ORIGINAL PAPER

Valuing the Contributions of Family Caregivers to the Care Economy

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Abstract

The purpose of this paper is to estimate the monetary value of Canadians' family care work, to highlight inequalities within the family care sector and place this work within the care economy. Using Statistics Canada's 2018 General Social Survey, we estimated the replacement cost of the 5.7 billion hours of respondents' care work at between $97.1 billion and $112.7 billion. We used descriptive, backward stepwise regression and dominance analyses to examine the distribution of care responsibilities among caregivers. Caregivers comprised 22.1% of the sample (6.8 million Canadians). Living arrangement explained most (81-83%) of the variance in the value of unpaid care work, followed by generation (14-15%), income (2%) and gender (1-2%). These findings provide powerful evidence of the economic value of family care work and of the inequalities among family caregivers in the magnitude of their contributions. Monetizing the value of family care makes it more visible, locates it in the context of the broader care economy and establishes its relationship to the much more visible and valued realm of paid care work. This contextualization also responds to global action plans and resolutions urging governments to create systems of long-term and continuing care for people with chronic conditions and disabilities rather than imposing sole responsibility on unpaid caregivers.

Keywords Care economy · Family caregiving · Replacement cost of unpaid work · Value of familyCare work

Introduction and Rationale

Care provided by family members and friends[1] has long been part of discussions about population ageing and approaches to supporting those with chronic health problems. In Canada, family caregiving first gained prominence almost 25 years ago with a Statistics Canada report that marked the first national survey of family care to older adults (Keating et al., 1999). Interest in family care in Canada and globally has remained high and has fostered the creation of an extensive body of knowledge about its magnitude and impact.

There is agreement across countries (Cès et al., 2019; Keating, 2022) and across care receiver conditions (Albrecht et al., 2016; Im et al., 2019; Peña-Longobardo & Oliva-Moreno, 2015; Queluz et al., 2020) that the volume of family care is extensive. Researchers have documented family caregivers' contributions, including the type of care tasks they do, and the time they spend on care work (Holland, 2022; Keating et al., 2014). While often positioned as laudable, there is growing evidence of the negative social, health and financial impacts of care on family carers, especially those who already are marginalized by socioeconomic status, gender or age (Duncan et al., 2020; Kokorelias et al., 2020; Li et al., 2022; Stajduhar et al., 2020). Despite these decades of research documenting the importance of family care, moving care from a private, family responsibility to a societal issue deserving of public action continues to be immensely challenging (Friedman et al., 2019; Funk & Hounslow, 2021).

Recent international declarations on ageing now position social care[2] as a global priority. They urge nations to

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[1] Referred to throughout as family care.

[2] Social care is taken to include residential care, home care and community-based care (Humphries, 2022).

develop formal systems and services so that families are not overtaxed with sole responsibility for care (see for example, The UN Decade of Healthy Ageing Action Plan, 2020). They also declare a "care crisis", a term increasingly used to describe the tenuous position of family caregivers (Pearson & Elson, 2015) who are held responsible because of increasing care needs of an ageing population and the chronic underfunding of formal care services (Keating, 2022). There is risk to the sustainability of the family care sector and, in turn, the formal care system that depends so heavily on family care labor (Humphries, 2022).

We argue that the reason for this impasse between global admonitions and local action on family care does not rest in lack of knowledge about the amount of family care, the rising numbers of family carers or the negative impacts on those who provide the bulk of care. As suggested above, these have been well-documented. Rather, as researchers who have been working on issues related to family care for more than 30 years, this study is motivated by our belief that the 'care crisis' will be intractable as long as it is remains firmly in the "informal" economy. As feminist economists have long argued, productive work that is not accounted for in systems of national accounts, nor as part of the GDP of a country, is invisible work (Folbre, 2018). Based on their review of the most recent decade of research on kin work, Perry-Jenkins and Gerstel (2020) have argued that lack of attention to factors that marginalize some carers has rendered inequalities in the distribution of care invisible.

We take up this challenge by generating national estimates of the monetary value of the care work of Canadian family caregivers, thus documenting their financial contributions to the Canadian economy. We frame our analyses within Statistics Canada's definition of the care economy: that sector of the broader economy comprising the provision of paid and unpaid care work that supports the physical, psychological and emotional needs of care-dependent persons (Badets et al., 2023). We highlight inequalities within the family care sector, providing new evidence of those whose financial contributions are disproportionate to their numbers in the family care sector.

Review of Literature

In this section we first review the state of knowledge about the monetary value of unpaid care. We then review the literature that addresses our understanding of the ways in which the magnitude of economic contributions to care differs across factors that place caregivers at risk of shouldering an unequal and/or unfair share of care work, or what we refer to in this paper as equality factors.

Monetary Value of Family Care Work

Efforts have been made to monetize the value of family care work in a variety of geographic and disciplinary contexts. However, it is difficult to summarize this work because the published literature spans a number of countries with highly variable populations, demographic and cultural characteristics, public policies, currencies and care labor markets and utilizes a number of different valuation methods. A number of studies have converted aggregate dollar estimates into indicators that are more suited to international comparisons, such as proportion of GDP, proportion of health care expenditures and, in the UK, proportion of expenditures on social care, the personal care and practical assistance provided to adults such as help at home (NHS, n.d.). For example, estimates of the proportion of GDP comprising the value of unpaid care work range from 0.5% in France to 7.5% in Mexico, although most fall in the 3–4% range (Deloitte, 2020; Hanley & Sheerin, 2017; Kia Piki Ake Welfare Expert Advisory Group, 2019; Peña-Longobardo & Oliva-Moreno, 2021). Other literature presents estimates of the monetary value of care to specific groups of care receivers such as persons with cancer (Ortega-Ortega & del Pozo-Rubio, 2019); dementias (Peña-Longobardo & Oliva-Moreno, 2015); mental health conditions (Diminic et al., 2019); palliative care (Chai et al., 2014); and stroke (Albrecht et al., 2016).

In Canada, the monetary value of unpaid care was last estimated at between $11.7 billion and $27.2 billion (Hollander et al., 2009). Based on data collected in 1996 and 2002, these estimates are still widely cited, but often without acknowledgement that the survey was restricted to respondents age 45 + and the value was estimated only for care provided to care receivers age 65+.

Together these findings suggest that the job of 'accounting for' the economic contributions of family caregivers remains incomplete. The aggregate monetary value of unpaid care work is infrequently estimated. When it is estimated, valuation methods are inconsistent, as are the populations of caregivers for whom it is estimated, and the way in which care is defined. In addition, robust data are unavailable in many countries and, where they are available, are of variable quality.

Inequalities in the Distribution of Unpaid Care Work

The extant literature on time spent on care, and its monetary value, suggests that responsibilities for, time spent on, and the value of family care work are not equally distributed across caregivers. However, a systematic understanding of how care is distributed and, therefore, what factors might give rise to inequalities, is a considerable gap in our knowledge.

From the body of literature on family caregiving, and the much smaller body of literature in which family care contributions are monetized, four characteristics emerge as likely to result in an unequal distribution of care work. These characteristics are gender, income, living arrangements, and generational cohort. There is much research on gender inequalities, but if we stop there, other inequalities that matter and appropriate policy responses to mitigate them and to support the sustainability of the care economy will remain hidden.

Gender. Extensive evidence generated over a number of decades from across the globe clearly demonstrates that care is gendered. The literature shows clearly and consistently that women are more likely to participate in the provision of care and contribute more hours (e.g., Deloitte, 2020; Francavilla & Giannelli, 2019; Hanley & Sheerin, 2017; Hess et al., 2020; Peña-Longobardo & Oliva-Moreno, 2021; Office for National Statistics, 2016). According to recent reports, women carry out 76.2 per cent of global unpaid care work, dedicating 3.2 times the hours that men do, totaling 2.5 billion hours every day (Addati et al., 2018). In the few studies that compare the estimated monetary value of unpaid care work of men and women, these gender differences in participation rates and time spent on care translate into women's contributions carrying a considerably higher monetary value than men's unpaid care work (e.g., Office for National Statistics, 2016). Oxfam International (2020) recently estimated the monetary value of women's unpaid care at a conservative $10.8 trillion annually. Indeed, because unpaid care work has been shown to be so gendered, much of the literature on unpaid care work and its monetary value focuses on women exclusively. However, Sharma et al. (2016) argue that failing to examine men's caregiving means that we may know less about gender differences than we assume.

Income. Findings from the extant literature reveal income disparities in caregiving behaviors and outcomes. As Cheshire-Allen and Calder (2022) report, "in the richest economies, the poor are disproportionately likely to be carers and carers are disproportionately likely to be poor" (p. 51). Similar income disparities are evident among individual caregivers within countries as well, with lower income or socio-economic status caregivers bearing a disproportionate share of the costs of care (Chai et al., 2014; Deloitte, 2020; Wolf, 2004). Caregivers in poverty have, in turn, been shown to experience extra stresses and hardships (Cheshire-Allen & Calder, 2022). Financial resources give caregivers options with respect to how to meet the care needs of those for whom they care, including purchasing substitute services, goods, care aids, etc. (Walshe et al., 2009; Wolf, 2004).

Living arrangements. Living arrangements can affect the care receiver's access to resources, and thus the contributions of family caregivers. The evidence on co-residential care is mixed, with family care shown to be both a complement to (Temple et al., 2017), and a substitute for, home care and a complement to formal health care services (Urwin et al., 2019). These mixed results may be due to differences in the national supports available to care receivers. It also is likely that congregate living residents receive more formal services, which allow family caregivers to do less and/or perform different tasks for these residents, while co-resident care receivers may be eligible for fewer supports.

The literature on the role of living arrangements as a determinant of either the time spent on care tasks by caregivers, or its value, is scarce. However, it does point to inequalities in care contributions. Some of the pre-pandemic evidence shows that caregivers who co-reside with the care receiver spend more time on care work than non-co-resident caregivers (Anderson & Parmar, 2020; Turcotte & Sawaya, 2015; Wolf, 2004; Ydstebø et al., 2020). For non-co-resident caregivers, commuting time can add substantially to their care time contribution (Duxbury et al., 2009). Yet Statistics Canada data on caregiving and care receiving do not include travel time either as part of a task or as a separate task category. This data gap contributes to the lack of knowledge about inequality in caregivers' care time contributions by living arrangement. Recent research from Western Canada and Quebec conducted during the Covid-19 pandemic shows a clear divide on the relationship between living arrangements and the amount of care provided. Co-resident caregivers reported increasing care demands as home care, respite, and other supportive services were reduced or suspended, whereas caregivers to care receivers in personal care homes, assisted living facilities and group homes reported being unable to provide their usual level of care due to visitation restrictions (Funk et al., 2021).

Generational Cohort. Evidence to support the inclusion of generational cohort as a potential source of inequality is indirect but compelling. A generation is defined as a distinct group with a "set of historical events and related phenomena that creates a distinct generational gap" (Turner, 2015, p. 103). Generational cohort is more nuanced than age, taking into consideration shared historical experiences of a group of peers that have shaped their values and goals (Eastman & Liu, 2012). Different generational cohorts have different formative experiences—social, economic, technical events and shifts that shape their lives. For example, growing up in the deprivation of the Great Depression is a radically different experience than an early life lived in the relative prosperity and increasingly liberal social values of the baby boom in ways that will have implications for individual perspectives, values, behaviors and access to societal resources as pertains to family caregiving.

Where the generation concept has been invoked in caregiving research, the focus has been on a specific cohort rather than on generational comparisons. For example, caregivers

in the baby boom generation have been shown to experience negative care-related outcomes, such as reduced labor force participation (Wildman, 2020). In recent years, attention has shifted to 'young caregivers' caring for older family members, driven by concern that younger generations are disadvantaged by population ageing and are being brought into caregiving too early in the life course, threatening their educational and work force attainment (Stamatopoulos, 2018). That is, we are concerned about them, and study them, because of their generational position but we have not made comparisons to determine whether there are generational differences in the types and amounts of care tasks performed.

Monetization and the Relative Importance of the Equality Factors

Monetizing the value of family care is important because aggregate estimates of monetary value provide a different and meaningful way of recognizing the considerable contributions of family caregivers. Monetization also provides a common metric for comparing the private contributions of family caregivers with public expenditures on care. To date, how the monetary value of care contributions varies among caregivers has rarely been considered in monetization work. This added focus broadens the discourse to consider the ways in which contributions are unequal. It makes family care work visible in ways that raise questions as to where inequalities in contributions result in inequities.

In this paper we contribute to current discourse around the care economy by operationalizing one of its key components: family care. Quantifying the value of the family care sector makes family care work visible in a way that is comparable to the paid sectors of the care economy. We estimated the magnitude and monetary value of care work of Canadian family caregivers and examined inequalities within family care provision. Our research questions are:

RQ1. How much care time do family caregivers contribute and what is the aggregate annual monetary value of the contribution?
RQ2. Do gender, income, living arrangement and generational cohort result in inequalities in the contributions of care time and its monetary value?
RQ3. What is the relative importance of these equality factors in explaining variance in the monetary value of contributions?

Using the most recent available data to monetize the value of family care in Canada and examine variance in its provision, we advance the literature on monetization of family care and provide current, relevant information to policymakers and practitioners.

Methods

Data

Data from the most recent Statistics Canada survey on caregiving and care receiving, Cycle 32 of the General Social Survey (GSS), were used in this study. The survey collected a wide range of information about the provision and receipt of care to and from family members and friends with long-term health conditions, disabilities, or aging-related difficulties. For this study we selected a sub-sample of 6,888 respondents who reported that they had provided care to at least one family member or friend in the twelve months preceding the survey and who had complete information on variables that allowed us to determine time spent on care tasks, sex, generational cohort, living arrangements and income.

Survey respondents included Canadians aged 15 + who lived in one of the ten provinces and who did not live in an institution. Data were collected between April and December 2018, and 20,258 respondents completed the survey for an overall response rate of 52.8% (Statistics Canada, 2018). Respondents were contacted by telephone and had the option of completing the questionnaire online or with an interviewer. Proxy telephone interviews were allowed. All analyses were conducted at the University of Alberta Research Data Centre (RDC), which houses the full survey data in a secure and confidential environment. Survey weights (accounting for both person weights and bootstrap weights) were used in all analyses to account for the survey's complex sampling frame and ensure representativeness of findings.

Valuation Method

There are several methods for estimating the value of unpaid work, including family care work, which are well-described and compared in Cès et al., (2019). The most common of these are the replacement cost (also known as proxy good) and opportunity cost methods. In their seminal article, Zick and Bryant, (1983) concluded that the choice of valuation method is question-specific, a viewpoint also reflected in more recent literature (Cès et al., 2019). The opportunity cost method generates estimates from the perspective of the individual caregiver and their family, quantifying the sacrifices that family caregivers themselves make when taking on unpaid care. In contrast, the replacement cost method values family care work at the cost of replacing it with formal care should family caregivers be unable to provide the level of care required. Thus, it provides a "comprehensive and realistic perspective on the

Table 1 Care activities, mostcomparable occupations in the National Occupational Classification (NOC) andmedian hourly wage rates for generalist and specialist replacement costapproaches

Care activity[a]	Comparable NOC occupations[b]	National median hourly wage rate[c] (Canadian dollars)
Generalist replacement cost		
All care tasks	Home support workers, housekeepers and related occupations	17.00
Specialist replacement cost		
Transportation	Taxi and limousine drivers and chauffeurs	16.25
Meal preparation, meal clean-up, house cleaning, laundry or sewing	Light duty cleaners	16.61
House maintenance or outdoor work	Landscaping and grounds maintenance labourers	17.38
Personal care	Nurse aides, orderlies and patient service associates	20.88
Medical treatments or procedures	Licensed practical nurses	28.00
Scheduling or coordinating care-related tasks	Nursing co-ordinators and supervisors	42.45
Managing care receiver's finances	Accounting and related clerks	22.56

[a]From GSS32 care task module.

[b]From National Occupational Classification https://noc.esdc.gc.ca/ (Government of Canada, 2021b).

[c]Drawn from the trend analysis pages of the Government of Canada's (2021a) Job Bank website https://www.jobbank.gc.ca/trend-analysis/search-wages Accessed Nov 29, 2021.

value of informal care" that approximates "the plausible costs of care needed to support care recipients at home" (Ces et al., p. 23–24), such as in the event that family care becomes unsustainable. Since the overall objective of this study is to monetize the contributions of Canadian family caregivers to the care economy in a way that facilitates comparisons with contributions of paid sectors, the appropriate valuation method is the replacement cost method.

In the replacement cost method, the value of family care work is a function of time spent on care and the "price" of that time. There are two replacement cost variations, each of which uses a different price of time as the replacement rate. The generalist variation assumes that family care work would be replaced with the services of a single paid worker, such as a home health aide, who would perform all care tasks. The specialist variation assumes that each of the care tasks performed by family caregivers would be replaced with the services of paid workers whose work most closely resembles each of the care tasks (e.g., transporting the care receiver to and from appointments would be replaced by a taxi or car service driver; medication management and wound dressing would be replaced by a nurse, etc.).

Operationalization of Variables

Value of Unpaid Care

For both replacement cost estimates, hours per week spent on care tasks were derived from information on how frequently each care task was performed by the respondent (daily, weekly, monthly, less than monthly), and the time spent on each occasion that the task was performed. Time spent on each task was reported in ranges, so we chose a reasonable but conservative approach of using the midpoint of each range to calculate hours per period (day, week or month). For the category "less than monthly" we assumed a very conservative single annual episode of care. We then converted all of these to hours per week and hours per year.

To determine the market wage rates for the replacement rates, we used the Government of Canada's (2021b) National Occupational Classification (NOC) to select the occupations that most closely corresponded to the seven care tasks reported by caregiver respondents, then obtained national median wage rates for each of the selected occupations from the career planning pages of the Government of Canada's Job Bank website (Government of Canada, 2021a). To generate the generalist cost estimate we used the median wage rate for the occupation category for home support workers, housekeepers and related occupations. For the specialist cost estimate we used median wage rates for the corresponding occupation categories. Wage rates are reported in 2021 dollars. These are hourly wages before taxes and other deductions. Care activities, comparable occupations and median wage rates for these occupations are summarized in Table 1.

Gender

The only indicator of the caregiver's gender that is available in the GSS Cycle 32 data file is sex. For purposes of

the multivariate analysis sex was entered as a dichotomous variable (male = 0, female = 1).

Income

Respondents to the Cycle 32 GSS were asked for permission for their survey responses to be linked to their 2017 tax data, and 86% of respondents agreed. For the remaining respondents, income was imputed by Statistics Canada. Caregiver income was grouped into quintiles: <$13,000 (omitted category in the multivariate analyses); $13,000–27,000; $28000-46,000; $47,000–75,000; $76,000-568,000 (rounded to nearest thousand as required by Research Data Centre disclosure policy).

Living Arrangements

Two variables were used to derive our indicator of the caregiver-care receiver dyads' living arrangements: the care receiver's dwelling type and the respondent's proximity to the care receiver. Our derived living arrangement categories were:

- Co-resident: the care receiver lived in a private dwelling and in the same household or building as the caregiver;
- Community-dwelling: the care receiver lived in a private dwelling but not in the same household or building as the caregiver (omitted category in the multivariate analysis); and.
- Residential care: the care receiver lived in supportive housing, an institution or care facility.

Generational cohorts were created based on the schema developed by the Pew Research Centre (2015) and caregivers' self-reported year of birth: Generation Z (1997–2012), Millennial Generation (1981–1996), Generation X (1965–1980), Baby Boom Generation (1946–1964), and Depression Era Generation (1928–1945) (Dimock, 2019; Pew Research Centre, 2015). These generational categories were entered into the multivariate analysis as a series of dummy variables with Generation Z as the omitted category for the multivariate analysis.

Control Variables

Several control variables expected to be related to the monetary value of unpaid care work were included in first stage of the multivariate analyses. These included: a set of dummy variables representing the region of the country in which the respondent resided (British Columbia (omitted category); Prairie Provinces, Ontario, Quebec, Atlantic Provinces); a series of dummy variables representing the respondent's marital status (married/common-law (omitted category),

widowed/separated/divorced, single (never married); parental status (no child in the household = 0, child in the household = 1); and immigration status (born in Canada = 0, born outside of Canada = 1). Other potential control variables representing the nature of the care situation (e.g., relationship, care receiver's condition) could not be included because the survey captured this information only for the primary care receiver when the respondent cared for multiple family members and friends.

Analyses

To estimate the generalist replacement value of family care we summed the annual hours spent on each care task to obtain the total hours spent on care for each caregiver, then used population weights to aggregate to the population level. To obtain the aggregate specialist replacement value of unpaid family care we multiplied the annual hours spent on each care task by the median national wage rate for the corresponding occupation, then used population weights to aggregate to the population level. Information on the participation rates and average weekly hours of care for each care task is provided in Appendix 1.

Descriptive and bivariate analyses. To address RQ1, we generated univariate and bi-variate statistics for our dependent and independent variables. RQ2 was addressed using cross-tabulations between weekly mean hours of care and the estimated monetary values of unpaid care by the selected equality factors—gender, living arrangements, birth cohort and income—then using population weights to aggregate to the sub-population level (i.e., for each equality factor sub-sample).

Multivariate analysis. To answer RQ3, we utilized a multi-phased analytic process comprising bivariate analysis followed by backward stepwise regression to assess potential predictors of the aggregate value of unpaid care work (Heeringa et al., 2017). Dependent variables were the aggregate value of unpaid care estimated using the two valuation methods (in log form). Independent variables included the four equality factors and the set of control variables specified above. The reduced model that emerged from this process included only the four equality factors and region. We then used dominance analysis to determine the relative explanatory power of each of our equality factors (Azen & Budescu, 2003).

Results

Caregivers comprised 22.1% of the sample, representing 6.8 million Canadians. This proportion is slightly below the 25% of respondents identified as caregivers using the same data by Hango (2020) due to the loss of some respondents

Table 2 Weighted proportions, mean weekly hours of care, aggregate hours of care and total monetary value of care, by equality factor (N=6,913,000)

Equality factor	Proportion of population (%)	Mean weekly hours	Annual aggregate hours of care (in billions)	Aggregate annual monetary value in billion dollars (Generalist)	Aggregate annual monetary value in billion dollars (Specialist)
Total			5.7	97.1	112.7
Caregiver gender					
Female	53.0[a]	16.8[a]	3.2	54.3	63.6
Male	47.0[b]	14.9[b]	2.5	42.7	49.1
Caregiver annual personal income quintiles, $					
< 13,000	20	17.2[a]	1.2	21.1	23.8
13,000 – 27,000	20	18.6[ac]	1.3	22.6	26.7
28,000 – 46,000	20	15.6[ad]	1.1	19.0	21.8
47,000 – 75,000	20	16.6[a]	1.2	20.3	23.8
76,000 – 568,000	20	11.5[b]	0.8	14.1	16.6
Living arrangement of care receiver					
Co-resident: lived with the caregiver	37.6[a]	30.9[a]	4.2	70.8	80.8
Community dwelling: lived in a private household, not with the caregiver	46.0[b]	6.2[b]	1.0	17.5	20.6
Residential care: lived in supportive housing, an institution or care facility	16.4[c]	8.5[c]	0.5	8.5	10.8
Caregiver generational cohort					
Generation Z (1997–2012)	7.8[a]	9.5[a]	0.3	4.5	4.8
Millennial generation (1981–1996)	19.9[b]	11.5[a]	0.8	14.0	16.0
Generation X (1965–1980)	28.1[c]	16.1[b]	1.6	27.6	32.1
Baby boomers (1946–1964)	36.2[d]	17.5[b]	2.3	38.7	45.1
Depression era generation (1928–1945)	8.0[a]	24.9[c]	0.7	12.2	14.7

Means and proportions in the same column that do not share superscripts differ at p < .05.

for whom we did not have complete information on the variables of interest.

Descriptive and Bivariate Analyses

In 2018, Canadians spent a total of 5.7 billion hours caring for family members and friends (Table 2). The estimated annual aggregate value of this work is substantial, ranging from $97.1 billion to $112.7 billion using the generalist and specialist replacement cost methods, respectively. These estimates are clearly substantially higher than previous estimates based on Canadian data. Hollander et al. (2009) reported an aggregate value of $25 billion but, as noted earlier, their estimate was based on 2002 data and included only care provided by caregivers age 45 + to care receivers age 65+.

Large as these estimates are, data limitations mean they are conservative. We do not have estimates of time spent on care for the northern territories or for Indigenous persons living on reserve. We also deleted 163 respondents who reported spending 24/7 on each of the seven care tasks (the most intense caregivers). In addition, the "price" of time used to estimate the value of unpaid care work reflects wages paid to formal care workers while the other costs of doing business (e.g., infrastructure, administrative and benefit costs) were unavailable in the data base from which they were selected. Add to this the fact that home support workers' wages are low. Further, we made conservative assumptions when decisions had to be made, such as assigning one episode of care when a caregiver reported doing a task less than monthly.

A disproportionate share of the value of this unpaid care work is attributable to caregivers who are women, lower income, co-resident with the care receiver, and from the Depression Era or Baby Boom generations. It is noteworthy that, while these caregivers made the greatest contributions on a per capita basis, they did not necessarily make the biggest overall contributions. That is, the caregivers who are "punching above their weight" with their per capita contributions are not necessarily the same as the sub-populations who are making disproportionate contributions at the aggregate level.

Gender

Caregivers were significantly more likely to be women (53.0%) than men and women spent significantly more time on care per week than men (16.8 and 14.9 h, respectively) (Table 2). Thus, women contributed a higher proportion of hours of care (3.2 billion v. 2.5 billion hours, or 56% v. 44% of aggregate hours). As a result, their aggregate contributions also carried a higher value ($54.3 – $63.6 billion for women v. $42.7 – $49.1 billion for men, or 56% and 44% respectively of the total aggregate value). These results indicate a continuing gender gap in family care.

Income

Individual caregivers in the highest income quintile ($76,000+/year) spent significantly fewer hours per week on care (11.5) than caregivers in all other quintiles, whose average weekly care hours ranged from 15.6 to 18.6 (Table 2). As a result, caregivers in the highest income quintile contributed the fewest total hours of care (0.8 billion) with a value of $14.1 – $16.6 billion annually while caregivers in each of the other four income quintiles contributed 1.1–1.3 billion hours of care, valued at $19.0 – $26.7 billion. Higher income earners may be able to spend less time on care because they are able to purchase goods and services that substitute for their own care time, an option less available to lower income earners.

Living arrangements

The highest proportion of care receivers lived in a private household in the community (46.0%), followed by those living with the caregiver (37.6%) and those who lived in residential care (16.4%) (Table 2). Co-resident caregivers performed nearly five times as much care work per capita as those caring for someone living in the community (30.9 and 6.2 h/week, respectively) and more than three and a half times as much per capita as those caring for someone in residential care (8.5 h/week). The higher average weekly hours of care provided to someone in residential care compared to someone living in the community challenges the assumption that care is fully transferred to the formal sector once a person enters residential care.

Co-resident caregivers also made the largest contributions to the aggregate monetary value of family care work, contributing a total of 4.2 billion hours of care valued at $70.8—80.8 billion annually. Their contribution represents 73% of the aggregate monetary value of unpaid care work while they comprise just 38% of the caregiver population. Surveys show that the majority of older adults want to age in place, but many will need support to do so (Davis, 2021; Ipsos, 2022), so we expect the demands on co-resident family caregivers to continue to grow.

Generation

While the per capita contributions varied by generation, all generations' contributions were substantial. Just 8.0% of caregivers belonged to the Depression Era Generation, but these caregivers supplied significantly more care per capita than those in all other generations, averaging 24.9 h/week (Table 2). In contrast, the highest proportion of caregivers were from the Baby Boom Generation (36.2%), and they supplied 17.5 h of care/week, on average, significantly more than caregivers who were either Millennial or Generation Z caregivers. That said, the contributions of these younger caregivers were still substantial at 11.5 and 9.5 h/week, respectively. Generation X caregivers constituted 28.1% of the sample and averaged 16.1 h/week in care, significantly more than Millennial and Generation Z caregivers but on par with Baby Boom caregivers.

Once again, the key message emerging from the data is different when we compare per capita contributions with aggregate contributions. Generation Z and Millennial caregivers spent the least time on care tasks per capita but still spent more than a full workday on care work every week, resulting in annual contributions of 0.3 and 0.8 billion hours valued at $4.5 – $4.8 billion and $14 – $16 billion, respectively. Baby Boom generation caregivers contributed the most aggregate hours (2.3 billion), valued at $38.7 – $45.1 billion. Notably, despite representing just 8% of the caregiver population, Depression Era caregivers contributed a disproportionate 13% of the aggregate monetary value of unpaid care work, valued at $12.2 – $14.7 billion.

Multivariate Analyses

Dominance analysis results showed that, of the four equality factors, living arrangement explained the majority of the variability in the value of unpaid care work—81–83% of all of the variability explained by the final models for the specialist and generalist estimates respectively (Table 3). Backward stepwise regression results (Table 4)

Table 3 Dominance analysis results for predictors of the value of unpaidcare work, generalist and specialist replacement cost methods

Variable	Generalist replacement cost method		Specialist replacement cost method	
	Standardized dominance statistic	Ranking	Standardized dominance statistic	Ranking
Caregiver gender	0.0140	4	0.0187	4
Caregiver annual personal income	0.0226	3	0.0189	3
Living arrangement of care receiver	0.8278	1	0.8082	1
Caregiver generational cohort	0.1352	2	0.1539	2
Region	0.0004	5	0.0004	5
n	6,913,000		6,913,000	
Overall fit statistic	0.1878		0.1807	

showed that co-resident caregivers contribute the most to the aggregate value of unpaid care work—nearly nine times (868–897%) more than those caring for someone living in the community.

A distant second is generational cohort, accounting for 14–15% of variability explained by the final model (Table 3). Baby Boom, Generation X and Depression Era caregivers contributed significantly more to the aggregate value of unpaid care work than Generation Z and Millennial caregivers (225%, 172% and 164% more respectively for the generalist replacement cost; 249%, 192% and 192% more respectively for the specialist replacement cost) (Table 4).

Income ranked third, accounting for just 2% of the variability explained by the models (Table 3). The highest income caregivers contributed significantly less (32% and 31% less for generalist and specialist replacement costs respectively) to the aggregate value of unpaid care work than their lower income counterparts (Table 4). Gender ranked fourth, accounting for only 1–2% of the variability explained by the final models (Table 3) but women contributed 23–27% more than men (for the generalist and specialist replacement costs respectively) (Table 4).

In sum, like prior studies from other parts of the world, we have demonstrated the impressive magnitude of the monetary value of Canadian family caregivers' contributions. New to this body of literature, though, is the revelation that these contributions are not distributed equally across groups of caregivers, with disproportionate contributions coming from co-resident, Baby Boom and Depression Era, low income and women caregivers. That is, inclusion of the selected set of equality factors adds important new knowledge to our understanding of how unpaid family care work, and its monetary value, are distributed among family caregivers. These disparities, and their consequent implications for our understanding of the place of the family care sector in the broader care economy, are explored below.

Discussion

Taken together our findings provide powerful indicators of the economic value of family care work and of the inequalities among family carers in the magnitude of their contributions. Findings that the monetary value of family care work in Canada is between \$97.1 and \$112.7 billion illustrates its enormous contribution, clearly supporting Cès et al., (2019) observation that "the economic value of 'caregiving labour' … is an important part of the total costs of care as a whole" (p. 4).

Placing these findings within the context of the broader care economy reflects the longstanding feminist argument that work is work is work, by establishing its relationship to the much more visible and valued realm of paid care work, making it more visible to policy makers. Statistics Canada (2022) has adopted this stance, defining the care economy as paid and unpaid care work that supports the needs of care-dependent people. This contextualization responds as well to global policy discourse around action plans and resolutions urging governments to create systems of long-term and continuing care for people with chronic conditions and disabilities rather than placing full responsibility on unpaid caregivers (Centre for Ageing Better, 2022; UN Decade of Healthy Ageing Action Plan, 2020; UN Economic Commission for Europe, 2022). In this study, estimates of the value of care have been generated using replacement cost methods. Because these methods use wage rates of workers who might be hired to replace the work of family caregivers, they are directly comparable to paid care work equivalents. Our estimates are conservative yet still represent 4.2% and 4.9% of the entire Canadian Gross Domestic Product, 32–37% of total public health care expenditures and three to four times public expenditures on home, community and long term care (Canadian Institute for Health Information, 2021). Clearly family care work is a core component

Table 4 Weighted log-linear regression results for predictors of the value of unpaid care work generalist and specialist replacement cost methods

Variable	Generalist replacement cost method			Specialist replacement cost method		
	Parameter estimate	95% CI	Parameter estimate as a percentage	Parameter estimate	95% CI	Parameter estimate as a percentage
Gender of caregiver						
Female (male omitted)	0.21**	0.05,0.37	23.4	0.24***	0.09,0.40	27.1
Personal annual income of caregiver						
0–13,000 (omitted)	–	–	–	–	–	–
13,000 – 27,000	– 0.09	– 0.33,0.15	– 8.6	– 0.09	– 0.33,0.15	– 8.6
28,000 – 46,000	– 0.07	– 0.31,0.17	– 6.8	– 0.08	– 0.32,0.16	– 7.7
47,000 – 75,000	– 0.11	– 0.35,0.13	– 10.4	– 0.08	– 0.32,0.16	– 7.7
76,000 -568,000	– 0.39***	– 0.63,-0.15	– 32.3	– 0.37***	– 0.61,-0.12	– 30.9
Living arrangement of care receiver						
Co-resident	2.27***	2.10,2.44	867.9	2.30***	2.12,2.47	897.4
Community dwelling (omitted)	–	–	–	–	–	–
Residential care	0.17	– 0.02,0.36	18.5	0.27**	0.07,0.46	30.9
Caregiver generational cohort						
Generation Z (1997–2012) (omitted)	–	–	–	–	–	–
Millennial Generation (1981–1996)	0.34	– 0.26,0.94	40.5	0.39	-0.21,0.99	47.7
Generation X (1965–1980)	1.00***	0.41,1.59	171.8	1.07***	0.48,1.67	191.5
Baby boomers (1946–1964)	1.18***	0.61,1.76	225.4	1.25***	0.67,1.84	249.0
Depression era generation (1928–1945)	0.97***	0.36,1.59	163.8	1.07***	0.44,1.69	191.5
Region						
British Columbia (omitted)	–	–		–	–	
Prairies	0.08	– 0.13,0.29	8.3	0.06	– 0.15,0.28	6.2
Ontario	0.13	– 0.10,0.35	13.9	0.12	– 0.10,0.34	12.7
Quebec	– 0.17	– 0.41,0.06	– 15.6	– 0.19	-0.43,0.05	17.3
Atlantic Provinces	0.35***	0.15,0.55	41.9	0.33***	0.13,0.53	39.1
Intercept	6.22	5.64,6.80		6.22	5.63,6.80	
R-squared		0.26			0.26	
N		6,913,000			6,913,000	
Specification link test						
hat-squared (p-value)		0.17			0.15	
VIF		1.35			1.35	
Mean residual		– 0.02			– 0.02	

of the Canadian care economy. Only by integrating this knowledge into the policy making process can we ensure sustainability of both the family and formal care sectors of the long-term and continuing care systems, and thereby enhance care receivers' well-being.

Social injustice has long been part of public discourse on families and care. Injustices can arise from the invisibility of family care work, its devaluation, and inequalities in who shoulders the burden of care work. The invisibility and devaluation of family care work is systemic. Its contribution is discounted by its exclusion from the System of National Accounts, which contain key indictors relied on by public policy makers. Its value is seldom estimated and, when it is included in national statistics, it is relegated to the satellite accounts, limiting opportunities to inform policy discussions about how responsibility for care is currently distributed among stakeholders and the appropriate balance of responsibility between private and public domains.

The dominance analysis shows that caregivers' contributions to the care economy are not borne equally. Rather,

contributions are made differentially according to living arrangements, generational cohort, income and gender, in that order. Living arrangements accounted for the vast majority of the explained variance in caregiver contributions with co-resident caregivers carrying the major load. In Canada, we have seen a substantial increase in the proportion of caregivers who co-reside with their care receiver between 2012 (when the last GSS on caregiving and care receiving was conducted) and 2018 (27% v. 38%). This shift to co-residence may be the only choice when care needs are high and long-term and continuing care services are inadequate as the result of prior policy decisions favoring family over formal care (Keating, 2022). The finding by Funk et al. (2021) that, during the pandemic, co-resident caregivers experienced substantial increases in their care work when home care and other services were unavailable may be a harbinger of increasing demands on these caregivers as publicly funded services are eroded.

Generational cohort inequalities also are evident in our findings. Baby Boomers' contributions carry the greatest aggregate monetary value, while Depression Era caregivers contribute most on a per capita basis. If Boomers continue to make comparable per capita contributions, or begin to mirror their Depression Era counterparts as they grow older, we may see a substantial increase in aggregate care work contributions by family caregivers in the future. Together with the smaller size and lower contributions of the following generations, an intensification of the existing care gap is likely and may require that long-term and continuing care policy be revisited in the future.

Findings also indicate income inequalities in care contributions. Caregivers with the highest incomes spent the least time on care work while low- and middle-income earners spent the most. It is likely that those with lower incomes have little choice but to provide care themselves while higher income caregivers are in a position to purchase substitute services to free up their own time. This may suggest that publicly-funded substitute services are best targeted to lower-income caregivers.

While it was a statistically significant equality indicator, gender explained the least variance in care contributions. This finding may in part reflect the increasingly equal gender balance among Canadian caregivers (53% women v 47% men). Alternately it may reflect a need for policy makers and practitioners to see gender within the context of other inequalities that can marginalize family caregivers.

In sum, our findings raise the visibility of unpaid family care work: monetizing unpaid care work reveals the magnitude of the economic contributions family caregivers make to the care economy, and dominance analysis reveals the extent and nature of social injustice in the way in which responsibility for care work is distributed. These revelations drive home the observation that sustainability of the continuing care system depends on family caregivers. They also provide evidence that informs and justifies a shift in public discourse and decisions about the need and best practices for better supporting family caregivers.

Conclusion

Unpaid care work is an important aspect of economic activity, and an indispensable contribution to the well-being of individuals, their families and societies. Yet family care work continues to be peripheral to public policy agendas on long-term and continuing care. Putting a dollar figure on care is a first step toward making it "less likely that this work remains 'socially hidden or misperceived'" (Oxfam International, 2020 p. 29).

Deloitte (2020) asserts that "Carers are critical to the sustainability of the aged and disability care systems. They provide support and services that may otherwise be funded by the taxpayer, the estimated value of which is significant." (p. vi). Monetizing that care provides the means to situate the contributions of family caregivers to Canada's continuing care systems (Hollander et al., 2009), which is important in economic evaluations. Common sense tells us that costs do not disappear, they merely are redistributed among stakeholders. Leaving family care work outside of the care economy will inevitably result in underinvestment in long-term and continuing care overall, and an unbalanced investment in acute care v. continuing care, in particular, interventions intended to support the family care sector (Goodrich et al., 2012). Now that we have estimates of the monetary value of family care work, we need similar estimates of the work of paid (formal) caregivers to allow a deeper dive into what, a decade ago, was identified as a trend to transfer responsibility from the paid to the family care sector "by stealth" (Kröger & Leinonen, 2012).

A unique contribution of this study is its ability to highlight inequalities within the family care sector. Prior research has illustrated substantial variability in the experiences of family caregivers; the pandemic has only served to expose dramatically both the overall inadequacies of the long-term and continuing care systems and the disparities in caregivers' lived experience. Our findings clearly point to the need to move beyond the "one size fits all" approach to long-term and continuing care policy, and the tendency to overlook family care in discourse about policy reform.

Appendix

See Table 5.

Table 5 Proportions and mean weekly hours of care by care task (N = 6,913,000)

Care task	Participation rate	Mean hours per week
Transportation	76.2	5.0
Meal preparation, meal clean-up, house cleaning, laundry or sewing	57.3	10.0
Household maintenance or outdoor work	46.6	4.0
Personal care	29.0	6.4
Medical treatments or procedures	26.0	3.9
Scheduling or coordinating care-related tasks	41.4	2.5
Managing care receiver's finances	32.7	1.6
All care tasks	100.0	15.9

Declarations

References

Addati, L., Cattaneo, U., Esquivel, V., & Valarino, I. (2018). *Care work and care jobs for the future of decent work*.International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_633135.pdf

Albrecht, D., Wollensak, T., Ernst, C., Becker, C., Hautzinger, M., Pfeiffer, K. (2016). Costs of informal care in a sample of german geriatric stroke survivors. *European Journal on Ageing*, *13*, 49–61. https://doi.org/10.1007/s10433-015-0356-x.

Anderson, S., & Parmar, J. (2020). *A tale of two solitudes experienced by Alberta family caregivers during the COVID-19 pandemic* https://www.caregivercare.ca/research

Azen, R., & Budescu, D. V. (2003). The dominance analysis approach for comparing predictors in multiple regression. *Psychological Methods*, *8*(2), 129–148. https://doi.org/10.1037/1082-989X.8.2.129.

Badets, J., Fast, J., Keating, N., Robibaro, F., & Wray, D. (2023). *Canada's care economy: A conceptual framework for data measurement* Statistics Canada. Unpublished manuscript.

Canadian Institute for Health Information (2021). *Health expenditure data in brief*. https://www.cihi.ca/sites/default/files/document/health-expenditure-data-in-brief-en.pdf

Centre for Ageing Better (2022). *The state of ageing 2022* https://ageing-better.org.uk/state-of-ageing

Cès, S., Hlebec, V., & Yghemonos, S. (2019). *Valuing informal care in Europe: Analytical review of existing valuation methods*. Eurocarers. https://eurocarers.org/publications/valuing-informal-care-in-europe/

Chai, H., Guerriere, D. N., Zagorski, B., & Coyte, P. C. (2014). The magnitude, share and determinants of unpaid care costs for home-based palliative care service provision in Toronto. *Canada Health and Social Care in the Community*, *22*(1), 30–39. https://doi.org/10.1111/hsc.12058.

Cheshire-Allen, M., & Calder, G. (2022). No one was clapping for us': Care, social justice and family carer wellbeing during the COVID-19 pandemic in Wales. *International Journal of Care and Caring*, *6*(1–2), 49–66. https://doi.org/10.1332/239788221X16316408646247.

Davis, M. R. (2021). *Despite pandemic, percentage of older adults who want to age in place stays steady*. https://www.aarp.org/home-family/your-home/info-2021/home-and-community-preferences-survey.htm

Deloitte (2020). *The value of informal care in 2020*. Carers Australia. https://www.carersaustralia.com.au/submissions-reports/research-reports/

Diminic, S., Hielscher, E., Harris, M. G., Lee, Y. Y., Kealton, J., & Whiteford, H. A. (2019). A profile of australian mental health carers, their caring role and service needs: Results from the 2012 survey of disability, ageing and carers. *Epidemiology and Psychiatric Sciences*, *28*, 670–681. https://doi.org/10.1017/S2045796018000446.

Dimock, M. (2019). *Defining generations: Where Millennials end and Generation Z begins*.Pew Research Center. https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/

Duncan, K. A., Shooshtari, S., Roger, K., Fast, J., & Han, J. (2020). The cost of caring: Out-of-pocket expenditures and financial hardship among canadian carers. *International Journal of Care and Caring*, *4*(2), 141–166. https://doi.org/10.1332/239788220X15845551975572.

Duxbury, L., Higgins, C., & Schroeder, B. (2009). *Balancing paid work and caregiving responsibilities: A closer look at family caregivers in Canada* http://cprn3.library.carleton.ca/doc.cfm?doc=1997&l=en

Eastman, J. K., & Liu, J. (2012). The impact of generational cohorts on status consumption: An exploratory look at generational cohort and demographics on status consumption. *Journal of Consumer Marketing*, *29*(2), 93–102. https://doi.org/10.1108/0736376121 1206348.

Folbre, N. (2018). *Developing care: Recent research on the care economy and economic development*. International Development Research Centre.

Francavilla, F., & Giannelli, G. C. (2019). Dressing a ghost: Size and value of unpaid family care. *Applied Economics*, *51*(28), 3015–3030. https://doi.org/10.1080/00036846.2018.1564116.

Friedman, E. M., Rodakowski, J., Schulz, R., Beach, S. R., Martsolf, G. R., & James, I. I. I., A. E (2019). Do family caregivers off-set healthcare costs for older adults? A mapping review on the costs of care for older adults with versus without caregivers. *The Gerontologist*, *59*(5), e535–e551. https://doi.org/10.1093/geront/gny182.

Funk, L. M., & Hounslow, W. J. (2021). How do daughters interpret care as a public issue? Exploring identity, emotion and discourse in the narratives of activist-inclined carers of older parents. *Community Work & Family*, *24*(4), 455–470. https://doi.org/10.1080/13668803.2019.1681939.

Funk, L. M., Penner, J. L., Dansereau, L., & Kuryk, K. (2021). *Caregiving during COVID in Manitoba: Report of survey findings* http://laurafunk.ca/wp-content/uploads/2021/08/MB-Covid-Careg iver-Survey-Report-FINAL-2021-Aug-10-1.pdf

Goodrich, K., Kaambwa, B., & Al-Janabi, H. (2012). The inclusion of informal care in applied economic evaluation: A review. *Value in Health*, *15*(6), 975–981. https://www.sciencedirect.com/science/article/pii/S1098301512016269.

Government of Canada (2021a). *Job bank*. https://www.jobbank.gc.ca/career-planning/search-job-profile

Government of Canada (2021b). *National occupational classification* https://noc.esdc.gc.ca/

Hango, H. (2020). *Support received by caregivers in Canada* (Catalogue no. 75006-X). Statistics Canada. https://www150.statcan.gc.ca/n1/daily-quotidien/200108/dq200108a-eng.htm

Hanley, P., & Sheerin, C. (2017). Valuing informal care in Ireland: Beyond the traditional production boundary. *The Economic and Social Review*, *48*(3), 337–364.

Heeringa, S. G., West, B. T., & Berglund, P. A. (2017). *Applied survey data analysis, 2nd edition*. Chapman and Hall. https://doi.org/10.1201/9781315153278

Hess, C., Ahmed, T., & Hayes, J. (2020). *Providing unpaid household and care work in the United States: Uncovering inequality* [Briefing paper]. Institute for Women's Policy Research. https://iwpr.org/iwpr-issues/esme/providing-unpaid-household-and-care-work-in-the-united-states-uncovering-inequality/

Holland, M. R. (2022). More than chores: The invisible health work of family caregivers in rural New Brunswick, Canada. *Health & Place*, *73*, Article102726. https://doi.org/10.1016/j.healthplace.2021.102726.

Hollander, M. J., Liu, G., & Chappell, N. L. (2009). Who cares and how much: The imputed economic contribution to the canadian healthcare system of middle-aged and older unpaid caregivers proving care to the elderly. *Healthcare Quarterly*, *12*(2), 42–49. https://doi.org/10.12927/hcq.2009.20660.

Humphries, R. (2022). *Ending the social care crisis*. Bristol University Press.

Im, J., Mak, S., Upshur, R., Steinberg, L., & Kuluski, K. (2019). The future is probably now': Understanding of illness, uncertainty and end-of-life discussions in older adults with heart failure and family caregivers. *Health Expectations*, *22*(6), 1331–1340. https://doi.org/10.1111/hex.12980.

Ipsos (2022). *Nearly all Canadians 45 + years want to age at home, but only 1 in 10 (12%) say they can afford the cost of a personal support worker*. https://www.ipsos.com/en-ca/news-polls/Nearly-All-Canad ians-45-Want-Age-Home-But-Only-1-in-10-Afford-Cost-PSW

Keating, N. (2022). A research framework for the United Nations Decade of healthy ageing (2021–2030). *European Journal of Ageing*, *19*, 775–787. https://doi.org/10.1007/s10433-021-00679-7.

Keating, N. C., Fast, J. E., Lero, D. S., Lucas, S. J., & Eales, J. (2014). A taxonomy of the economic costs of family care to adults. *Journal of the Economics of Ageing*, *3*, 11–20. https://doi.org/10.1016/j.jeoa.2014.03.002.

Keating, N., Fast, J., Frederick, M., Cranswick, K., & Perrier, C. (1999). *Eldercare in Canada: Context, content and consequences* (89-570-XPE). Statistics Canada. https://publications.gc.ca/collections/collection_2016/statcan/CS89-570-1999-eng.pdf

Kia Piki Ake Welfare Expert Advisory Group (2019). *Current state: Carers of people with health conditions or disabilities*. http://www.weag.govt.nz/assets/documents/WEAG-report/background-documents/9513d6b9b0/Carers-of-HCD-010419.pdf

Kokorelias, K. M., Gignac, M., Naglie, G., Rittenberg, N., & Cameron, J. (2020). A qualitative study of the experiences of male and female spousal and adult children caregivers across the caregiving trajectory. *Alzheimer's & Dementia*. https://doi.org/10.1002/alz.047478

Kröger, T., Leinonen, A. (2012). Transformation by stealth: The retargeting of home care services in Finland. *Health and Social Care in the Community*, *20*(3), 319–327. https://doi.org/10.1111/j.1365-2524.2011.01047.x.

Li, L., Wister, A. V., & Mitchell, B. A. (2022). Examination of the healthy caregiver effect among older adults: Finding from the Canadian Longitudinal Study on Aging. *Gerontology*, *27*, 1–12. https://doi.org/10.1159/000526251

NHS. (n.d.). *Working in social care*. https://www.healthcareers.nhs.uk/working-health/working-social-care/working-social-care

Office for National Statistics (2016). *Changes in the value and division of unpaid care work in the UK: 2000 to 2015*. https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/articles/changesinthevalueanddivisionofunpaidcareworkintheuk/2000to2015

Ortega–Ortega, M., & del Pozo–Rubio, R. (2019). Catastrophic financial effect of replacing informal care with formal care: A study based on haematological neoplasms. *The European Journal of Health Economics*, *20*, 303–316. https://doi.org/10.1007/s10198-018-0998-7.

Oxfam International (2020). *Time to care: Unpaid and underpaid care work and the global inequality crisis* https://oxfamilibrary.openrepository.com/bitstream/handle/10546/620928/bp-time-to-care-inequality-200120-en.pdf

Pearson, R., & Elson, D. (2015). Transcending the impact of the financial crisis in the United Kingdom: Towards Plan F—a feminist economic strategy. *Feminist Review*, *109*(1), 8–30. https://doi.org/10.1057/fr.2014.42.

Peña-Longobardo, L. M., & Oliva-Moreno, J. (2015). Economic valuation and determinants of informal care to people with Alzheimer's disease. *The European Journal of Health Economics*, *16*(5), 507–515. https://doi.org/10.1007/s10198-014-0604-6.

Peña-Longobardo, L., & M., & Oliva-Moreno, J. (2021). The economic value of non-professional care: A Europe-wide analysis. *International Journal of Health Policy and Management*. https://doi.org/10.34172/ijhpm.2021.149

Perry-Jenkins, M., & Gerstel, N. (2020). Work and family in the second decade of the 21st Century. *Journal of Marriage and Family*, *82*, 420–453. https://doi.org/10.1111/jomf.12636.

Pew Research Center (2015). *The whys and hows of generations research* https://www.pewresearch.org/politics/2015/09/03/the-whys-and-hows-of-generations-research/

Queluz, F. N. F. R., Kervin, E., Wozney, L., Fancey, P., McGrath, P. J., & Keefe, J. (2020). Understanding the needs of caregivers of

persons with dementia: A scoping review. *International Psycho-geriatrics*, *32*(1), 35–52. https://doi.org/10.1017/S104161021 9000243.

Sharma, N., Chakrabarti, S., & Grover, S. (2016). Gender differences in caregiving among family caregivers of people with mental illnesses. *World Journal of Psychiatry*, *6*(1), 7–17. https://doi.org/10.5498/wjp.v6.i1.7.

Stajduhar, K., Giesbrecht, M., Mollison, A., McNeil, R., & Dosani, N. (2020). Caregiving at the margins: An ethnographic exploration of family caregivers experiences providing care for structurally vulnerable populations at the end-of-life. *Palliative Medicine*, *34*(1), 1–8. https://doi.org/10.1177/0269216320917875.

Stamatopoulos, V. (2018). The young carer penalty: Exploring the costs of caregiving among a sample of canadian youth. *Child & Youth Services*, *39*, 180–185. https://doi.org/10.1080/0145935X.2018.1491303.

Statistics Canada (2018). *General Social Survey – Caregiving and Care Receiving (GSS): Detailed information for 2018 (Cycle 32)*. https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSu rvey&SDDS=4502

Statistics Canada (2022). *Estimating the economic value of unpaid household work in Canada, 2015 to 2019* (Catalogue no. 13-605-X). https://www150.statcan.gc.ca/n1/en/catalogue/13-605-X2022 00100001

Temple, J. B., Jukic, M., & Dow, B. (2017). Informal care relationships and residential aged care recommendations: Evidence from administrative data. *BMC Geriatrics*. https://doi.org/10.1186/s12877-017-0656-4

Turcotte, M., & Sawaya, C. (2015). *Senior care: Differences by type of housing* (Cat.no. 75-006-X). Statistics Canada. https://www150.statcan.gc.ca/n1/pub/75-006-x/2015001/article/14142-eng.htm

Turner, A. (2015). Generation Z: Technology and social interest. *The Journal of Individual Psychology*, *71*(2), 103–113.

UN Decade of Healthy Ageing Action Plan 2020–2030. https://www.who.int/publications/m/item/decade-ofhealthy-ageing-plan-of-action

UN Economic Commission for Europe (2022). *Ministerial declaration on ageing* https://unece.org/2022-Rome-Ministerial-Declaration-Ageing

Urwin, S., Lau, Y. S., & Mason, T. (2019). Investigating the relationship between formal and informal care: An application using panel data for people living together. *Health Economics*, *28*, 984–997. https://doi.org/10.1002/hec.3887.

Walshe, C., Todd, C., Caress, A., & Chew-Graham, C. (2009). Patterns of access to community palliative services: A literature review. *Journal of Pain and Symptom Management*, *37*(5), 884–912. https://doi.org/10.1016/j.jpainsymman.2008.05.004.

Wildman, J. M. (2020). Life-course influences on extended working: Experiences of women in a UK Baby-Boom birth cohort. *Work Employment and Society*, *34*(2), 211–227. https://doi.org/10.1177/0950017019880077.

Wolf, D. A. (2004). Valuing informal elder care. In M. Bittman & N. Folbre (Eds.), *Family time: The social organization of care* (pp. 110–129). Routledge. https://doi.org/10.4324/9780203411650

Ydstebø, A. E., Benth, J., Bergh, S., Selbæk, G., & Vossius, C. (2020). Informal and formal care among persons with dementia immediately before nursing home admission. *BMC Geriatrics*, *20*, 296. https://doi.org/10.1186/s12877-020-01703-8.

Zick, C. D., & Bryant, W. K. (1983). Alternative strategies for pricing home work time. *Home Economics Research Journal*, *12*, 133–144. https://doi.org/10.1177/1077727X8301200205.

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