusively on primary care-givers, the CLSA focuses on all care-givers.

Review of the literature and theoretical framework

Intersectionality

An intersectionality perspective is used as a guiding paradigm for examining the combined experience of gender, relationship and care-giving demands. Intersectionality is a theoretical perspective and research paradigm first popularised by Crenshaw ([1994] 2005) to study racism. While a major focus is on inequality, Choo and Ferree (2010) note that it applies to all social phenomena, not only subordinated groups, emphasising the non-additive effects of living at the intersection of multiple social statuses. It postulates that social structural locations (such as gender and social class) coexist, interact with one another, are dynamic and are co-constructed. The social categories people occupy reflect larger social structures that can result in positive, negative, or both positive and negative individual experiences (Hankivsky *et al.*, 2010). The perspective gives voice to the multi-dimensional and relational nature of care-giving and the social conditions within which care-giver wellbeing is situated. It directs attention to the complex and diverse lived realities associated with intersecting statuses, thereby increasing our understanding of people's care-giving experiences (Dilworth-Anderson *et al.*, 2020).

To the extent that women, spouses and those involved in *very-intensive* care-giving are more disadvantaged as care-givers, one would expect *very-intensive* care-giving wives to report the most depressive symptoms and lowest life satisfaction. Sons, who provide less-intensive care-giving, and as men and adult children, are expected to report the fewest depressive symptoms and highest life satisfaction. Lin *et al.* (2012) do find that wife care-givers are more likely to report negative care-giving outcomes than husbands but Nogueira *et al.* (2014) do not find any difference in quality of life when comparing husbands and wives caring for those with dementia (adult-child care-givers were not included and there was not a focus on care-giving demands).

Stress Process Model

The Stress Process Model (Pearlin *et al.*, 1990) and its many adaptations (Conde-Sala *et al.*, 2010; Pristavec, 2019; Swinkels *et al.*, 2019) is consistent with an intersectionality perspective. It is drawn upon here to elucidate potential factors that, in addition to gender, relationship-to-care-recipient and care demand, may be salient for depressive symptoms and life satisfaction. This model posits linkages between social structural location and individual wellbeing, taking stressors and risks and resources into account. It posits the importance of background and contextual factors representing structural inequalities associated with resource distribution that can be related to wellbeing. In addition to gender, age and education are included here as other sources of structural inequality. Older age is commonly viewed as a disadvantaged social location as stressors tend to accumulate over the lifecourse (as in the cumulative advantage/disadvantage theory of ageing). Some research supports this view, finding older care-givers report worse mental wellbeing (De Fazio *et al.*, 2015; Lou *et al.*, 2015; Sambasivam *et al.*, 2019). However, older care-givers to those with dementia in some studies report better mental wellbeing (Nogueira *et al.*, 2019; Rigby *et al.*, 2019; Sambasivam *et al.*, 2019). Furthermore, Blanchflower and Oswald (2008) reveal wellbeing to be

U-shaped over the lifecourse, with middle-age a low point. Education typically represents lifelong advantage with lower levels related to more depressive symptoms (Lin *et al.*, 2012; De Fazio *et al.*, 2015), lower quality of subjective wellbeing (Nogueira *et al.*, 2019; Sambasivam *et al.*, 2019) and less life satisfaction (Oliveira and Hlebec, 2016) among care-givers.

The Stress Process Model conceptualises care-giving demand as a primary stressor leading to a variety of health outcomes. Research supports this view. Providing assistance with ADLs for 20+ hours/week is likely to result in more depressive symptoms over time (Hirst, 2005); women providing 36+ hours/week of care are six times more likely than non-care-givers to have depressive and anxiety symptoms (Cannuscio *et al.*, 2002). Borg and Hallberg (2006) report that care-givers providing care at least four times per week have significantly lower life satisfaction than care-givers providing less-frequent care, and that providing care every day triples the risk of lower life satisfaction. Trivedi *et al.* (2014) find more hours per week spent care-giving is related to poorer mental health among women; a greater number of months spent care-giving is related to worse mental health among men.

However, Farina *et al.*'s (2017) systematic review of research on factors related to quality of life among care-givers to those with dementia concludes that objective measures of care demand are not consistently related to care-giver quality of life. Since that review, Pristavec (2019) reports that both long-term and intense care-giving are detrimental, increasing levels of burden among both men and women. Furthermore, there is no consistency in the measures used nor in whether studies examine the impact of providing assistance with ADLs only (Bertogg and Strauss, 2020), IADLs only (Feld *et al.*, 2010) or both (Cohen *et al.*, 2019). There is some evidence to suggest that adult-child care-givers more often provide IADL than ADL care (Wolf *et al.*, 1997). Navaie-Waliser *et al.* (2002) find that women are more likely to provide more-intensive assistance with both ADLs and IADLs. In sum, although measures of care-giving demand vary, and there are contrary findings, the demands of care-giving cannot be ruled out as a major correlate of wellbeing disadvantage, and perhaps differentially important in different intersectional groups.

The Stress Process Model also posits the importance of secondary stressors (risks) that follow from exposure to care-giving demands and other primary stressors as well as social and other resources that might protect care-givers from the negative impact of stressful experiences, also known as potential mediating risks or resources (Borg and Hallberg, 2006; Pinquart and Sörensen, 2006). Secondary stressors can include economic/work-related, health and social strains. Lower socio-economic status is consistently related to higher levels of depressive symptoms (De Fazio *et al.*, 2015) and lower quality of subjective wellbeing among care-givers (Oliveira and Hlebec, 2016; Sambasivam *et al.*, 2019). Chappell (2016) finds that male care-givers living in poverty are an especially at-risk group for depressive symptoms. However, the implications of employment might be different. Pinquart and Sörensen (2011) find that for care-givers, being employed is related to worse mental health. Borg and Hallberg (2006) find that being employed is related to higher life satisfaction among care-givers irrespective of the frequency of care-giving. Care-giver health can also be both a risk and a resource when dealing with the demands posed by care-giving. Poorer physical health is related to worse care-giving experiences (Pristavec, 2019) and lower life satisfaction (Oliveira and Hlebec, 2016). Women care-givers tend to have poorer physical and mental health than men (Navaie-Waliser *et al.*, 2002; Farina *et al.*, 2017) and spouses report worse physical health than adult children (Pinquart and Sörensen, 2011).

The perception of good social support is frequently related to higher life satisfaction (Tomomitsu *et al.*, 2014; Oliveira and Hlebec, 2016) and fewer depressive symptoms (Clay *et al.*, 2008). Yang *et al.* (2019) and Cannuscio *et al.* (2002) report a mediating role for social support in the depressive symptoms reported by care-givers. However, the systematic review by Farina *et al.* (2017) finds three of five quantitative studies report no evidence of a relationship between social support and quality of life, and Rigby *et al.* (2019) find that adult-child care-givers have lower quality of life despite having more social support than spousal care-givers. Moreover, assistance from others may not always be helpful or may be enacted when care-giver wellbeing is already taxed. Lou *et al.* (2015) find care-giver depressive symptoms increase and Swinkels *et al.* (2019) report care-giver burden increases when additional informal care-givers are present. Additionally, Sibalija *et al.* (2020) report more frequent social participation related to fewer depressive symptoms. Finally, being married may provide support to care-givers but not always. Oliveira and Hlebec (2016) find that married care-givers report higher life satisfaction but Wong and Shobo (2017) find unmarried adult-child care-givers have the fewest number of daily stressors. Overall, although measures vary and findings are inconsistent, social support is potentially an important resource for care-givers.

The current study

Although the Stress Process Model posits causality, with social structural location, stressors and stress resources affecting mental health outcomes, the reverse may also occur. Depressive symptoms or life satisfaction can affect social support and/or the care-giving one assumes. With cross-sectional data one cannot know the direction of the relationships but can explore factors that are related to depressive symptoms and life satisfaction without assuming causality. As Bowleg (2012) notes, intersectionality was not developed for prediction. Here, exploring intersectionality in cross-sectional data, no causality is implied. Instead, interest lay in exploring family care-giver gender–relationship–demand intersectionality in depressive symptoms and life satisfaction. The following research questions are addressed:

- Are some groups at the intersection of gender, relationship-to-care-recipient and care-giving demand more disadvantaged than others in terms of depressive symptoms or life satisfaction?
- Is there evidence that this intersectionality is directly related to wellbeing? That is, is it significantly associated with wellbeing when controlling for other factors including potential mediating risks and resources?
- Irrespective of inequality or the lack thereof in depressive symptoms and life satisfaction, and irrespective of whether this intersectionality is significantly associated with wellbeing, are differential factors salient for care-giver wellbeing among the different intersectional groups?

Research design

Data source

Data come from the CLSA which recruited 51,338 Canadian residents, targeting those aged 45–85 years at baseline, to be followed for at least 20 years or until death. The CLSA includes two components. The Tracking cohort consists of approximately 20,000 people from the ten provinces, stratified by age and sex within provinces and interviewed by telephone. The Comprehensive cohort of approximately 30,000 people living within 25–50 kilometres of one of 11 data collection sites across seven provinces is also stratified by age and sex within province. Comprehensive cohort respondents receive an in-home interview with questions similar to those asked of Tracking cohort respondents. Exclusions include residents in the three territories, persons living on First Nations settlements, full-time members of the Canadian Armed Forces, those living in institutions, those unable to speak English or French (Canada's two official languages) and, for the Comprehensive cohort, residents in New Brunswick, Prince Edward Island and Saskatchewan. Individuals were chosen randomly from four sampling frames to obtain a nationally representative sample (for details, *see* CLSA, 2017; Raina *et al*., 2019).

Sample

For this paper, data come from care-givers who participated in the Comprehensive cohort at its first three-year follow-up (collected July 2015 to July 2018), selected because particular variables of interest are available. Care-givers were identified by asking: 'During the past 12 months, have you provided any of the following types of assistance to another person because of a health condition or limitation?' Nine possible types of assistance were listed (*see* below). Overall, 14,479 or 52.1 per cent of respondents (N = 27,765) identified themselves as providing any care. The study sample was further restricted to spouse and adult-child care-givers with complete data on hours per week of care-giving (N = 5,994), representing 41.4 per cent of all care-givers (low because the sample was not restricted to primary care-givers).

Measures

There are two outcome measures. Depressive symptoms are measured using the Center for Epidemiologic Studies Short Depression Scale (Anderson *et al*., 1994) which asks care-givers ten questions about how often in the past week they experienced feelings such as depression, loneliness, hopefulness for the future and restless sleep, with four possible responses to each (all the time, occasionally, some of the time, rarely or never). Scores range from 0 to 30; higher scores indicate more symptoms of depression (Cronbach's $\alpha = 0.81$).

The Satisfaction with Life Scale (Diener *et al*., 1985) refers to the sum of responses to five items: 'In most ways, my life is close to my ideal', 'The conditions of my life are excellent', 'I am satisfied with my life', 'I have gotten the important things I want in life' and 'If I could live my life over, I would change almost nothing'. Initial responses include agree, disagree and neither. Respondents are then asked whether they strongly disagree, disagree, slightly disagree, slightly agree,

agree or strongly agree with each statement. Scores range from 5 to 35; the higher the score, the more satisfied the individual (Cronbach's $\alpha = 0.83$).

Gender, relationship and care-giving demand are of central interest as independent variables (IVs). Gender refers to male and female; relationship refers to spouse and adult child. Given past research on the gender–relationship intersection, this intersection is included resulting in four categories: wives, husbands, daughters and sons. As noted by Cohen *et al.* (2019), there is no universally accepted gold standard for measuring intensity of care-giving demand and the frequency distribution revealed no obvious cut-off point in the data. Here, intensity is a dichotomous variable, contrasting *very-intensive* care-giving (defined as 36+ hours/week following Cannuscio *et al.*, 2002) with less-intensive care-giving (less than 36 hours/week). Eight categories represent the gender–relationship–demand intersectional groups: *very-intensive* care-giving wives, husbands, daughters and sons, and less-intensive care-giving wives, husbands, daughters and sons. Less-intensive care-giving sons are the reference category (for definitions and coding of all IVs, *see* Table 1).

Age (measured in years) and education are included as background contextual factors. Race and ethnicity are not included despite their potential importance (Dilworth-Anderson *et al.*, 2020) because the Canadian sample is overwhelmingly white (>90% and therefore non-discriminatory) with non-white individuals representing many different groups.

Five indicators of the primary stressor, care-giving demand, include: the number of hours per week care is provided (included because there is variation within both the *very-intensive* and less-intensive groups); the number of weeks per year the care-giver provides care; the number of ADLs (personal care, mobility) they provide assistance with; the number of IADLs (medical care; managing care; meal preparation; activities; transportation; social/emotional assistance; and financial management included only if other care is also provided) they provide assistance with; and the number of people assisted (which was originally an integer variable ranging from 1 to 50, but is recoded as shown in Table 1B due to the large positive skew).

Potential mediating risks and resources include: socio-economic status, care-giver health and social support (*see* Table 1C). Socio-economic status is assessed by three variables: work status, home-ownership and subjective financial status. Health is assessed using three indicators: the number of chronic conditions as diagnosed by a doctor (from a list of 25 conditions that includes heart disease, peripheral vascular disease, a memory problem, dementia or Alzheimer's disease); self-rated health (based on the question: 'In general, would you say your health is excellent, very good, good, fair or poor?'; and the Social Life Space Index, a composite measure of mobility (Peel *et al.*, 2005) derived from responses to questions about frequency of movements to five life-space levels in the previous four weeks and whether mobility aids were required (*e.g.* 'During the past 4 weeks have you been to … other rooms in your home besides where you sleep? An area outside your home such as your porch, deck or patio…). Scores range from 0 (totally bedbound) to 120 (can travel out of town every day without assistance) with higher scores indicating greater mobility. Even though the health of the care recipient (cognitive deficits, behavioural problems and/or poor functioning) is sometimes

Table 1. Sample description: background characteristics, care-giving demands as primary stressors and resources/risks as secondary stressors

Variable	Level (code)	Less-intensive care-givers (N = 5,364)	*Very-intensive* care-givers (N = 630)	Test-statistic for group differences[1]
(A) Background characteristics:				
Gender (%)	Male (0)	48.9	34.4	$\chi^2(1) = 49.550^{***}$
	Female (1)	51.1	65.6	
Age	Mean (SD)	59.5 (8.4)	62.5 (10.0)	$t = 7.918^{***}$
Education (%)	<High school graduate (1)	2.1	2.4	$\chi^2(6) = 16.265^{*}$
	High school graduate (2)	7.4	8.7	
	Some post-secondary (3)	6.8	5.3	
	Trade certificate/diploma (4)	9.7	10.0	
	University/college certificate/diploma (5)	21.9	20.5	
	Bachelor degree (6)	27.1	30.1	
	University degree > Bachelor (7)	24.9	23.0	
Relationship to care recipient (%)	Wife (1)	13.6	27.9	$\chi^2(3) = 118.600^{***}$
	Husband (2)	18.3	17.2	
	Daughter (3)	37.5	37.7	
	Son (4)	30.7	17.2	
(B) Care-giving demands:				
Hours per week care-giving	Mean (SD)	7.6 (7.9)	79.8 (45.7)	$t = 40.488^{***}$
Weeks per year care-giving	Mean (SD)	29.3 (21.9)	22.6 (21.7)	$t = 6.336^{***}$

(*Continued*)

Table 1. (*Continued.*)

Variable	Level (code)	Less-intensive care-givers (N = 5,364)	*Very-intensive* care-givers (N = 630)	Test-statistic for group differences[1]
Number of ADL tasks help with (%)	0	46.9	19.8	$\chi^2(2) = 356.925^{***}$
	1	34.4	30.6	
	2	18.8	49.5	
Number of IADL tasks help with (%)	0	1.8	0.6	$\chi^2(7) = 576.600^{***}$
	1	14.0	4.1	
	2	18.2	5.6	
	3	19.5	13.7	
	4	19.0	14.0	
	5	13.7	17.7	
	6	8.9	19.7	
	7	4.8	24.5	
	Mean (SD)	3.40 (1.75)	4.91 (1.78)	$t = 21.339^{***}$
Number of people assisted (%)	One person (1)	62.8	66.6	$\chi^2(2) = 11.148^{**}$
	Two people (2)	26.1	25.6	
	Three or more people (3)	11.1	7.8	
(C) Resources, risks, secondary stressors:				
Work status (%)	Currently employed (1)	62.9	46.8	$\chi^2(1) = 76.935^{***}$
	Not currently employed (2)	37.1	53.2	
Home-ownership (%)	Own (1)	89.3	86.6	$\chi^2(1) = 7.395^{**}$

	Rent (2)	10.7	13.4	
Subjective economic status (%)	Manage very well (1)	46.5	47.8	$\chi^2(3) = 9.500$*
	Manage quite well (2)	33.0	31.2	
	Get by alright (3)	17.4	16.0	
	Not managing well (4)	3.1	5.1	
Number of chronic conditions	Mean (SD)	3.24 (2.40)	3.77 (2.46)	$t = 5.339$***
Social Life Space Index	Mean (SD)	87.28 (16.61)	84.87 (18.07)	$t = 3.269$***
Self-rated general health (%)	Excellent (1)	19.9	14.7	$\chi^2(3) = 16.745$***
	Very good (2)	42.5	37.8	
	Good (3)	29.5	36.2	
	Fair or poor (4)	8.1	11.3	
Marital status (%)	Married/co-habiting (1)	84.3	80.9	$\chi^2(1) = 8.135$**
	Other (0)	15.7	19.1	
Social participation	Annually or never (1)	1.4	2.5	$\chi^2(3) = 8.604$*
	Monthly (2)	13.1	16.2	
	Weekly (3)	69.6	64.9	
	Daily (4)	15.9	16.3	
Functional supports	Mean (SD) on the MOS scale (total score)	84.4 (15.2)	79.5 (18.2)	$t = 6.209$***
Lack companionship	Hardly ever (1)	74.1	61.6	$\chi^2(2) = 55.461$***
	Some of the time (2)	21.3	28.4	
	Most of the time (3)	4.6	10.5	

Notes: 1. Means tested using independent samples *t*-tests (degrees of freedom adjusted for unequal variances as necessary); percentages tested using chi-square tests of independence. SD: standard deviation. ADL: activities of daily living. IADL: instrumental activities of daily living. MOS: Medical Outcomes Study.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

reported to be a significant correlate of care-giver wellbeing (Conde-Sala *et al.*, 2010; Ornstein *et al.*, 2013), no measures are available in the dataset used here.

Information on social support includes four measures. Marital status is measured using a dichotomous variable. Social participation is measured using the frequency of participation in a list of community-related activities (*e.g.* family- or friendship-based activities outside the household, church or religious activities, sports or physical activities with others). Responses include never or yearly, monthly, weekly and daily. The Medical Outcomes Study (MOS) social support scale assesses the receipt of functional social support, including emotional support, instrumental assistance, information, guidance and feedback, personal appraisal support and companionship (Sherbourne and Stewart, 1991). The MOS scale has 19 items (Cronbach's $\alpha = 0.96$ in the present study); scores range from 0 to 100; the higher the score the more support. Here, it is referred to as functional support to distinguish it from the general category of social support. Perceived lack of companionship is assessed with the question: 'How often do you feel you lack companionship?'

Analytic strategy

As an 'analytic sensibility' (Bauer and Scheim, 2019), there is no consensus on the best methods for studying intersectionality (Bauer *et al.*, 2014). Quantitatively, it is typically studied either through the use of interaction terms or by separate analyses of the groups created from the intersection (Bauer and Scheim, 2019; Mena and Bolte, 2019). Interaction terms examine the additional joint contribution to an outcome for those living at the categorical intersection but they do not tell us if there is disadvantage among the intersectional groups on the outcome of interest. A significant bivariate association between membership in the intersectional groups and the outcome variable reveals intersectionality; the groups at the intersection experience the outcomes differently irrespective of the factors that may explain those differences. Analysing intersectional groups separately examines whether similar or different factors are related to the outcome variable. Sub-group analyses can identify modifiable societal factors that may apply differentially to the groups.

Following Bauer and Scheim (2019), intersecting gender–relationship–demand ($2 \times 2 \times 2$) in wellbeing is assessed by comparing the eight intersectional groups on each outcome using one-way analysis of variance, without additional control or explanatory variables. This establishes the existence and magnitude of outcome inequalities. In separate analyses, whether the gender–relationship–demand intersection contributes significantly to depressive symptoms or life satisfaction when other factors are controlled is examined using ordinary least squares (OLS) regression. IVs are entered in three blocks, based both on conceptual relatedness and spatio-temporal considerations (Bauer, 2014; Bauer and Sheim, 2019). The first block assesses the impact of gender (reference group is male), age, education and relationship-to-care-recipient (reference group is child) (Model 1). The second block adds the 2×2 (*i.e.* one degree of freedom) gender × relationship (reference group is sons) interaction term and the primary stressors, care-giving demand variables (separate regression analyses are conducted for hours of care-giving (continuous) and the dichotomous intensity variable) (Model 2). In the third block, the 2 × 2 × 2 (one degree of freedom) gender × relationship × demand (reference group is low-intensity care-giving sons) interaction term together with potential mediating risk and resource variables (care-giver health, socio-economic status and social support) are added. It should be noted that we are not interested in testing a full factorial design of the three main factors of interest here (namely gender, relationship and demand); we do include these as 'main effects' in our regression models, but test only the two interaction effects of interest.

To identify common and unique factors that are related to disadvantage in depressive symptoms and life satisfaction for each of the intersectional groups (Lin *et al.*, 2012; Scott and Siltanen, 2017), the regression models are run within each intersectional group separately (*i.e.* by examining wives, husbands, daughters and sons among less-intensive care-givers and also among *very-intensive* care-givers). Because of the smaller sample sizes for the *very-intensive* intersectional groups (ranging from 97 for sons to 198 for daughters), and concern over sample size given the number of IVs, analyses are run with all IVs and again restricting the number of IVs to accommodate the ten cases per IV rule of thumb. Results are very similar, so the regressions with all IVs are reported but any discrepancies are noted in the tables. Underlying OLS assumptions such as linearity, collinearity and homoscedasticity were checked for all samples; no problems emerged.

All analyses are conducted using SPSS v.26. All descriptive statistics are weighted by the 'trimmed' weights and all relationship analyses by the 'analytic' weights, as per CLSA documentation (CLSA, 2017), to provide a representative sample of middle-aged and older spousal and adult-child care-givers in Canada. Cases with missing data on any of the variables (overall <5%) are deleted listwise within each analysis.

Results

Sample characteristics

Table 1 shows the descriptive statistics for all IVs for both groups of care-givers. Among *very-intensive* care-givers almost two-thirds are female; among less-intensive care-givers approximately half are female and half male. *Very-intensive* care-givers are, on average, three years older than other care-givers (62.5 *versus* 59.5 years) and are only slightly more likely to have either high school or less education and slightly more likely to have a university degree. *Very-intensive* care-givers are much more likely to be wives and much less likely to be sons. The strongest differences are with gender and relationship; *very-intensive* care-givers are more likely to be female and wives than are other care-givers.

Table 1B compares the groups on care-giving demand. *Very-intensive* care-givers provide considerably more hours per week of care on average than other care-givers (79.8 *versus* 7.9); the standard deviation shows that some *very-intensive* care-givers are 24/7 carers (16.2% say they are 24/7 care-givers while among less intensive care-givers almost a third provide <2 hours/week of care). This difference is striking even though *very-intensive* care-giving is defined in terms of hours per week of care. *Very-intensive* care-givers provide, on average, fewer weeks per year of care-giving but are much more likely to provide personal care and assistance with mobility (ADL assistance) and assistance with five or more IADLs. Less-intensive care-givers are more likely not to provide any ADL assistance and to provide assistance with fewer IADLs.

They also are less likely to care for only one person although approximately two-thirds of both groups care for only one person. The strongest differences, not surprisingly, are in hours per week of care and assistance with ADLs and IADLs.

Table 1C compares the groups on potential risks and resources. *Very-intensive* care-givers are more likely to not be employed, to rent rather than own their homes, and to say that they are not managing their financial situation well or they are managing very well. They report more chronic conditions, less mobility and, realistically, are more likely to rate their health as less than very good. *Very-intensive* care-givers are also less likely to be married/co-habiting, report less social participation, less functional support and lack companionship more often. Overall, the strongest differences are evident with regard to employment and companionship. It might be noted that for both groups, over 80 per cent are married and own their own homes; and just under half report that they are managing very well in terms of finances. Both groups score an average of approximately 80 out of a possible 100 on functional support.

Two other variables are non-discriminating and therefore were not included in the analyses, approximately 90 per cent or more are white, and live in urban areas, for both samples. In sum, these spousal and adult-child community-living care-givers are largely well-educated, economically secure and relatively healthy, in addition to being white and urbanite.

Intersectionality between the groups

The mean depressive symptoms and life satisfaction scores for each intersectional sub-group are shown in Figure 1. Significant pairwise group differences are shown in Table 2. *Very-intensive* care-giving wives report the most depressive symptoms, significantly more than all other groups except *very-intensive* care-giving husbands, who report the second most depressive symptoms. Less-intensive care-giving sons report the fewest depressive symptoms, differing significantly from *very-intensive* care-giving wives, husbands and daughters, as well as less-intensive care-giving wives and daughters. Overall, this confirms the expectation that *very-intensive* care-giving wives will be the most disadvantaged and less-intensive care-giving sons the least. The intersectionality among the eight groups is complex, revealing significant differences between various groups. Of note, among *very-intensive* care-givers, depressive symptoms align by relationship (with wives and husbands more disadvantaged) whereas, among less-intensive care-givers, depressive symptoms align by gender (with wives and daughters the most disadvantaged and husbands and sons the least so).

The results differ for life satisfaction (Table 2B). *Very-intensive* care-giving sons are the most disadvantaged but differ significantly only from less-intensive care-giving daughters and sons. Less-intensive care-giving daughters score the highest on life satisfaction, differing significantly from all other groups. The expectation that *very-intensive* care-giving wives will be the most disadvantaged and less-intensive care-giving sons the least disadvantaged is not supported. Intersectionality is evident but the differences between the groups are fewer than was evident for depression. Furthermore, when care-giving is *very intensive*, the groups do not differ from one another; all differences are with less-intensive care-givers. Among *very-intensive* care-givers, the scores do not align by either relationship or gender. Among less-intensive

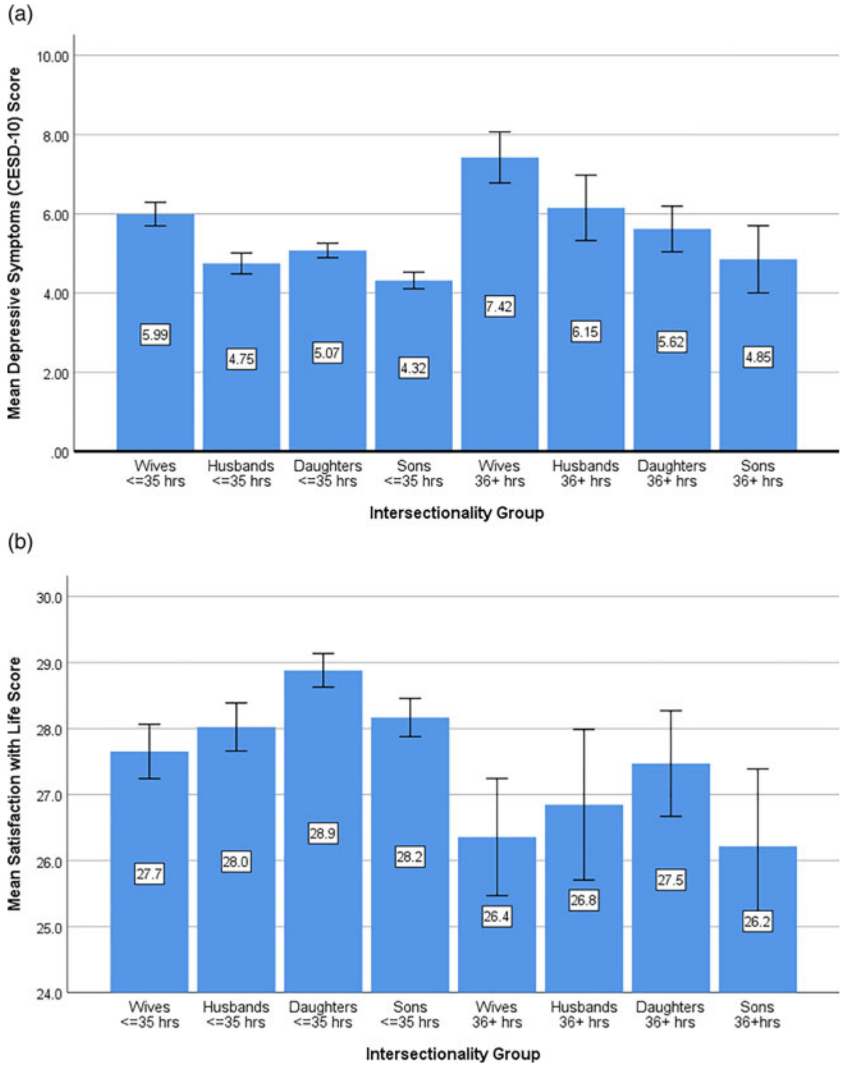

Figure 1. Adjusted means for depression (A) and life satisfaction (B) for gender–relationship–demand intersectionality groups.

Notes: Error bars indicate 95 per cent confidence intervals. *See* Table 2 for statistical significance of pairwise comparisons. CESD-10: Center for Epidemiologic Studies Short Depression Scale. hrs: hours of care-giving.

care-givers for both outcomes, scores align by relationship, with adult children the most advantaged and spouses the least.

Does the intersection contribute significantly to the outcomes?

The results of the regression analyses including interaction terms are shown in Table 3. Looking at depressive symptoms, neither the two-way gender–relationship nor the three-way gender–relationship–demand interaction is significant in any of

Table 2. Intersection of care-giver gender–relationship–demand for depression (upper triangle) and life satisfaction (lower triangle): results of *post-hoc* tests for pairwise differences among group means[1]

Group (mean)	Wives <36 (5.99)	Husbands <36 (4.75)	Daughters <36 (5.07)	Sons <36 (4.32)	Overall <36 (4.84, SD = 4.37)	Wives 36+ (7.42)	Husbands 36+ (6.15)	Daughters 36+ (5.62)	Sons 36+ (4.85)	Overall 36+ (6.38, SD = 5.77)
Wives <36 (27.65)	–	***	***	***	–	**	ns	ns	ns	–
Husbands <36 (28.02)	ns	–	ns	ns	–	***	ns	ns	ns	–
Daughters <36 (28.88)	***	**	–	***	–	***	ns	ns	ns	–
Sons <36 (28.17)	ns	ns	**	–	–	***	***	***	ns	–
Overall <36 (28.48, SD = 6.14)	–	–	–	–	–	–	–	–	–	***
Wives 36+ (26.36)	ns	*	***	**		–		***	***	–
Husbands 36+ (26.85)	ns	ns	*	ns		ns	–	ns	ns	–
Daughters 36+ (27.47)	ns	ns	*			ns	ns	–	ns	–
Sons 36+ (26.22)	ns	ns	***	ns		ns	ns	ns	–	–
Overall 36+ (26.98, SD = 6.77)	–	–	–	–	***	–	–	–	–	–

Notes: 1. Group means and standard deviations (SD) are weighted using Canadian Longitudinal Study on Aging-provided 2017 analytical weights. Possible range for depression scores is 0 to 30 (higher scores worse); for life satisfaction 5 to 35 (higher scores better). <36: less than 36 hours of care-giving. 36+: 36 or more hours of care-giving.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns: not significant.

Table 3. Standardised regression coefficients from multiple regression models for all care-givers

	Depressive symptoms (N = 6,066)[1]			Life satisfaction (N = 6,116)[1]		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Background factors:						
Age	−0.02	−0.04*	−0.08***	0.06***	0.08***	0.07***
Education	−0.10***	−0.09***	−0.03*	0.08***	0.08***	−0.01
Female	0.10***	0.08***	0.07***	0.02	0.07***	0.06***
Spouse	0.10***	0.09***	0.06***	−0.09***	−0.06**	−0.04*
Female × Spouse		0.03	0.00		−0.05**	−0.04*
Care-giving demands:						
Hours per week		0.06***	0.02		−0.07***	−0.02
(Intensity)[2]		(0.04**)	(0.03*)		(−0.05***)	(−0.01)
Weeks per year		0.05**	0.00		−0.07***	−0.02*
ADL tasks		0.00	0.01		0.01	0.01
IADL tasks		0.03*	0.01		−0.07***	−0.06***
People assisted		0.03*	0.04***		0.01	−0.00
Gender × Relation × demand			0.02			−0.01
Risks/resources:						
Chronic conditions			0.13***			0.02
Mobility			−0.04**			0.08***
General health			0.21***			−0.22***

(*Continued*)

Table 3. (*Continued.*)

	Depressive symptoms (N = 6,066)[1]			Life satisfaction (N = 6,116)[1]		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Work status			0.03*			−0.02
Home-ownership			−0.00			−0.03*
Subjective economic status			0.11***			−0.21***
Marital status			0.06***			0.02
Social participation			−0.03**			0.04***
Functional support			−0.19***			0.19***
Lack companionship			0.21***			−0.23***
Model summary:						
Adjusted R^2	0.03	0.04	0.30	0.01	0.03	0.37
F-value	44.36***	24.48***	127.01***	21.27***	20.09***	169.84***
df	4, 6,062	10, 6,056	21, 5,045	4, 6,112	10, 6,106	21, 6,095

Notes: 1. Regression model parameter estimates were obtained with data weighted by the ‘analytical’ weights provided by the Canadian Longitudinal Study on Aging (CLSA) (*see* CLSA, 2017). The N values reported here are weighted as well. 2. In a separate regression analysis, the dichotomous Intensity (very, less) variable replaced hours of care-giving. The results are shown in brackets for the Intensity variable. Estimates for all other variables come from the model with hours, not Intensity in it, although results are very similar when Intensity is used. ADL: activities of daily living. IADL: instrumental activities of daily living. df: degrees of freedom.

Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

the models. While neither contributes significantly to depressive symptoms, this does not negate the differential experiences of the intersectional groups shown in Table 2. Very little of the total variance in the model is explained until risks and resources are added, when it increases from $R^2 = 0.03$ in Model 1 to $R^2 = 0.30$ in Model 3. Gender and relationship are significantly correlated, with women and spouses reporting more depressive symptoms in all models. Those with less education have more depressive symptoms although this relationship weakens when risks and resources are added in Model 3. The greater the demands associated with care-giving – that is, more hours per week of care-giving (or alternatively the greater the care-giving intensity), more weeks per year of care-giving, more IADL tasks undertaken and more people assisted, the more depressive symptoms reported, until risks and resources are added. In Model 3, only the number of people assisted (and care-giving intensity) remain significant. The more people assisted and the greater the care-giving intensity the more depressive symptoms, the former becoming slightly stronger in Model 3, suggesting a suppression effect.

Among potential risks and resources, those with more chronic conditions, less mobility and worse general health report more depressive symptoms. Those not employed also report more depressive symptoms. Home-ownership is the only potential resource not related to depressive symptoms. Those managing their finances less well are more likely to report more depressive symptoms as are those who are married, with lower levels of social participation, less functional support and who lack companionship. General health, functional support and companionship are the strongest correlates. Having these resources to draw upon plays a strong mediating role in the relationship between care-giving demand and depressive symptoms.

In terms of life satisfaction, once again, little of the total variance is explained until the potential resources are added (increasing from $R^2 = 0.01$ and 0.03 in Models 1 and 2 to $R^2 = 0.37$ in Model 3). Here, the two-way gender–relationship interaction is significant and remains so in Model 3 – daughters have the highest life satisfaction. The three-way interaction is not significant. Women and spouses have lower life satisfaction, as do those who are younger and with less education. Education, however, is not significant when potential risks and resources are added. The more hours of care-giving (and the greater the intensity), the more weeks per year care is provided and the more IADL tasks performed, the lower the life satisfaction. However, the impact of hours per week (and intensity) is mediated by risks and resources and is not significant in the final model. The number of weeks per year is less strongly related in the final model, but the relationship with the number of IADL tasks performed remains similar throughout. Those with less mobility, worse perceived health, who own their own homes, who report poorer subjective economic status, have less social participation, less functional support and lack companionship are more likely to report less life satisfaction. The strongest correlates are general health, subjective economic status, functional support and companionship, that is, the resources available to the care-giver.

For both depressive symptoms and life satisfaction, gender and relationship are significant correlates explaining some of the disadvantage, albeit they are not strongly related. Similarly, some care-giving demands are weak correlates. Further, which demands matter varies depending on the outcome examined. For both outcomes, resources are of prime importance: perceived health, functional support and companionship for both outcomes, in addition to economic situation for life satisfaction.

Do different intersectional groups reveal unique factors related to disadvantage?

Are the same factors related to poorer outcomes for each of the groups? Tables 4 and 5 report the results for depressive symptoms for each intersectional category. For all groups of less-intensive care-givers (Table 4), little of the variance is explained in Models 1 or 2 (1–2%) by only the background characteristics and care-giving demands. When potential resources are added to the model, considerably more of the variance is explained (from 25% among wives to 32% among husbands). Two variables are unrelated across the groups: the number of hours per week providing care and home-ownership. Being older is related to more depressive symptoms in all groups. Less education is also related to more depressive symptoms in all groups but it is no longer significant once risk and resources variables are taken into account. Among all groups, two measures of social support (having less functional support and lacking companionship) and two health measures (more chronic conditions and worse perceived health), are among the strongest correlates of having more depressive symptoms.

Other variables show differences between the groups. Among husbands, providing care for fewer weeks per year and among sons, providing care with more IADLs, is related to having more depressive symptoms (both showing suppression effects). Among wives, number of weeks per year spent providing care is significantly and positively related to depressive symptoms in Model 2 but not in Model 3. Among daughters, providing care with more ADL tasks and assisting more people are unrelated to having more depressive symptoms in Model 2 but both relationships are significant in Model 3, suggesting suppression effects. On the other hand, the relationship between providing care for more IADL tasks and depressive symptoms is mediated by other risks and resources. Less mobility is related to more depressive symptoms among wives, husbands and sons. Being employed is related to more depressive symptoms only among wives and husbands. Among daughters, being married and having less social participation is also related to more depressive symptoms. Those who report poorer subjective economic status also report more depressive symptoms among all groups except wives, for whom it is not a significant correlate. The strongest correlates are general health (among all groups), functional support (among husbands and daughters) and companionship (among wives and sons).

In sum, among less-intensive care-givers, these analyses reveal the important mediating roles of health, financial and social resources for all groups. However, they also reveal important differences in the factors related to disadvantage. Wives are distinctive in the lack of importance of either care-giving demands or their subjective economic status. Which care demands are significant for husbands, daughters and sons vary by group.

Among *very-intensive* care-givers (Table 5) the findings differ. The total variance explained again increases considerably in Model 3, where R^2 ranges from 0.25 and 0.26 per cent among wives and daughters to 0.37 per cent among sons and 0.55 per

Table 4. Standardised regression coefficients for separate regression models for wives, husbands, daughters and sons: depressive symptoms – less-intensive care-givers

	Wives (N = 757)			Husbands (N = 1,021)			Daughters (N = 2,023)			Sons (N = 1,717)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Background factors:												
Age	0.02	0.00	−0.14**	−0.08*	−0.08*	−0.14***	−0.03	−0.03	−0.06**	−0.03	−0.04	−0.05*
Education	−0.09**	−0.09*	−0.06	−0.13***	−0.13***	−0.03	−0.08***	−0.09***	−0.02	−0.10***	−0.10***	−0.02
Care-giving demands:												
Hours per week		0.01	0.03		−0.03	−0.05		0.01	0.01		0.05	0.02
Weeks per year		0.11**	0.03		0.05	−0.07*		−0.01	0.01		0.03	−0.01
ADL tasks		−0.00	−0.02		−0.01	0.01		0.03	0.04*		−0.01	0.00
IADL tasks		−0.07	−0.07		0.06	0.03		0.06*	0.02		0.05	0.05*
People assisted		0.06	0.02		0.05	0.03		0.01	0.04*		0.04	0.03
Risks/resources:												
Chronic conditions			0.12***			0. 16***			0.14***			0.16***
Mobility			−0.08*			−0.09***			0.02			−0.05*
General health			0.19***			0.23***			0.21***			0.25***
Work status			0.09*			0.08*			0.03			0. 01
Home-ownership			−0.05			0.03			0.01			−0.02
Subjective economic status			0.04			0.16***			0.14***			0.09***

(*Continued*)

Table 4. (*Continued.*)

	Wives (N = 757)			Husbands (N = 1,021)			Daughters (N = 2,023)			Sons (N = 1,717)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Marital status			−0.03			−0.05			0.10***			0.02
Social participation			−0.01			−0.03			−0.05*			−0.03
Functional support			−0.18***			−0.20***			−0.24***			−0.16***
Companionship			0.21***			0.14***			0.18***			0.25***
Model summary:												
Adjusted R^2	0.01	0.02	0.25	0.02	0.02	0.32	0.01	0.01	0.30	0.01	0.02	0.31
F-value	3.98*	2.77**	15.77***	11.19***	4.45***	29.33***	7.30***	4.08***	53.05***	8.84***	4.90***	45.45***
df	2, 755	7, 750	17, 740	2, 1,019	7, 1,014	17, 1,004	2, 2,021	7, 2,016	17, 2,006	2, 1,715	7, 1,710	17, 1,700

Notes: Regression model parameter estimates were obtained with data weighted by the ‘analytical’ weights provided by the Canadian Longitudinal Study on Aging (CLSA) (*see* CLSA, 2017). ADL: activities of daily living. IADL: instrumental activities of daily living. df: degrees of freedom.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5. Standardised regression coefficients for separate regression models for wives, husbands, daughters and sons: depressive symptoms –*very-intensive* care-givers

	Wives (N = 147)			Husbands (N = 99)			Daughters (N = 198)			Sons (N = 97)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Background factors:												
Age	0.17*	0.09	0.11	−0.24*	−0.24*	−0.05	0.10	0.08	0.08	−0.06	−0.20[2]	−0.14
Education	−0.10	−0.06	−0.02	0.00	0.04	0.05	0.01	0.04	0.02	−0.01	−0.02	0.00
Care-giving demands:												
Hours per week		0.02	0.01		0.05	0.07		0.24***	0.17**		0.16	0.08
Weeks per year		0.05	−0.01		0.03	−0.12		0.17*	0.16*		0.16	0.28**
ADL tasks		−0.02	−0.04		−0.14	−0.20*		0. 02	−0.04		0.30**	0.20*
IADL tasks		0.19*	0.08		0.19[1]	0.16		−0.17[1]	−0.15		−0.04	−0.02
People assisted		−0.19*	−0.08		0.19	0.05		0.09	0.12		−0.03	0.04
Risks/resources:												
Chronic conditions			−0.07			0.07			0.07			0.03
Mobility			−0.06			0.10			−0.07			−0.20*
General health			0.14			0.29**			0.14*			0.22*
Work status			0.02			−0.09			−0.09			0.01
Home-ownership			0.14			−0.19*			0.07			−0.16
Subjective economic status			0.10			0.20*			0.07			0.27**

(*Continued*)

Table 5. (*Continued.*)

	Wives (N = 147)			Husbands (N = 99)			Daughters (N = 198)			Sons (N = 97)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Marital status			0.11			0.02			0.14*			0.33*
Social participation			–0.08			–0.03			0.05			0.14
Functional support			–0.17			–0.23*			–0.16			–0.16
Companionship			0.31**			0.26*			0.29***			0.38***
Model summary:												
Adjusted R^2	0.03	0.07	0.25	0.06	0.14	0.55	0.00	0.07	0.26	–0.02	0.06	0.37
F-value	3.32*	2.54*	3.84***	2.87*	2.14*	5.92***	1.05	2.96**	5.07***	0.17	1.84	4.30***
df	2, 145	7, 140	17, 130	2, 97	7, 92	17, 82	2, 196	7, 191	17, 181	2, 95	7, 90	17, 80

Notes: Regression model parameter estimates were obtained with data weighted by the 'analytical' weights provided by the Canadian Longitudinal Study on Aging (CLSA) (*see* CLSA, 2017). 1. In the regression model with a restricted number of variables, instrumental activities of daily living (IADL) has β = 0.21 and $p < 0.05$ in Model 2, it does not remain significant in Model 3. 2. In the regression model with a restricted number of variables age has β = –0.27 and $p < 0.01$; in the regression with all variables, reported above, age $p < 0.07$. In both the restricted and full regressions, age is not significant in Model 3. ADL: activities of daily living. df: degrees of freedom.

Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

cent among husbands. For all groups, age is not significantly related in the final model. The importance of care-giving demands varies between the groups: among wives, the fewer people they assist (in Model 2 but not Model 3); among husbands, the more IADL tasks they assist with (approaches significance in Model 2 but is not significant in Model 3); among daughters, the more hours per week and the more weeks per year they spend care-giving, even when other risks and resources are considered; and among sons the more weeks per year care-giving and the more ADL tasks they help with (the former revealing a suppression effect and the latter a mediating effect of resources), the more depressive symptoms. Among husbands, daughters and sons, but not wives, the worse their general health, the more depressive symptoms. Among sons only, those with less mobility and among husbands only, those who own their homes and who have less functional support report more depressive symptoms. Among daughters and sons, those who are married and among all four groups those lacking companionship report more depressive symptoms. The strongest correlate among wives and daughters is companionship, among husbands, health and support, and among sons weeks per year care-giving, subjective economic status and companionship. Economic status and ADL tasks emerge for both husbands and sons but not wives or daughters. Marital status and weeks per year care-giving emerge for daughters and sons but not wives or husbands. Care-giving demands are stronger correlates of disadvantage for all groups of *very-intensive* care-givers than less-intensive care-giver groups except wives. Among wives, none of the care demands are significant for either group. The distinctiveness of the groups is clear, revealing greater heterogeneity among *very-intensive* than among less-intensive care-givers.

The results for life satisfaction among less-intensive care-givers (Table 6) reveal a similar amount of variance explained for all groups (ranging from 34% among wives to 39% among daughters), reaching these levels only after resources are added in Model 3. Among all groups, the importance of resources is evident: care-givers who have worse mobility, perceive their health to be worse, have less economic security, report having less functional support and lack companionship are also likely to have lower life satisfaction.

Other factors are differentially related for each group. Only among wives does the significance of age (being older related to lower life satisfaction) disappear when care-giving demands are entered and only among wives is education unrelated to life satisfaction. In contrast, for husbands, daughters and sons, those who are younger (reverse that for wives) and with higher education (until resources are added when it is no longer significant) report lower life satisfaction. Mediating effects are also evident when examining care demands. Among wives and husbands, the relationship with number of weeks per year care-giving and among daughters the relationship with IADL tasks all disappear when resources are added. Among husbands, the more IADL tasks undertaken and among daughters the more hours per week care-giving, the lower their life satisfaction. Among sons, none of the care-giving demands are significant in any of the models. Only among husbands are those who are not employed more likely to report lower life satisfaction; among husbands and sons, those with more chronic conditions are more likely to report lower life satisfaction. Only among daughters are those who rent

Table 6. Standardised regression coefficients for separate regression models for wives, husbands, daughters and sons: life satisfaction – less-intensive care-givers

	Wives (N = 763)			Husbands (N = 1,021)			Daughters (N = 2,054)			Sons (N = 1,732)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Background factors:												
Age	−0.08*	−0.03	−0.02	0.18***	0.20***	0.20***	0.04*	0.05*	0.04*	0.08***	0.08***	0.06**
Education	0.05	0.04	−0.02	0.11***	0.08**	−0.03	0.08***	0.08***	−0.01	0.08***	0.08***	−0.00
Care-giving demands:												
Hours per week		0.01	−0.01		−0.06	−0.03		−0.05*	−0.04		−0.03	−0.00
Weeks per year		−0.17***	−0.08*		−0.13***	−0.01		0.01	−0.02		−0.03	0.01
ADL tasks		−0.07	−0.02		0.01	−0.00		0.05	0.02		−0.02	−0.04
IADL tasks		−0.01	−0.02		−0.12**	−0.10**		−0.07**	−0.04		−0.02	−0.02
People assisted		−0.02	0.00		−0.00	0.02		0.02	−0.02		−0.04	−0.03
Risks/resources:												
Chronic conditions			0.02			−0.06*			0.02			−0.05*
Mobility			0.10**			0.09***			0.07***			0.06**
General health			−0.26***			−0.22***			−0.22***			−0.24***
Work status			0.03			−0.08*			−0.01			−0.02
Home-ownership			0.05			−0.01			−0.05**			−0.04
Subjective economic status			−0.17***			−0.25***			−0.20***			−0.20***
Marital status			−0.02			0.06*			0.02			0.02

Social participation			0.06*			0.03			0.03			0.03
Functional support			0.21***			0.17***			0.20***			0.19***
Companionship			−0.22***			−0.18***			−0.25***			−0.25***
Model summary:												
Adjusted R^2	0.01	0.03	0.34	0.04	0.07	0.37	0.01	0.01	0.39	0.01	0.01	0.38
F-value	4.10*	4.79***	23.89***	21.03***	12.56***	35.77***	7.45***	4.85***	76.52***	10.52***	4.52***	62.60***
df	2, 761	7, 756	17, 746	2, 1,019	7, 1,014	17, 1,004	2, 2,052	7, 2,047	17, 2,037	2, 1,730	7, 1,725	17, 1,715

Notes: Regression model parameter estimates were obtained with data weighted by the 'analytical' weights provided by the Canadian Longitudinal Study on Aging (CLSA) (*see* CLSA, 2017). ADL: activities of daily living. IADL: instrumental activities of daily living. df: degrees of freedom.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

rather than own their homes and only among wives is less social participation related to lower life satisfaction.

To summarise, once again, the importance of risks and resources, in this instance health, socio-economic circumstances and social support, is confirmed. Again, there are also differences between the intersectional groups that demonstrate the differential importance of the various factors for life satisfaction. Care-giving demands, albeit different ones, matter for wives and husbands but not adult children.

Results for *very-intensive* care-givers appear in Table 7. The percentage of the total variance explained ranges from 19 per cent among husbands to 38 per cent among sons in the final model. Fewer factors are significantly related and greater heterogeneity between the groups emerges than was the case for less-intensive care-givers. None of the predictors are significant across all four groups. Among husbands, only weeks per year care-giving are significant in Model 2 and no factors emerge in Model 3. Among wives, providing care for more weeks per year and among sons, assisting fewer people are related to lower life satisfaction. Among wives, daughters and sons, the worse their perception of their economic status, the lower their life satisfaction: the only factor common among the three groups. Among wives and daughters, lacking companionship is also related to lower life satisfaction; among daughters having less functional support is also related to lower life satisfaction. The data also reveal the mediating role of risks and resources in explaining the relationships between education (among wives) and various care demand indicators (for all four groups) and life satisfaction. Among wives, care-giving demands, health, economic status and companionship are the strongest correlates; among daughters it is two support indicators and among sons it is their perceived economic situation. These data demonstrate the heterogeneity of the intersectional groups and the diversity of experience that is related to life satisfaction.

What happens when the definition of very-intensive *care-giving changes?*

As noted, the definition of 'very intensive' is arbitrary. The analyses were therefore rerun using 20+ hours/week of care-giving as an alternative definition (data not shown here). For both outcomes, less-intensive care-givers in each intersectional group report fewer depressive symptoms and higher life satisfaction (not necessarily by much). Intersectionality is still evident, with significant differences between the groups, and *very-intensive* care-givers still do not differ significantly from one another on life satisfaction. In the full sample regression with interaction terms, the three-way interaction term remains non-significant. However, for depressive symptoms, the dichotomous intensity variable is no longer significant, and for life satisfaction, it becomes significant in Model 3 (in both instances differing from the results evident among those reporting 36+ hours of care-giving). The results for those providing <20 hours/week of care are virtually the same as for those providing <36 hours/week of care for both depressive symptoms and life satisfaction. However, among *very-intensive* care-givers, the results are very similar only among husbands for depressive symptoms and only among wives for life satisfaction. For depressive symptoms, among wives, daughters and sons, all three

Table 7. Standardised regression coefficients for separate regression models for wives, husbands, daughters and sons: life satisfaction – *very-intensive* care-givers

	Wives (N = 148)			Husbands (N = 98)			Daughters (N = 197)			Sons (N = 97)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Background factors:												
Age	−0.06	0.14	0.10	0.04	0.18	0.03	−0.01	0.03	0.02	0.07	0.11	−0.04
Education	0.20*	0.13	0.06	0.12	0.06	0.05	−0.09	−0.12	−0.07	0.00	−0.07	−0.15
Care-giving demands:												
Hours per week		0.07	0.15*[1]		0.02	0.05		−0.18**	−0.12		−0.03	0.06
Weeks per year		−0.32***	−0.27**		−0.35**	−0.22[2]		−0.18*	−0.11		−0.13[3]	−0.02
ADL tasks		0.07	0.10		0.02	0.15		0.07	0.09		−0.10	0.03
IADL tasks		0.10	−0.08		0.10	−0.08		0.05	0.00		−0.18[3]	−0.11
People assisted		−0.19*	0.06		−0.07	0.13		−0.03	−0.05		0.28**	0.22*
Risks/resources:												
Chronic conditions			0.13			0.01			−0.04			0.01
Mobility			−0.07			0.17			0.06			0.07
General health			−0.27***			−0.21[2]			−0.14			−0.14
Work status			−0.18			0.07			0.04			−0.07
Home-ownership			−0.02			0.10			0.03			−0.07
Subjective economic status			−0.28***			−0.11			−0.14*			−0.46***
Marital status			−0.08			−0.03			0.05			0.10
Social participation			−0.05			0.11			0.12			0.01

(*Continued*)

Table 7. (*Continued.*)

	Wives (N = 148)			Husbands (N = 98)			Daughters (N = 197)			Sons (N = 97)		
Independent variables	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Functional support			0.14			0.09			0.18*			0.11
Companionship			−0.23**			−0.16			−0.19**			−0.03
Model summary:												
Adjusted R^2	0.03	0.14	0.34	0.00	0.07	0.19	0.00	0.04	0.32	0.00	0.08	0.38
F-value	3.47*	4.49***	5.45***	0.81	2.03	2.33**	.82	2.22*	6.40***	0.22	2.21*	4.51***
df	2, 146	7, 141	17, 131	2, 96	7, 91	17, 81	2, 195	7, 190	17, 180	2, 95	7, 90	17, 80

Notes: Regression model parameter estimates were obtained with data weighted by the 'analytical' weights provided by the Canadian Longitudinal Study on Aging (CLSA) (*see* CLSA, 2017). 1. In the regression model with a restricted number of independent variables, number of hours providing care per week has $\beta = 0.13$, $p < 0.08$. 2. In the regression model with a restricted number of independent variables, both number of weeks per year care-giving and general health are significant ($\beta = -0.29$, $p < 0.01$ and $\beta = -0.30$, $p < 0.01$, respectively), whereas above they approach but do not quite reach significance ($p = 0.09$ and $p = 0.06$), respectively. 3. In the regression with a restricted number of variables, both number of weeks care-giving ($\beta = -0.22$, $p < 0.05$) and number of instrumental activities of daily living (IADL) tasks ($\beta = -0.19$, $p < 0.05$) were significant in Model 2 but not Model 3. ADL: activities of daily living. df: degrees of freedom.
Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

types of resources (health, economic situation and social support) are more important than among those providing care 36+ hours/week. For life satisfaction among husbands, daughters and sons, resources again are important. That is, the lower the bar for defining *very-intensive* care-giving, the less distinctive that group becomes from less-intensive care-givers, not surprisingly. When care-giving is even more intensive, the mediating role of risks and resources is less important for most intersectional groups.

Discussion and conclusions

The spousal and adult-child community-living care-givers studied here include those providing any type or level of care. They are largely well-educated, economically secure and relatively healthy, in addition to being white and urbanite. In addition, over 80 per cent are married and own their own homes; and just under half report that they are managing very well economically. They have relatively high functional support. However, *very-intensive* care-givers are more likely to be female, slightly older and to be wives than are other care-givers and, not surprisingly, are more likely to provide more hours per week of care, to assist with ADLs, to be not working and to lack companionship.

Focusing on the gender–relationship–demand intersection, an intersectionality paradigm and the Stress Process Model of care-giving were drawn upon. The first research question, asking whether there is evidence of inequality in depressive symptomatology and life satisfaction when comparing the intersectional groups, is answered in the affirmative (more so for depressive symptoms than life satisfaction). *Very-intensive* care-giving wives are the most disadvantaged in terms of depressive symptoms whereas less-intensive care-giving sons are the most advantaged. Life satisfaction shows fewer and weaker differences between the groups that disappear entirely among the four *very-intensive* care-giving groups. When care-giving is *very-intensive*, any advantage of belonging to one group over the other fades.

The apparent discrepancy between depressive symptoms and life satisfaction among less-intensive care-giving daughters (they report the highest levels of life satisfaction while simultaneously reporting moderately high levels of depressive symptoms) is not unknown in the literature. Pristavec (2019) notes that care-givers can have both positive and negative experiences even at high levels of care. Further, Chappell *et al.* (2015) find that care-giving daughters report relatively high burden and yet have high self-esteem, which they interpret as an indication that although care-giving is burdensome, it is not central to their self-identity. These findings speak to the multi-dimensionality of wellbeing.

The second research question asks whether the gender–relationship–demand intersection explains disparities in the outcomes. It does not. The three-way intersection is not a statistically significant contributor to advantage or disadvantage among the groups. Rather, for both outcome measures, potential resources, especially the care-giver's perceptions of their health, their functional support and companionship are among the strongest correlates, often mediating the importance of care-giving demands. Which care demands are important varies by outcome, with the number of people assisted important throughout for depressive symptoms and

IADL for life satisfaction with neither mediated by resources. The varying importance of different demands supports findings by Cohen *et al.* (2017) who note that each aspect of care-giving intensity impacts care-giver quality of life uniquely, and Pinquart and Sörensen's (2011) review that finds differences for depressive symptoms and psychological wellbeing depending on the aspect of care-giving examined.

The third research question asks whether the salience of the factors related to wellbeing differs between the intersecting groups. When examining the context of being a care-giver, there is both commonality and differentiation of experience related to having disadvantaged depressive symptoms or life satisfaction. In terms of depressive symptoms, for less-intensive care-givers, the mediating role of health and social support cannot be understated. There are also factors that differentiate the experience across the groups. For wives, neither the demands of care-giving nor their economic situation are important for depressive symptoms. When care-giving is *very intensive*, the situation changes, revealing much more heterogeneity across the groups, with the only correlate common to all four groups being companionship and care-giving demands increasing in importance for all except wives. The role of resources, while still important, is less for all four groups. Economic status remains important only for husbands and sons, suggesting the traditional male bread-winner role is still influential.

The context of care-giving is different for life satisfaction than for depressive symptoms and also varies between intersectional groups. Among less-intensive care-givers, the primary importance of resources is again evident, both as strong correlates and for their mediating effects. Care-giving demands emerge as most important for wives and husbands; resources mediate various demands for all groups except sons for whom they are unimportant. *Very-intensive* care-givers share no correlates. Resources once again mediate demands, although for wives and sons, demands (albeit different demands) are important even after taking resources into account.

The sub-group analyses for both outcome measures reveal gender–relationship–demand intersectionality in the different aspects of their experience that are associated with disadvantaged depressive symptoms and life satisfaction. Where one is located at that intersection translates into different life experiences. This is evident even though, for example, *very-intensive* care-giving wives, husbands, daughters and sons do not differ significantly in their overall level of life satisfaction. The findings reveal the diversity of experiences when gender, relationship-to-care-recipient and care demands intersect in the lives of care-givers and thus attest to the value of an intersectional perspective applied to care-giving. They also draw attention to the value of examining cross-sectional data without necessarily imputing causality in furthering our understanding of the care-giving experience through multivariate sub-group analyses. They indicate the value of analysing more than what are commonly considered outcomes, as diversity of experience can be present when outcomes are similar between groups. An intersectional perspective provides a framing for pursuing one's research questions that suggests the pursuit of understanding the complexity of lives requires all of our methodological tools and that quantitative analyses are an important part of the toolkit but certainly not the only one. Additionally, this study attests to the importance of using multiple quantitative approaches to studying intersectionality.

The differential findings for less-intensive and for *very-intensive* care-givers point to a potential reason for some of the inconsistent findings in the literature and for the need for further study of the role that amount of care plays in the lives of different types of care-givers. If studies examining care-giving characterise their samples by hours of care provided, the reader can assess whether the care-givers are providing little or much care. If sufficient research exists, there is need for a systematic review of existing studies based on amount of care-giving and, if possible, the various indicators of care demand.

Our analyses also point to the importance of not generalising from one domain or indicator of wellbeing to the totality. The differences evident between depressive symptoms and life satisfaction alert us to the likelihood that other domains of wellbeing, whether it be self-esteem, anxiety, psychological wellbeing or others, will unveil findings different from these. The plethora of domains and measures in the literature poses challenges to generalisation.

Policy implications

These findings have important policy implications. They point to the need for policy to be sufficiently flexible for services to vary depending on the individual's situation and for assessors to examine more than a client's objective situation (*e.g.* their economic situation, care-giving demand, *etc.*). They must also elicit the care-giver's perceived needs because they will vary even though the objective situation may be similar. Only the care-giver knows what is impacting their wellbeing, whether it be types of care demand, the hours they put in, their worries about finances or other factors. Assessors also need to recognise that wellbeing is multifaceted and that care-givers can feel differently in different areas of wellbeing.

For less-intensive care-givers, it is important to look beyond providing help with tasks (although this too might be important) to consider support in maintaining the care-giver's health, ensuring companionship and support from others in their network, and, if warranted, subsidies for the receipt of services. One of the limitations of most health-care systems is their insularity, not reaching beyond the services they provide to assist in linkages with the third sector in the care-giver's community that could provide needed resources beyond instrumental support to include such things as companionship, nutritious food and encouragement to exercise, all especially important to help mediate the demands of care-giving. The challenge is greater among *very-intensive* care-givers as the mediating role of resources is less and there is even greater variability between wives, husbands, daughters and sons in the factors related to their wellbeing. For assessors, it will mean great skill and care listening to the care-giver to understand how they can be assisted.

Limitations

The middle-aged and older spousal and adult-child care-givers studied here are largely well-educated, economically secure, relatively healthy, white and urbanite. Consequently, the findings may not apply in contexts where care-givers differ substantially from this profile. This study does not include care-giving from extended family members or non-family persons. Nor were those younger than age 47 or older than 88 included. Our analyses also do not unravel the diversity that no doubt characterises each intersectional group – a question for future research that could be pursued qualitatively and/or quantitatively provided the sample size of the group is sufficiently large. The data are cross-sectional; causality cannot be imputed nor reciprocal causality determined. They come from survey data not designed to study care-giving *per se* so many potentially important factors remain unexplored (including, but not limited to, race, the health of care recipients, and prior and current quality of relationships with care recipients). Additionally, they provide a snapshot in time and say nothing about how depressive symptoms and life satisfaction change over the course of the care-giving experience.

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