THE EFFECTS OF PERSONAL RELIGIOSITY AND SPIRITUALITY ON INFORMAL CAREGIVING ACTIVITIES

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With data from the 2012 Canadian General Social Survey on Caregiving and Care Receiving, this study measures how religion and spirituality impact a respondent's informal caregiving activities. Building on existing psychology and health research regarding the use of religion as a coping method as well as on sociological research concerning the ties between religion and civic engagement, we find that respondents with higher levels of religiosity are more likely to be informal caregivers, especially for health and disability needs. In turn, religious caregivers are more likely to provide care to non-family members, provide more hours of care a week, provide care to a greater number of care receivers, and are more likely to use religion and spirituality as coping methods. We also find that both the dimensions of group and private religiosity have a role to play in these relationships.

1. INTRODUCTION

With most populations aging in developed countries, issues related to caregiving, especially the growing need for informal caregiving, have become increasingly important to the health and social sciences fields. The category of informal caregiver includes all individuals who provide unpaid help for a family member, relative, friend or other acquaintance in need of care due to chronic physical or mental health issues (cancer, disability, autism, schizophrenia, HIV/AIDS, etc.) or aging related health and mobility problems (Alzheimer's, dementia, disability, etc.). As Pearce (2005: 82) states in the case of the USA and many other Western contexts: "The number of informal caregivers, and associated demands, are expected to increase due to longer survival times, reduced healthcare resources, and a trend toward informal outpatient care." Yet, informal care is also an activity that often remains less visible both socially and politically due to its unpaid and private nature.

Consequently, social scientific and health interest in who dedicates at least some of their unpaid time to the activities of informal care has been growing over the last few decades. A number of existing studies have shown that certain types of individuals are more likely to be informal care providers, and also dedicate on average more hours to these activities: these groups include most notably women, middle-aged adults as well as members of some ethnic minorities (Family Caregiver Alliance 2001). Yet, there has been very little research done on the links between a person's religiosity, or lack thereof, and their likelihood of being a care provider. We know from existing studies that there is a strong relationship between individual religiosity and participating in philanthropic activities in general, such as volunteering and charitable giving, but we know little about the specifics related to informal caregiving. The present study aims to address this gap by exploring and detailing the religiosity effect on informal caregiving using good-quality and comprehensive data from the 2012 Canadian General Social Survey on Caregiving and Care Receiving (Statistics Canada 2014). In so doing, this research uncovers the links that exist between individuals' religiosity levels and their likelihood of providing informal care, and the amount and type of care they provide. It also tests opposing hypotheses regarding which specific dimensions of religiosity have the greater impact on informal caregiving activities: dimensions more related to congregational life or to religious cognitive framing.

1.1 Theory and Existing Research

The focus of most of the existing literature on religion and caregiving in the fields of health, religion and psychology has been on how and to what ends carers use their religion and/or spirituality as a coping mechanism in the face of the hardships of providing informal care. Caregiving can be a distressing and burdened process during which individuals, confronted by

illness, disability and death, may seek to provide meaning to their struggles, to establish a sense of mastery and control, to find ways of alleviating particular stressors and generally to experience comfort. Many studies have shown that religion and spirituality can be a means to these ends. Among caregivers, those who use various aspects of religiosity such as prayer, support from their faith community and their beliefs in the transcendent to cope are more likely to describe an improved mood, a better caregiving experience and better relationship with their care receiver, spiritual well-being, and better overall mental and physical health (see notably Abernethy et al. 2002; Burgener 1999; Chang, Noonan, and Tennstedt 1998; Fenix et al. 2006; Hebert, Dang, and Schulz 2007; Heo and Koeske 2011; Marquez-Gonzalez et al. 2012; Miltiades and Puchno 2002; Nightingale 2003; Overvold et al. 2005; Pargament 1997; Picot et al. 1997; Poindexter, Linsk, and Warner 1999; Rabinowitz et al. 2009; Rommohan, Rao, and Subbakrishna 2002; Stolley, Buckwalter, and Koenig 1999; Stuckey 2001; Theis et al. 2003; Tix and Frasier 1998; Weaver and Flannelly 2004).

It is important to note, however, that this phenomenon is found not only among informal caregivers. More broadly, practicing a religion or a form of spirituality has been associated time and time again with mental and physical health benefits among general populations (Bowen 2004; George, Ellison, and Larson 2002; Koenig, King, and Carson 2012; Moberg 2005).

There are also nuances to add to the use of religion as a coping mechanism among caregivers. Some studies have shown the parallel existence of negative religious coping outcomes for some individuals, or in other words that those who turn to their faith while caregiving may have negative drawbacks from it, such as seeing their caregiving burden as a punishment from God (Herrera et al. 2009; Leblanc, Driscoll, and Pearlin 2004; Tarakeshwar and Pargament 2001; Winter et al. 2015; Zunzunegui et al. 1999). Members of certain socio-demographic, ethnic and

religious groups are also more likely than others to use religiosity as a coping mechanism, and draw greater caregiving satisfaction from it. Studies based in the USA have found these groups to include most notably African Americans, Hispanics, women and Protestants (Heo and Koeske 2011; Miltiades and Pruchno 2002; Picot et al. 1997; Rabinowitz et al. 2009; Tix and Frazier 1998).

Yet, with almost all the attention being given to the use of religion and spirituality as coping mechanisms among caregivers, little has been said about the effect of someone's religiosity on their likelihood of being a caregiver in the first place. A few studies have observed in passing higher overall levels of religiosity among caregivers compared with the general population (Rammohan, Rao, and Subbakrishna 2002; Soothill et al. 2002; Stolley, Buckwalter, and Koenig 1999), but this association has yet to be studied in any meaningful way.

There has, however, been more work done on a related and broader effect: the positive link between individual religiosity and participating in philanthropic activities. Persons with higher levels of religiosity have been repeatedly shown across many Western societies to be more likely to volunteer in their community and to give their time, money and other available resources to non-profit organizations (both secular and religious) than those individuals with lower or no religiosity (Berger 2006; Borgonovi 2008; Bowen 2004; Campbell and Yonish 2003; Caputo 2009; Cnaan 2002; Gibson 2008; Hall et al. 2009; Hall 2005; Johnston 2013; Lam 2002; 2006; Lim and MacGregor 2012; Luria, Cnaan, and Boehm 2017; Monsma 2007; Parboteeah, Cullen, and Lim 2004; Perry et al. 2008; Putnam and Campbell 2010; Smidt 2003; Wuthnow 2004).

There have been two main sets of mechanisms identified as being at play in this relationship. *1) Congregational mechanisms*: Many religious groups strongly encourage philanthropic activities both within and outside their community, and often provide opportunities and resources to enable such activities. More religious individuals tend to be much more involved

in this congregational life, and many researchers argue that it is mainly for this reason that religious individuals are also more likely to participate in charitable activities organized by their religious groups (Beyerlein and Hipp 2006; Bowen 2004; Johnston 2013; Paxton, Reith, and Glanville 2014; Putnam and Campbell 2010; Wuthnow 2004). Additionally, those who are actively involved in congregational activities also usually have friends, family and acquaintances who are similarly involved (Cheadle and Schwadel 2012; McPherson, Smith-Lovin, and Cook 2001; Olson and Perl 2011; Smith, McPherson, and Smith-Lovin 2014). Consequently, an actively religious person's social network often contains many others who are volunteering and giving to charity as well as encouraging, potentially pressuring and providing opportunities and resources to engage in these same behaviors (Becker and Dhingra 2001; Lewis, MacGregor, and Putnam 2013; Lim and MacGregor 2012; Merino 2013; Monsma 2007; Storm 2014).

2) Cognitive framing mechanisms: By contrast, other researchers argue that it is some specific religious beliefs, values and cognitive framing, such as the emphasis on selflessness and a sense of responsibility for helping those in need, that first and foremost reinforce individuals' participation in philanthropic activities (Clerkin and Swiss 2013; Einolf 2011; Lam 2002; Mencken and Fitz 2013; Wymer 1997). When interviewed, these values are often the main justification that individuals provide for engaging in volunteering and charitable giving (Ammerman 2014; Einolf 2011).

These congregational and religious cognitive framing mechanisms are also not only present during an individual's adult life: many who are actively involved in faith groups as adults were similarly active during their formative childhood years (Bengtson, Putney, and Harris 2013; Crockett and Voas 2006; Dillon and Wink 2007), and thus were often socialized in environments and with values encouraging volunteer and charitable engagement (Hall et al. 2009; Lasby and

Barr 2018; Perks and Haan 2011; Son and Wilson 2011). Nevertheless, these mechanisms are not necessarily found in equal measure among all religious traditions and faith groups. In the USA, the link between religious participation and volunteering has been found to be strongest among Black and mainline Protestants (Beyerlein and Hipp 2006; Lam 2006; Paxton, Reith, and Glanville 2014; Uslaner 2002; Wilson and Janoski 1995); and the link between religious beliefs and volunteering strongest among Black and Evangelical Protestants (Johnston 2013).

Additionally, Ruitner and de Graaf (2006) have found with cross-national comparisons that the effect of religiosity on volunteering appears to be stronger in more secular contexts. These are national contexts where congregational values and ways of life no longer permeate society, but rather become solely the domain of smaller groups. In these environments, the religious beliefs, values and norms laying the groundwork for and encouraging volunteering are instilled only among a smaller portion of the population who still has contact with faith communities, and thus the divide between the religious and the secular appears to be heightened.

1.2 Research Questions and Hypotheses

Informal caregiving is considered one subtype of philanthropic behavior, and more specifically one subtype of informal volunteering. Although most of the studies on religion, civic engagement and prosocial behavior use broader indicators of overall time spent volunteering, there are some that have specifically touched on the relationship between religiosity and informal volunteering to show a positive association also being present in this more specific case (Brooks 2006; Perks and Haan 2011; Perry et al. 2008; Putnam and Campbell 2010). Many religious groups are also known to organize, frame and provide their members with resources to support caregiving activities among their local communities.[1] Yet, there has been no research to date exploring the

various dimensions and particularities of the relationship between individual religiosity and informal caregiving.

The present study aims to fill this gap by answering the following series of research questions;

> *Q_1: To what extent do we see an association between people's level of religiosity and their likelihood of being an informal caregiver?*
>
> > *$Q_{1.1}$: Is this association limited to certain types of informal caregiving, such as health-related or age-related care?*
>
> *Q_2: How do religious and non-religious care-providers differ?*
>
> > *$Q_{2.1}$: When it comes to who receives their care?*
> >
> > *$Q_{2.2}$: To how much care they provide?*
> >
> > *$Q_{2.3}$: And if they use religion and spirituality as a means to cope with the hardships of being a caregiver?*
>
> *Q_3: Which dimensions of personal religiosity are key to the relationship with informal caregiving?*
>
> > *$Q_{3.1}$: Is the association mainly between group religious/congregational participation and informal caregiving, or mainly between private religiosity/ beliefs/framing and informal caregiving?*

Based on the existing literature on religiosity and philanthropic behavior, we expect the following:

> *H_1: Individuals with higher overall levels of religiosity will be more likely to be informal caregivers, and this for all types of care provided.*

We also anticipate this positive association between religiosity and being an informal caregiver to go beyond a spurious reflection of the fact that other types of individuals, who are more likely to be religious, are also more likely to be caregivers, such as women, older adults and members of ethnic minorities.

Due to a broader sense of responsibility, normative pressures and more easily available resources and opportunities for caregiving found within religious and congregational life, among caregivers themselves we expect to find that:

> *$H_{2.1}$: Religious caregivers will be more likely to provide care to non-family members than non-religious care providers.*
>
> *$H_{2.2}$: Religious caregivers will provide more hours of care on average than non-religious care providers.*
>
> *$H_{2.3}$: Religious caregivers will provide care to more people on average than non-religious care providers.*
>
> *$H_{2.4}$: Religious caregivers will be more likely to use religious and spiritual coping methods than non-religious care providers.*

Finally, opposing hypotheses on the impact of congregational and cognitive framing dimensions of religiosity will be tested:

> *$H_{3.1}$ (congregational mechanisms): Individuals regularly participating in religious group activities will be more likely to provide informal care, more so than only privately religious individuals.*
>
> *H3.2 (alternative cognitive framing mechanisms): Individuals with high levels of private religiosity will be more likely to provide informal care, more so than individuals who only participate in religious group activities.*

2. DATA AND METHODS

In order to test H_1 through $H_{3.2}$, data from cycle 26 of the Canadian General Social Survey (GSS), administered by Statistics Canada (2014), were analyzed by means of a series of logit and Poisson multivariate regression models. These data were collected between March 2012 and January 2013, and contain a special module of questions on caregiving and care receiving which makes them ideal for these analyses. Cycle 26 of the GSS contains a final stratified probability

sample of 23,093 respondents aged 15 years or older and living in private households from the 10 Canadian provinces. 9,552 of these respondents self-identified as caregivers. The survey was conducted by computer-assisted telephone interview. Respondents were contacted using random digit dialing among numbers that were listed as in service for residential use at the time of the survey. A respondent was then selected at random from the contacted household. The global response rate was 66%.

A series of questions on individuals' caregiving activities, or lack thereof, were asked, and these questions are used as the dependent variables for this study: "During the past 12 months, have you helped or cared for someone who had a long-term health condition or a physical or mental disability?";[2] "During the past 12 months, have you helped or cared for someone who had problems related to aging?"; "What is your relationship with your primary care receiver?"; "In an average week, how many hours of care or help do you provide with these [caregiving] activities."; "During the past 12 months, how many family members, friends or neighbours have you helped with any of the previous [caregiving] activities?"; "There are many ways of handling difficult situations. In the past 12 months, have you used any specific coping methods to help you deal with your caregiving responsibilities?" and "What were these coping methods? Religious or spiritual practices / meditation?"

Cycle 26 of the GSS also asks three questions related to a respondent's level of religiosity or spirituality: "Not counting events such as weddings or funerals, during the past 12 months, how often did you participate in religious activities or attend religious services or meetings?"; "How important are your religious or spiritual beliefs to the way you live your life?"; "In the past 12 months, how often did you engage in religious or spiritual activities on your own? This may

include prayer, meditation and other forms of worship taking place at home or in any other location."

In a first series of analyses to measure the general impact of religiosity on caregiving activities (H_1-$H_{2.4}$), these three items were combined to create a single scale for respondents' overall level of religiosity. This 3-item religiosity scale is used as the main independent variable in the first series of models. This scale was generated from a single-factor solution principal factor analysis, the results of which can be found in Table A.1 in Appendix A.

The three religiosity variables included in cycle 26 of the GSS are not direct measures of level of contact with congregational resources and opportunities enabling caregiving, of prosocial networks or of specific religious cognitive framing enabling caregiving: very few surveys contain such direct measures. This being said, the three religiosity variables included in the GSS can be used as proxies for these phenomena. Consequently, for the second series of analyses measuring the multidimensionality of the effect of religiosity on different aspects of caregiving ($H_{3.1}$ and $H_{3.2}$), frequency of religious service attendance was kept as a separate independent variable to capture exposure to faith group resources and networks. Salience of beliefs and frequency of private religious or spiritual practice, two strongly correlated variables,[3] were in turn combined into a single-factor solution scale to capture private religious and spiritual cognitive framing. Results from this factor analysis can be found in Table A.3 in Appendix A.

There were also a series of controls added to the logit and Poisson regression models, in order to better isolate the effects of religiosity on caregiving. These controls include specific religious affiliation, age, gender, marital status, being unemployed or in part-time employment, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue and province of residence.[4] Models were also run with the income and health utility

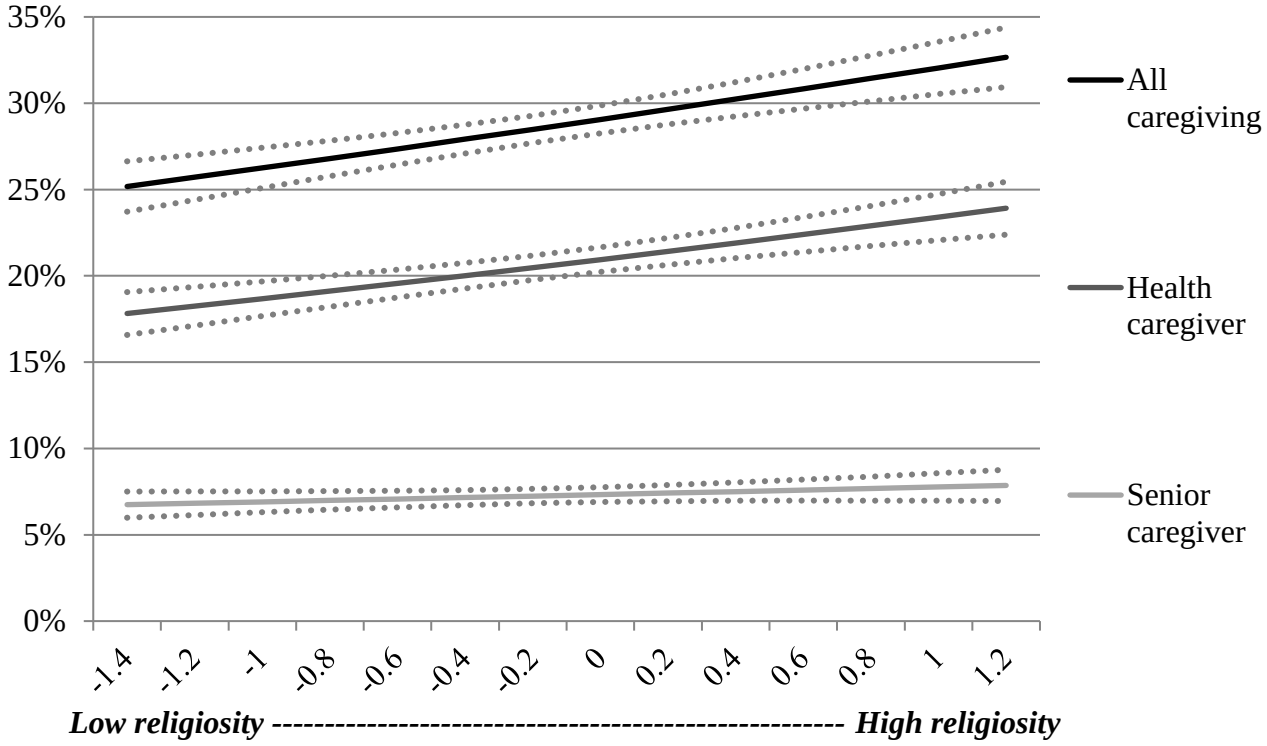
index of the respondent, and achieved very similar results, but due to the large number of missing values for these two variables (16.5% for income and 9.5% for the health utility index) we chose to remove them from the final models.[5] Results were weighted to be representative of the adult Canadian population. Additionally, for the models run with the subsamples of caregivers only, number of persons receiving care, distance to the care receiver's home and other persons helping with the provision of care were added as further controls.

3. RESULTS AND DISCUSSION

3.1 Overall Religiosity Effect on Caregiving

Figure 1 contains the probabilities of being an informal caregiver according to an average respondent's score on the 3-item overall religiosity scale. The results in this figure show that, even once the series of socio-demographic controls are included in the model, respondents with higher levels of religiosity are more likely to have provided informal care for someone in the year prior to the 2012 survey. More specifically, for respondents who score very high on the religiosity scale (1.2), their chances of being an informal caregiver overall are an estimated 33%, compared with an estimated 25% among those who score very low (-1.4).[6]

Figure 1: Predicted Probabilities of Being an Informal Caregiver, by Level of 3-Item Religiosity Scale, with CI (95%), Canada, 2012



Notes: 2012 CAN GSS. N for all caregiving model = 21,444. N for health caregiving model = 21,449; N for senior caregiving model = 21,449. Predicted probabilities from three binary logit regression models, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue and province of residence. With robust standard errors. Full results from the models are available in Table A.5 in Appendix A.

This said, this positive association is only statistically significant for care related to health issues or disabilities, not for care related to aging needs. The chances of being a health or a senior caregiver for very religious respondents (scoring a 1.2 on the religiosity scale) are an estimated 24% and 8% respectively, compared with an estimated 18% and 7% for respondents with very low levels of religiosity (scoring a -1.4 on the religiosity scale). The lower probabilities overall of caring for someone with age-related needs observed here, compared with health-related needs, may be a result of survey design: the question about caring for someone for health or disability reasons came first in the cycle 26 questionnaire, and so respondents would most likely have selected this option in cases where the care receiver's health and aging needs overlap.

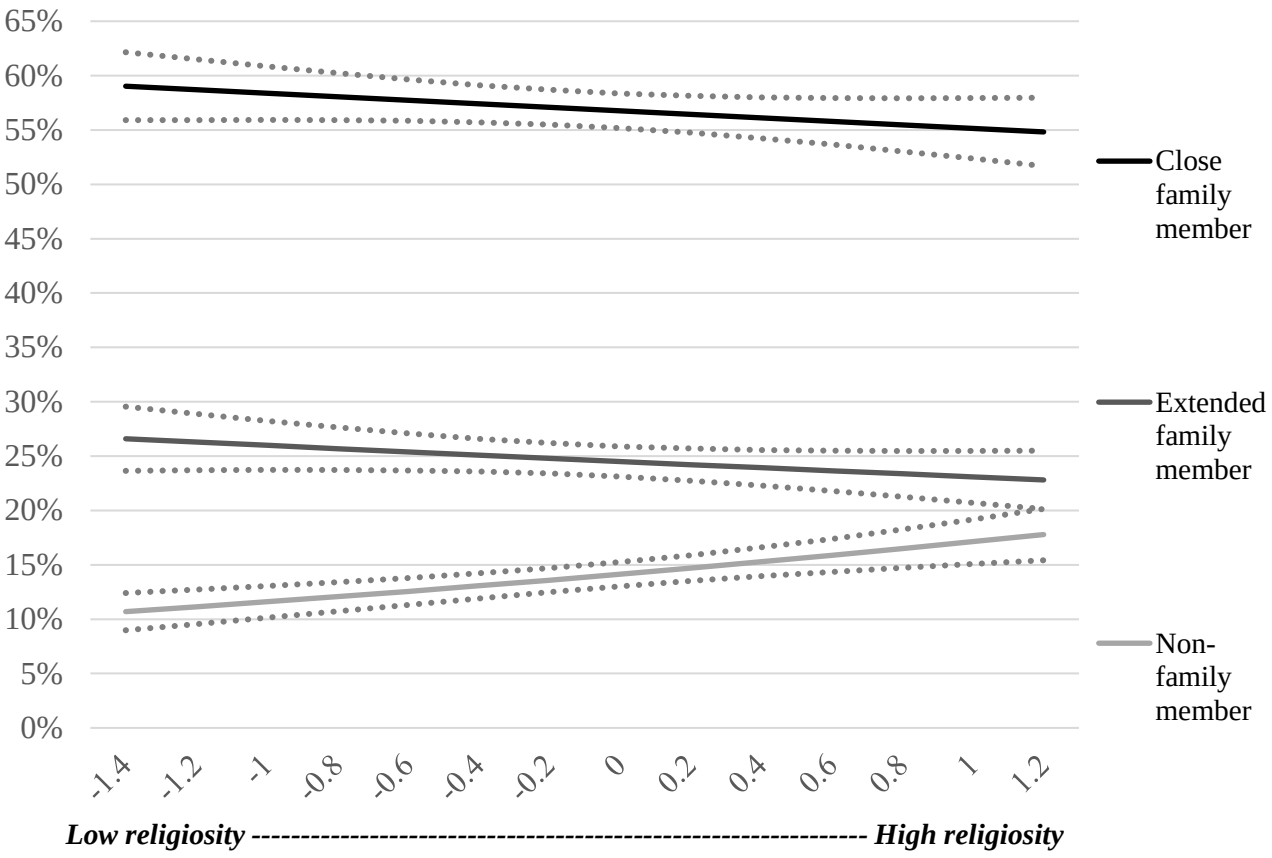
Once controlling for the other socio-demographic variables in the models, lower probabilities of overall informal caregiving are found among respondents residing in Newfoundland and Labrador (-8%) and New Brunswick (-5%), compared with those in Ontario. When interaction terms between provinces and level of religiosity are included in the models,[7] there is no statistically significant variation of religiosity effect size by region, which does not support the Ruitner and de Graaf hypothesis of stronger effects in more secular areas (the Western Canadian provinces having much larger non-religious populations) for this smaller number of within-country regions.

When comparing affiliates from different religious traditions, the only statistically significant difference is that liberal Protestants are 4% more likely to be informal caregivers than Catholics. Interaction terms between level of religiosity and specific religious affiliation are not statistically significant,[8] indicating that the strength of the religiosity effect on caregiving does not vary significantly by religious tradition as measured here.

Other socio-demographic effects that are statistically significant in the models and are associated with a 5% or greater change in an average respondent's probabilities of being an informal caregiver include other age groups being significantly less likely to be informal caregivers than respondents aged 45 to 64 years old; women being 5% more likely than men to be caregivers; married respondents being 5% more likely to be informal caregivers than those who have never married; respondents with the highest level of education being 5% more likely to provide care than those with the lowest level; respondents with their parents living in the same household being 16% more likely to give care; and those born outside of Canada being 10% less likely to give care. Looking at the estimated changes in probabilities across the range of each socio-demographic variable, level of religiosity is one of the stronger effects on informal caregiving overall: stronger

than specific religious affiliation, gender, marital status, employment status, level of education, number of children and mother tongue as measured by these models.

Figure 2: Predicted Probabilities of Caregiving to a Close Family Member, to an Extended Family Member and to a Non-Family Member, by Level of 3-Item Religiosity Scale, Among Informal Caregivers, with CI (95%), Canada, 2012



Notes: 2012 CAN GSS. N = 8,699. Predicted probabilities from three binary logit regression models, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue, province of residence, number of care receivers and distance to care receiver's home. With robust standard errors. Full results from the models are available in Table A.7 in Appendix A.

The results in Figure 2 specify how types of care receivers differ among caregivers according to these latter respondents' levels of overall religiosity. We find that caregivers who score higher on our religiosity scale are not significantly more or less likely to provide care to a

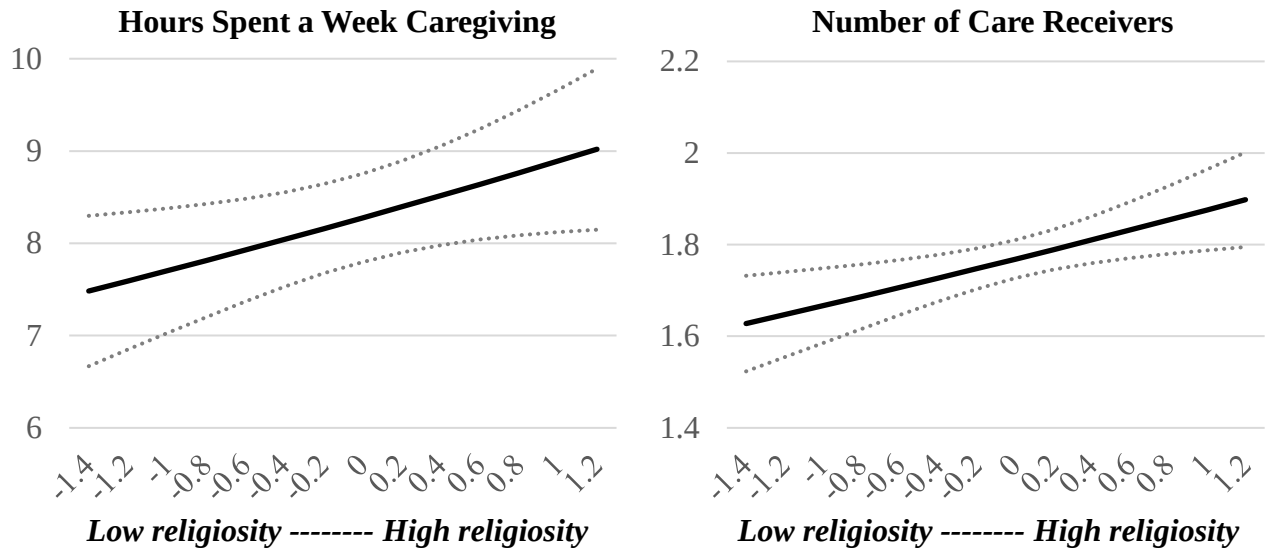
close (spouse/partner, child, parent or sibling) or extended family member (grandparent, in law, niece/nephew, uncle/aunt or cousin) than caregivers with lower levels of religiosity: these associations are not statistically significant. Caregivers with higher levels of religiosity are, however, more likely to provide care to a non-family member (neighbor, co-worker, close friend or other) than caregivers with lower levels of religiosity. Specifically, caregivers with high levels of religiosity (scoring 1.2 on the religiosity scale) have an estimated probability of 18% of providing care to a non-family member, compared with 11% for those with low levels of religiosity (scoring -1.4 on the religiosity scale).

Other groups of caregivers significantly more likely to provide informal care to a non-family member include 15 to 24 year-olds and respondents aged 65 years or older, compared with 45 to 54 year-olds; Catholics compared with Buddhists; never married respondents, compared with married respondents; those without their parents living in the same household; those born outside of Canada; those in Ontario, compared with those living in Newfoundland and Labrador; those providing care to multiple persons; and those living further away from their care receivers.

Continuing to look at differences between less and more religious caregivers, Figure 3 contains the mean number of hours of care provided and the number of individuals receiving care from an average caregiver according to their level of overall religiosity. When it comes to hours spent a week providing care, highly religious caregivers do on average spend more time providing care than their less religious counterparts: an average of 9 hours among the most religious (1.2), compared with an average of 7.5 hours among the least religious (-1.4). Highly religious caregivers also provide care to a greater number of persons on average than less religious caregivers. Specifically, respondents who score a high of 1.2 on the religiosity scale provide care to an

estimated 1.9 receivers on average, compared with 1.6 for respondents who score a low of -1.4 on the religiosity scale.

Figure 3: Predicted Counts of Hours Spent Caregiving a Week and Number of Care Receivers, by Level of 3-Item Religiosity Scale, Among Informal Caregivers, with CI (95%), Canada, 2012



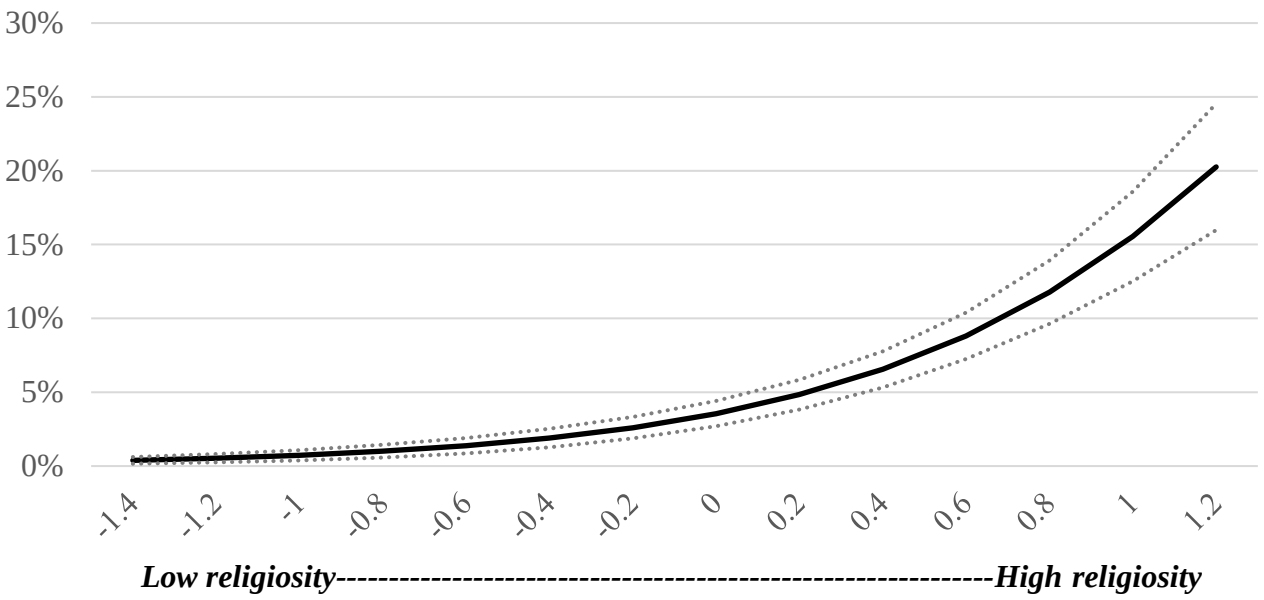
Notes: 2012 CAN GSS. N for hours spent caregiving model = 7,609. N for number of care receivers model = 8,724. Predicted counts from two Poisson regression models, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue, province of residence, distance to care receiver's home, number of care receivers (hours spent caregiving model only) and number of people helping with caregiving (hours spent caregiving model only). With robust standard errors. Full results from the models are available in Table A.8 in Appendix A.

Other groups of caregivers providing significantly more hours of care on average include Catholics, compared with those affiliated to Eastern Orthodoxy and Hinduism; Jews, compared with Catholics; 45 to 54 year-olds, compared with 15 to 24 year-olds; women; those without full-time employment; those with a lower level of education; those living in Ontario, compared with respondents living in Quebec; and those living closer to their care receivers. Other groups of caregivers providing care to significantly more care receivers on average include liberal

Protestants, compared with Catholics; 45 to 54 year-olds, compared with respondents aged 55 years or older; respondents who have never married, compared with those who are married; those with more children; and those living further from their care receivers.

With regards to the use of religious, spiritual or meditational practices as coping mechanisms among caregivers, a phenomenon that as discussed earlier is given much attention in the health and psychology literature, it is only a small fraction of the caregivers surveyed in the 2012 GSS who say they use such coping strategies: an average caregiver who provides two or more hours of care a week only has an estimated 3% probability of using religious, spiritual or meditational practices as a coping method.

Figure 4: Predicted Probabilities of Using Religious, Spiritual or Meditational Practices as Coping Methods, by Level of 3-Item Religiosity Scale, Among Informal Caregivers Providing Two or More Hours of Care a Week, with CI (95%), Canada, 2012



Notes: 2012 CAN GSS. N = 6,161. Predicted probabilities from a binary logit regression model, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue, province of residence, number of care receivers and distance to care receiver's home. With robust standard errors. Full results from the model are available in Table A.9 in Appendix A.

The results in Figure 4 further illustrate that it is mainly caregivers with higher levels of religiosity who use such coping strategies: caregivers with very high levels of religiosity (scoring 1.2 on the religiosity scale) have an estimated 20% chance of using religious, spiritual or meditational practices as coping methods, compared with a 0% chance among caregivers with very low religiosity (scoring -1.4 on the religiosity scale). Other groups of caregivers more likely to use religious, spiritual or meditational practices as coping mechanisms include Buddhists (+10% probability), compared with Catholics; 45 to 54 year-olds (+5%), compared with respondents aged 75 years or older; those providing care to multiple care receivers; and those living closer to their care receiver.

However, as asked in the 2012 GSS, this variable on religious, spiritual or meditational practices as coping methods does not capture the role that religious or spiritual (non)beliefs may play in how caregivers cope and make sense of their reality and hardships. It was also a question only asked of caregivers providing two or more hours of care a week in the 2012 GSS, not to all caregiving respondents. Additionally, it may be with these results that we see the influence of the more secular Canadian context, compared to the U.S. Whereas there is no theoretical reason to expect that the effect of religiosity overall on caregiving would be any different in Canada than in the U.S. (similar mechanisms at play), lower levels of religiosity overall in the adult Canadian population, notably for practices such as prayer (PEW Research Center 2018), may impact the frequency of use of religious, spiritual or meditational practices for coping among Canadian caregivers. Future studies with good quality U.S. data will have to make this comparison.

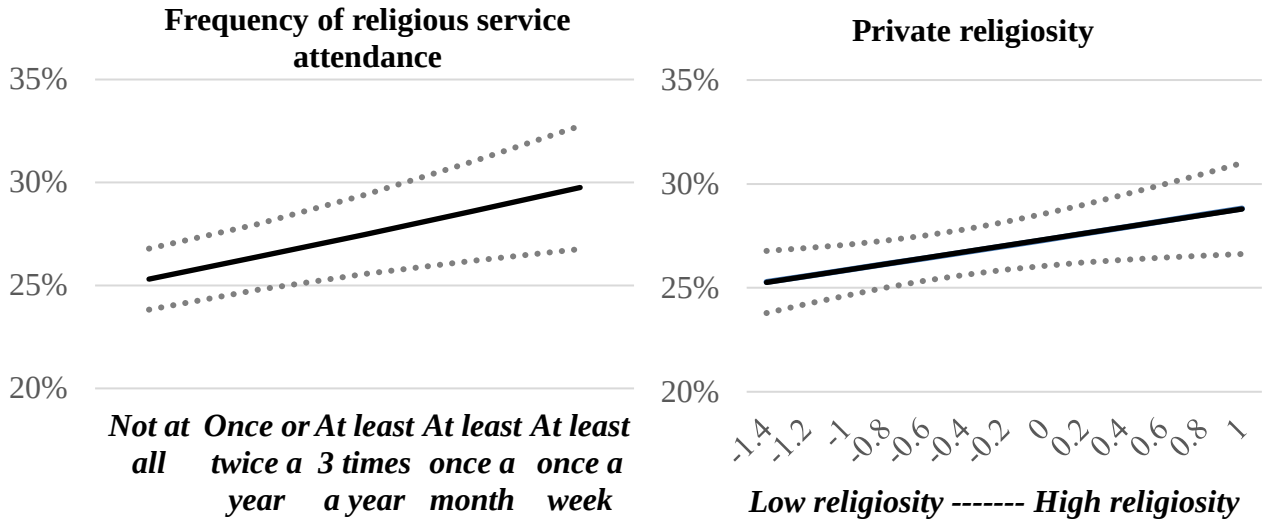
To summarize the results so far, more religious respondents are on average more likely to be informal caregivers, especially for health and disability needs, and these religious caregivers are in turn more likely to provide care to non-family members, more hours a week and to a greater

number of people. A certain number of these religious caregivers are also the ones who will use religious, spiritual or meditational practices as ways to cope with the difficulties of being an informal caregiver.

3.2 Dimensions of Group and Private Religiosity

For our second series of models, we break overall religiosity down into two dimensions: one related to group practice in frequency of religious service attendance (testing $H_{3.1}$), and the other related to private religiosity in combining salience of beliefs and frequency of practice on one's own, such as prayer or meditation (testing $H_{3.2}$). The results in Figure 5 indicate that both these dimensions have a significant positive association with a respondent's probabilities of being an informal caregiver, with frequency of religious service attendance characterized by a slightly stronger association. When frequency of religious service attendance is controlled at "not at all", a privately religious respondent (scoring 1 on the 2-item private religiosity scale) has an estimated 29% probability of being an informal caregiver, compared with 25% for a respondent with no private religiosity (-1.4). When private religiosity is controlled at -1.4 (no private religiosity), a respondent attending religious services at least once a week has a 30% chance of being an informal caregiver, compared with a 25% chance for a respondent who does not attend at all. Taken as indirect measures for the mechanisms discussed earlier of congregational and cognitive framing effects, it would seem then that both group and private mechanisms linked to religiosity have a positive influence on someone's likelihood of being an informal caregiver, with religious group practice having a slightly stronger effect.

Figure 5: Predicted Probabilities of Being an Informal Caregiver, by Frequency of Religious Service Attendance, and 2-Item Private Religiosity Scale, with CI (95%), Canada, 2012

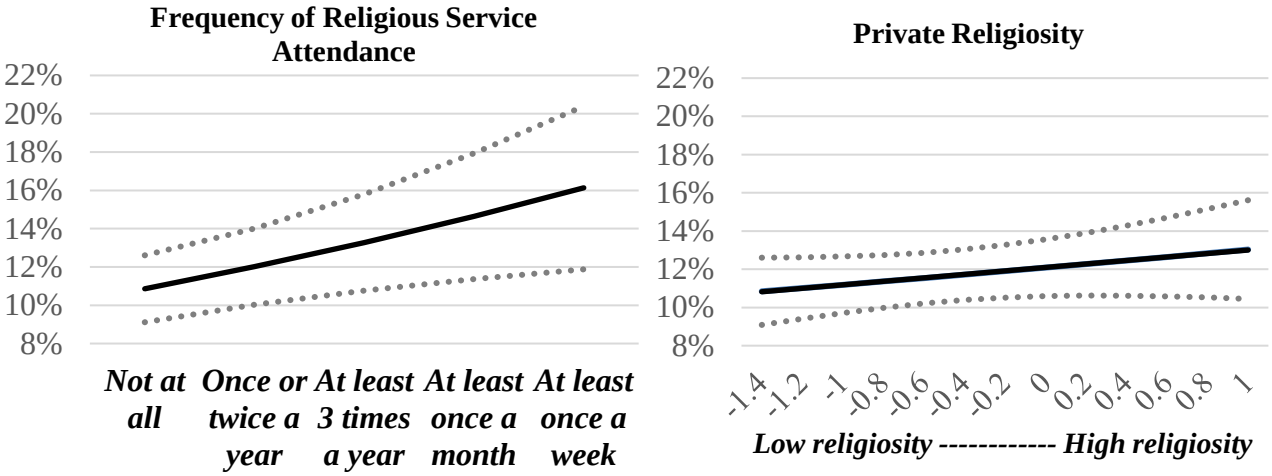


Notes: 2012 CAN GSS. N = 21,444. Predicted probabilities from a binary logit regression model, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue and province of residence. With robust standard errors. Frequency of religious service attendance probabilities generated at lowest private religiosity score (-1.38). Private religiosity probabilities generated at not attending religious services at all. Full results for this model are available in Table A.10 in Appendix A.

However, when it comes to the likelihood of providing care to a non-family member among caregivers, which as we saw earlier in Figure 2 is positively linked with an average caregiver's overall religiosity, the results in Figure 6 indicate that it is only the dimension of frequency of religious service attendance that comes into play in any significant way. When private religiosity is controlled at -1.4 (no private religiosity), a caregiving respondent who attends religious services at least once a week has an estimated 16% probability of providing care to a non-family member, compared with an estimated 11% probability among caregivers who do not attend at all. The effect of private religiosity in turn is not statistically significant when controlling for frequency of religious service attendance. It would seem then that the influence of the religious group — through providing the opportunities and resources, or through its enabling social networks, or both — is

paramount to increasing someone's likelihood of providing informal care to people outside their family circle.

Figure 6: Predicted Probabilities of Caregiving to a Non-Family Member, by Frequency of Religious Service Attendance, and 2-Item Private Religiosity Scale, Among Informal Caregivers, with CI (95%), Canada, 2012

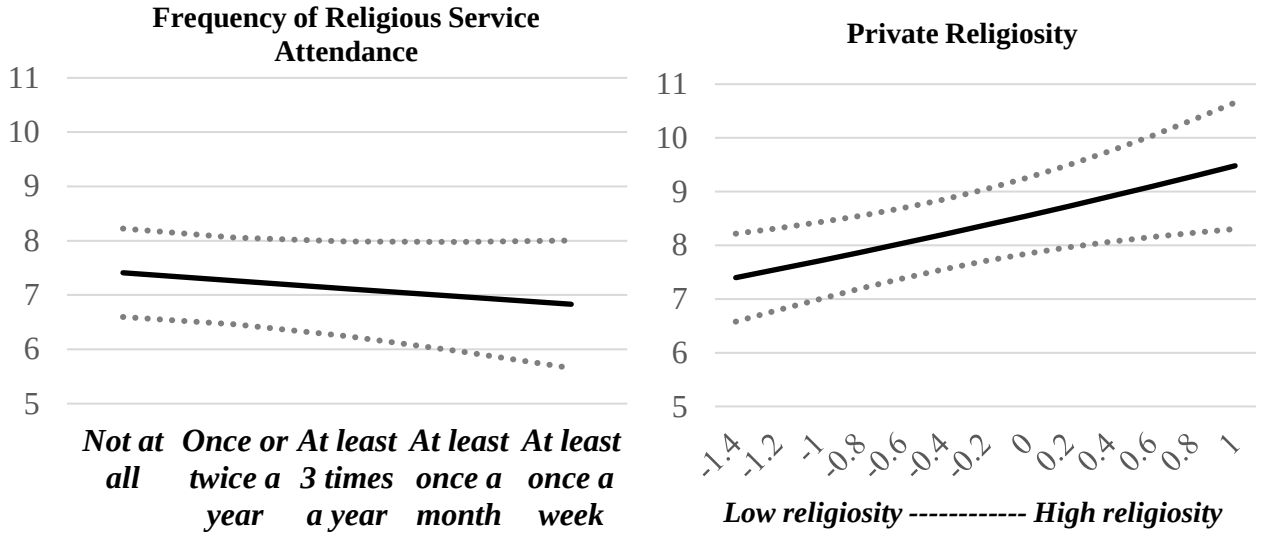


Notes: 2012 CAN GSS. N = 8,699. Predicted probabilities from a binary logit regression model, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue, province of residence, number of care receivers and distance to care receiver's home. With robust standard errors. Frequency of religious service attendance probabilities generated at lowest private religiosity score (-1.38). Private religiosity probabilities generated at not attending religious services at all. Full results for this model are available in Table A.11 in Appendix A.

By contrast, it is the dimension of private religiosity that has a significant impact on the average number of hours a week spent caregiving (see Figure 7): when frequency of religious service attendance is controlled at "not at all", a privately religious caregiver (scoring 1 on the 2-item scale) provides an average of 9.5 hours of care a week, compared with an average of 7.4 hours among caregivers who are not privately religious (-1.4). When private religiosity is controlled for, the effect of frequency of religious service attendance on hours a week spent caregiving is not

statistically significant. Private religiosity is also positively associated with number of people the respondent provided care to (an average of 1.8 people for caregivers with high levels of private religiosity, compared with an average of 1.6 people for caregivers with no private religiosity), but this effect is only statistically significant at the 90% level (see Table A.12 in Appendix A).

Figure 7: Predicted Counts of Hours Spent Caregiving a Week, by Frequency of Religious Service Attendance, and 2-Item Private Religiosity Scale, Among Caregivers, with CI (95%), Canada, 2012



Notes: 2012 CAN GSS. N = 7,609. Predicted probabilities from a binary logit regression model, controlling for specific religious affiliation, age, gender, marital status, employment status, level of education, number of children, respondent's parents living in the household, place of birth, mother tongue, province of residence, number of care receivers, distance to care receiver's home and number of people helping with caregiving. With robust standard errors. Frequency of religious service attendance probabilities generated at lowest private religiosity score (-1.38). Private religiosity probabilities generated at not attending religious services at all. Full results for this model are available in Table A.12 in Appendix A.

4. CONCLUSIONS

Beginning with our first set of hypotheses related to the effects of overall religiosity on informal caregiving, our findings for the most part support H_1, $H_{2.1}$, $H_{2.2}$, $H_{2.3}$ and $H_{2.4}$.

Respondents with higher levels of overall religiosity are more likely to be informal care providers than their less religious counterparts, albeit only for health-related needs, not aging-related care. This — combined with the fact that other social groups among whom religiosity is more prevalent, such as women and middle-aged adults (Crockett and Voas 2006; Francis 1997; Sherkat 2014; Sullins 2006), are also more likely to be caregivers — means that religiosity levels among caregivers are higher than those found in the rest of the adult population: for example, caregivers in the 2012 GSS have an average score on the 3-item overall religiosity scale of -.071, compared with an average score of -.154 among the rest of the adult population. In turn, caregivers with higher levels of overall religiosity are more likely to give care to non-family members (confirming $H_{2.1}$). to give more hours of care on average (confirming $H_{2.2}$), to more people on average (confirming $H_{2.3}$) and are the ones who sometimes use religious, spiritual and meditational practices as coping methods (confirming $H_{2.4}$), compared with their less religious caregiving counterparts.

As to what dimensions of religiosity are most important in these relationships, the results of this study indicate that both congregational and cognitive framing dimensions seem to play a role. Consequently, we argue that $H_{3.1}$ and $H_{3.2}$ are not opposing hypotheses as such, but rather congregational and cognitive framing mechanisms can be complementary in the relationship between religiosity and informal caregiving.

Both group and private religiosity indicators seem to increase the likelihood of a respondent being an informal caregiver in the first place. Frequency of religious service attendance is also positively associated with a caregiver's likelihood of providing care to non-family members. Being more actively involved with a faith group often leads to stronger community bonds among members of local congregations, one of the few places left where such bonds are created with non-

family members in today's urbanized and individualized societies. Since providing care to a non-family member is often perceived as more of a choice, rather than an obligation when it comes to a family member, this stronger bond can be crucial in the initial care decision. This, along with caregiving support and activities provided by religious groups and their networks, may explain why religious caregivers are more likely to provide care for non-family members.

Private religiosity in turn is positively linked to the average number of care hours a caregiver provides each week, and to a lesser extent to the number of people caregivers provide care to. Strong religious or spiritual beliefs that often encourage greater levels of selflessness and instill a sense of obligation to address suffering and help those in need, expressed through the salience of these beliefs in the lives of individuals and their private devotion, may push more privately religious informal caregivers to give even more.

As with any study, there are limits to these findings, and thus many avenues open for future research. The data used in this study are from only one national context, and may reflect some peculiarities of the Canadian case, especially when compared with the U.S. Most notably, the Canadian population has lower levels of religiosity overall than in the U.S.: for example, according to GSS data from both countries in 2012 an estimated 27% of Canadians said they attended religious services at least once a month, compared with 62% in the U.S. These lower levels of religiosity overall in Canada may translate to lower levels of caregivers using religion and/or spirituality as a coping method, compared with what we might find in the U.S. Ruitner and de Graaf would also argue that, since Canada is a more secular context, we should expect the religiosity effect to be stronger than in the U.S. However, there is no evidence for a difference in effect size between the more secular regions of Canada (Western provinces) and the more religious parts of Canada (Atlantic Canada for example). Additionally, we have no theoretical reason to

think that the effect of religiosity on the likelihood of being a care provider is specific to Canada as compared with other Western nations: the religious congregational life and cognitive framing mechanisms would be the same, just found among a smaller portion of the population than in the U.S. for example. In future research, findings from other countries could be compared with those from this study to confirm if this is indeed the case.

There are also potential biases that could be inherent in the (survey) research design which led to the collection of the data used for our analyses. There could be a social desirability bias at play in respondents' answers to the survey questions: some individuals with higher levels of religiosity may feel that they *should* be providing more informal care, and so say they are when in reality they may not be. There could also be a potential construct bias in that different respondents may have different definitions of what it means to be a caregiver; that caregiving is potentially a term used more by religious groups, and so religious individuals may be more likely to identify their care activities in this manner compared with non-religious individuals. Consequently, future studies could use different designs (time diary data, participant observation, in-depth interviews, and so forth) that do not contain the potential for such biases. Additionally, for those studies with a cross-sectional or longitudinal survey design, more detailed indicators of religiosity, spirituality, beliefs, congregational networks and religious socialization could be included in questionnaires related to informal caregiving. This would allow researchers to better test the specific mechanisms at play when it comes to the positive association between religiosity and caregiving activities.

Nevertheless, despite these limits the findings of this paper do provide a much clearer and detailed picture of the effect of religiosity on the likelihood of being an informal care provider, some of the distinctions between religious and non-religious caregivers, and the impact of different dimensions of religiosity. In Western contexts where indicators of both group and private

religiosity are on the decline among general adult populations and especially among younger generations, including in Canada (Clarke and MacDonald 2017; Eagle 2011; Wilkins-Laflamme 2015), Europe (Bruce 2011; Voas 2009) and the USA (Baker and Smith 2015; Sherkat 2014), it is important to also begin considering what the future holds for informal caregiving. Although some among the less and non-religious are caregiving, and without downplaying the important efforts these individuals make and the care they provide, rates of informal caregiving activities are lower among these subgroups of the population, compared with those among more religious individuals. The mechanisms enabling informal caregiving among less or non-religious social groups appear to be less effective in this sense than those mechanisms found only among religious populations, such as the congregational life, social networks and religious cognitive framing mechanisms explored in this study. With these religious mechanisms now being present among a shrinking portion of general populations, at a time when the need for health-related care is greater than in many decades past, other sectors of society, including corporate and state sectors, will very likely have to play a greater role in the years to come. This role can be either a direct one, with private companies providing professional care for those who can afford it and/or government-run universal care programs paid for by taxpayers' dollars providing for those in need; or an indirect one by creating and enabling new networks and other innovative ways to encourage informal care activities among social groups.

Although these avenues are important to consider for the future of care provision, it is first and foremost critical for policymakers, health care professionals and private citizens to recognize the important role religiosity is currently playing in enabling informal caregiving activities in society. Those in the health, psychological and sociological fields need to be aware that certain types of individuals are more likely to provide informal care to their family, friends and

acquaintances, and as such may encounter unique obstacles and have unique needs related to their religiosity and spirituality.

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Appendix A

Table A.1: Results from the Principal Factor Analysis (PF) for 3-Item Religiosity Scale

Items	Factor loadings	Communalities
Not counting events such as weddings or funerals, during the past 12 months, how often did you participate in religious activities or attend religious services or meetings? (never – at least once a week)	.642	41.2%
How important are your religious or spiritual beliefs to the way you live your life? (not at all important – very important)	.787	62.0%
In the past 12 months, how often did you engage in religious or spiritual activities on your own? (not at all – at least once a day)	.791	62.5%
Eigen value	1.184	
Cronbach's Alpha score	0.721	
Total explained variance of model	55.2%	
Range of 3-item religiosity scale	-1.412 to 1.176	

Table A.2: Correlation Matrix

	Frequency of religious service attendance	Salience of religious or spiritual beliefs	Frequency of religious or spiritual practice on one's own
Frequency of religious service attendance	1.000		
Salience of religious or spiritual beliefs	.530***	1.000	
Frequency of religious or spiritual practice on one's own	.538***	.698***	1.000

*†= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001.*

Table A.3: Results from the Principal Factor Analysis (PF) for 2-Item Private Religiosity Scale

Items	Factor loading	Communalities
How important are your religious or spiritual beliefs to the way you live your life? (not at all important – very important) In the past 12 months, how often did you engage in religious or spiritual activities on your own? (not at all – at least once a day)	.770	59.2%
Eigen value	1.657	
Cronbach's Alpha score	0.770	
Total explained variance of model	59.2%	
Range of 2-item private religiosity scale	-1.384 to .951	

Table A.4: Descriptive Statistics for the Variables Used from the 2012 CAN GSS

Variables	N	Mean	Std. Dev.	Min.	Max.
Caregiver	23,070	.414	.493	0	1
Health caregiver	23,079	.307	.461	0	1
Senior caregiver	15,995	.154	.361	0	1
Caregiving to close family member	9,190	.598	.490	0	1
Caregiving to extended family member	9,190	.219	.414	0	1
Caregiving to non-family member	9,190	.183	.387	0	1
Hours of caregiving per week	8,799	11.240	2.445	0	100+
Number of care-receivers	9,221	1.763	1.520	1	20+
Distance to care-receiver's home	9,213	3.428	1.704	1	7
Number of people helping with caregiving	8,386	3.677	4.227	0	60
Religious coping methods	6,490	.086	.280	0	1
Level of religiosity (3-item)	22,039	.000	.874	-1.412	1.176
Level of private religiosity (2-item)	22,100	.000	.835	-1.384	.951
Frequency of religious service attendance	22,539	2.493	1.578	1	5
Salience of religious or spiritual beliefs	22,408	2.919	1.073	1	4
Frequency of practice on one's own	22,243	3.691	2.120	1	6
Catholic	22,307	.374	.484	0	1
No religion	22,307	.182	.386	0	1
Liberal Protestant	22,307	.206	.405	0	1
Eastern Orthodox	22,307	.013	.113	0	1
Jewish	22,307	.009	.094	0	1
Muslim	22,307	.017	.128	0	1
Buddhist	22,307	.007	.083	0	1
Hindu	22,307	.008	.090	0	1
Sikh	22,307	.006	.074	0	1
Pentecostal	22,307	.012	.110	0	1
Other religion	22,307	.166	.372	0	1
Age: 15-24 years	23,093	.069	.254	0	1
Age: 25-34 years	23,093	.094	.291	0	1
Age: 35-44 years	23,093	.142	.349	0	1
Age: 45-54 years	23,093	.193	.395	0	1
Age: 55-64 years	23,093	.217	.412	0	1
Age: 65-74 years	23,093	.155	.362	0	1
Age: 75 years or older	23,093	.130	.336	0	1
Female	23,093	.576	.494	0	1
Never married	23,052	.185	.389	0	1
Married	23,052	.586	.493	0	1
Widowed	23,052	.115	.319	0	1
Separated / divorced	23,052	.114	.317	0	1
Not in full time employment	23,057	.412	.492	0	1

Table A.4 (continued):

Variables	N	Mean	Std. Dev.	Min.	Max.
Level of education	22,861	3.398	1.981	1	7
Number of children	23,047	1.849	1.442	0	5
Parents living in the household	23,093	.092	.288	0	1
Born outside of Canada	22,682	.189	.391	0	1
English mother tongue	22,704	.650	.477	0	1
French mother tongue	22,704	.177	.382	0	1
Other mother tongue	22,704	.173	.378	0	1
Newfoundland and Labrador	23,093	.061	.239	0	1
Prince Edward Island	23,093	.029	.168	0	1
Nova Scotia	23,093	.063	.243	0	1
New Brunswick	23,093	.053	.223	0	1
Quebec	23,093	.165	.371	0	1
Ontario	23,093	.297	.457	0	1
Manitoba	23,093	.056	.230	0	1
Saskatchewan	23,093	.060	.238	0	1
Alberta	23,093	.089	.285	0	1
British Columbia	23,093	.128	.334	0	1

Table A.5: Marginal Effects on the Probability of Being a Caregiver, Canada, 2012

	Caregiving overall		Health caregiving		Senior caregiving	
	dy/dx	***SE***	***dy/dx***	***SE***	***dy/dx***	***SE***
Level of religiosity (3-item)	.027***	.005	.023***	.005	.005	.003
No religion (ref. Catholic)	-.001	.013	-.007	.011	.005	.007
Liberal Protestant (ref. Catholic)	.037**	.012	.036***	.011	-.001	.007
Eastern Orthodox (ref. Catholic)	.005	.032	-.026	.030	.024	.017
Jewish (ref. Catholic)	.004	.041	-.003	.033	.007	.026
Muslim (ref. Catholic)	-.018	.032	.021	.029	-.049*	.021
Buddhist (ref. Catholic)	.033	.044	.007	.040	.023	.025
Hindu (ref. Catholic)	-.065	.046	-.055	.045	-.012	.025
Sikh (ref. Catholic)	.078†	.048	-.027	.046	.072***	.022
Pentecostal (ref. Catholic)	-.047	.040	-.024	.035	-.024	.021
Other religion (ref. Catholic)	.007	.012	.011	.011	-.004	.007
Age: 15-24 years (ref. 45-54 years)	-.165***	.023	-.127***	.020	-.038**	.012
Age: 25-34 years (ref. 45-54 years)	-.139***	.014	-.095***	.013	-.043***	.008
Age: 35-44 years (ref. 45-54 years)	-.119***	.012	-.075***	.011	-.044***	.007
Age: 55-64 years (ref. 45-54 years)	.002	.011	.008	.010	-.005	.006
Age: 65-74 years (ref. 45-54 years)	-.103***	.014	-.060***	.012	-.047***	.009
Age: 75 years + (ref. 45-54 years)	-.221***	.018	-.165***	.016	-.066***	.013
Female	.045***	.008	.045***	.007	.000	.005
Married (ref. never married)	.048***	.015	.031*	.013	.018*	.009
Widowed (ref. never married)	-.027	.020	-.028	.018	-.001	.013
Sep. / div. (ref. never married)	-.002	.018	.008	.015	-.013	.010
Not in full time employment	.001	.011	.015	.009	-.016*	.006
Level of education	.009***	.002	.006**	.002	.003**	.001
Number of children	.006†	.003	.009**	.003	-.004†	.002
Parents living in the household	.160***	.020	.119***	.017	.040***	.011
Born outside of Canada	-.103***	.014	-.082***	.012	-.023**	.009
French mother tongue (ref. English)	-.033*	.017	-.013	.015	-.021†	.011
Other mother tongue (ref. English)	-.042**	.015	-.033*	.013	-.010	.009
Newfoundland & Lab. (ref. Ontario)	-.082***	.016	-.083***	.014	-.001	.008
Prince Edward Island (ref. Ontario)	-.033	.022	-.027	.018	-.005	.011
Nova Scotia (ref. Ontario)	-.024	.016	-.022†	.013	-.003	.008

*N caregiving overall = 21,444. N health caregiving = 21,449. N aging caregiving = 21,449. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.5 (continued):

	Caregiving overall		Health caregiving		Senior caregiving	
	dy/dx	***SE***	***dy/dx***	***SE***	***dy/dx***	***SE***
New Brunswick (ref. Ontario)	-.049**	.018	-.052***	.015	.002	.010
Quebec (ref. Ontario)	-.023	.017	-.010	.014	-.014	.011
Manitoba (ref. Ontario)	.021	.018	.025†	.014	-.005	.009
Saskatchewan (ref. Ontario)	.022	.017	.012	.015	.009	.008
Alberta (ref. Ontario)	-.014	.014	-.007	.012	-.007	.008
British Columbia (ref. Ontario)	-.026*	.013	-.012	.011	-.013†	.008

*N caregiving overall = 21,444. N health caregiving = 21,449. N aging caregiving = 21,449. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.6: Interaction Terms (in Marginal Effects) between Province of Residence, Religious Affiliation and Religiosity on the Probability of Being a Caregiver, Canada, 2012

	Model 1		Model 2	
	dy/dx	***SE***	***dy/dx***	***SE***
Religiosity (3-item)*Nfld & Lab. (ref. Ontario)	.018	.019		
Religiosity (3-item)*PEI (ref. Ontario)	.031	.027		
Religiosity (3-item)*Nova Scotia (ref. Ontario)	.004	.018		
Religiosity (3-item)*New Brunswick (ref. Ontario)	.017	.022		
Religiosity (3-item)*Quebec (ref. Ontario)	.022†	.013		
Religiosity (3-item)*Manitoba (ref. Ontario)	.032	.020		
Religiosity (3-item)*Saskatchewan (ref. Ontario)	-.025	.020		
Religiosity (3-item)*Alberta (ref. Ontario)	.025	.016		
Religiosity (3-item)*British Columbia (ref. Ontario)	.011	.014		
Religiosity (3-item)*no religion (ref. Catholic)			.018	.015
Religiosity (3-item)*liberal Protestant (ref. Catholic)			.016	.014
Religiosity (3-item)*other religions (ref. Catholic)			.010	.013

*N = 21,444. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors. Other socio-demographic controls from models not shown here; available upon request to the author.*

Table A.7: Marginal Effects on Type of Care-Receiver, Among Caregivers, Canada, 2012

	Close family member		Extended family member		Non-family member	
	dy/dx	***SE***	***dy/dx***	***SE***	***dy/dx***	***SE***
Level of religiosity (3-item)	-.014	.009	-.013	.009	.028***	.007
No religion (ref. Catholic)	-.017	.023	-.002	.020	.022	.018
Liberal Protestant (ref. Catholic)	-.023	.021	-.001	.020	.025	.015
Eastern Orthodox (ref. Catholic)	-.051	.058	.109*	.052	-.082†	.044
Jewish (ref. Catholic)	-.023	.059	-.006	.061	.033	.056
Muslim (ref. Catholic)	.124†	.065	-.074	.060	-.034	.045
Buddhist (ref. Catholic)	.003	.082	.074	.076	-.119*	.050
Hindu (ref. Catholic)	-.051	.097	.031	.092	.020	.057
Sikh (ref. Catholic)	-.089	.075	.148*	.065	-.129	.079
Pentecostal (ref. Catholic)	-.024	.062	-.101	.084	.073†	.044
Other religion (ref. Catholic)	.023	.023	-.025	.021	.003	.016
Age: 15-24 years (ref. 45-54 years)	-.461	.037	.349***	.032	.064*	.030
Age: 25-34 years (ref. 45-54 years)	-.255***	.025	.210***	.021	.027	.020
Age: 35-44 years (ref. 45-54 years)	-.065**	.022	.054**	.020	.012	.017
Age: 55-64 years (ref. 45-54 years)	.031	.020	-.028	.019	-.005	.014
Age: 65-74 years (ref. 45-54 years)	-.087***	.026	-.017	.027	.081***	.017
Age: 75 years + (ref. 45-54 years)	-.080*	.033	-.101*	.046	.097***	.022
Female	.011	.014	.004	.014	-.015	.011
Married (ref. never married)	.010	.025	.075***	.023	-.085***	.016
Widowed (ref. never married)	-.043	.036	-.067	.045	.013	.022
Sep. / div. (ref. never married)	.026	.030	-.100**	.032	.009	.019
Not in full time employment	-.002	.020	-.014	.019	.015	.013
Level of education	.002	.004	.000	.004	-.002	.003
Number of children	.002	.006	-.002	.006	.001	.004
Parents living in the household	.095**	.033	.022	.029	-.117***	.026
Born outside of Canada	-.087***	.024	.041†	.024	.046**	.016
French mother tongue (ref. English)	.074*	.031	-.043	.029	-.031	.025
Other mother tongue (ref. English)	.061*	.026	-.024	.026	-.036*	.017
Newfoundland & Lab. (ref. Ontario)	.002	.024	.039†	.023	-.045*	.020
Prince Edward Island (ref. Ontario)	.026	.030	-.004	.028	-.019	.024
Nova Scotia (ref. Ontario)	.006	.023	-.002	.022	-.004	.017

*N = 8,699. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.7 (continued):

	Close family member		Extended family member		Non-family member	
	dy/dx	***SE***	***dy/dx***	***SE***	***dy/dx***	***SE***
New Brunswick (ref. Ontario)	-.026	.026	.030	.025	-.006	.021
Quebec (ref. Ontario)	-.022	.031	.000	.029	.019	.025
Manitoba (ref. Ontario)	.012	.025	-.002	.023	-.011	.018
Saskatchewan (ref. Ontario)	.020	.026	.006	.023	-.032	.021
Alberta (ref. Ontario)	.010	.024	-.045†	.023	.031†	.017
British Columbia (ref. Ontario)	-.002	.023	-.022	.022	.022	.015
Number of people receiving care from respondent	-.018**	.007	-.006	.006	.021***	.004
Distance to care-receiver	-.057***	.004	.047***	.004	.009***	.002

*N = 8,699. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.8: Incidence-Rate Ratios on Hours a Week Spent Caregiving and Number of People Receiving Care from Respondent, Among Caregivers, Canada, 2012

	Hours a week spent caregiving		Number of people receiving care	
	IRR	***SE***	***IRR***	***SE***
Level of religiosity (3-item)	1.072*	.036	1.061**	.023
No religion (ref. Catholic)	.990	.091	1.050	.045
Liberal Protestant (ref. Catholic)	.989	.071	1.079*	.038
Eastern Orthodox (ref. Catholic)	.687**	.099	.908	.058
Jewish (ref. Catholic)	1.551*	.334	1.045	.086
Muslim (ref. Catholic)	.948	.157	1.241†	.149
Buddhist (ref. Catholic)	.784	.171	1.448	.420
Hindu (ref. Catholic)	.590*	.148	1.212	.173
Sikh (ref. Catholic)	.781	.163	1.032	.133
Pentecostal (ref. Catholic)	1.370	.295	1.162	.118
Other religion (ref. Catholic)	1.001	.082	1.111*	.048
Age: 15-24 years (ref. 45-54 years)	.557***	.077	1.070	.074
Age: 25-34 years (ref. 45-54 years)	.879	.093	1.012	.042
Age: 35-44 years (ref. 45-54 years)	.936	.073	1.047	.039
Age: 55-64 years (ref. 45-54 years)	1.049	.076	.940*	.028
Age: 65-74 years (ref. 45-54 years)	.987	.094	.900*	.037
Age: 75 years + (ref. 45-54 years)	1.015	.118	.875†	.064
Female	1.442***	.075	.950†	.026
Married (ref. never married)	.857	.087	.876***	.035
Widowed (ref. never married)	1.176	.155	.998	.077
Sep. / div. (ref. never married)	1.074	.122	.931	.053
Not in full time employment	1.444***	.105	1.023	.030
Level of education	.928***	.013	.997	.006
Number of children	1.022	.024	1.027**	.009
Parents living in the household	.936	.090	1.053	.059
Born outside of Canada	1.110	.096	.957	.039
French mother tongue (ref. English)	1.087	.122	1.047	.058
Other mother tongue (ref. English)	1.031	.089	1.008	.041
Newfoundland & Lab. (ref. Ontario)	1.153	.102	.987	.044
Prince Edward Island (ref. Ontario)	1.109	.111	.953	.044
Nova Scotia (ref. Ontario)	1.141	.092	1.020	.044

*N hours = 7,609. N care-receivers = 8,724. †= $p \leq .10$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$. Robust standard errors.*

Table A.8 (continued):

	Hours a week spent caregiving		Number of people receiving care	
	IRR	***SE***	***IRR***	***SE***
New Brunswick (ref. Ontario)	1.150	.119	.985	.054
Quebec (ref. Ontario)	.759*	.084	.933	.049
Manitoba (ref. Ontario)	.946	.091	.984	.049
Saskatchewan (ref. Ontario)	.863	.080	1.048	.052
Alberta (ref. Ontario)	.912	.068	1.081†	.047
British Columbia (ref. Ontario)	.944	.073	.983	.042
Number of people receiving care from respondent	.974	.021	---	---
Distance to care-receiver	.758***	.016	1.017*	.008
Number of people helping respondent with caregiving	.995	.009	---	---
Model intercept	27.169***	3.877	1.727***	.116

*N hours = 7,609. N care-receivers = 8,724. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.9: Marginal Effects on Using Religious, Spiritual or Meditational Practices as Coping Methods, Among Caregivers, Canada, 2012

	dydx	*SE*		*dydx*	*SE*
Level of religiosity (3-item)	.102***	.009	Sep. / div. (ref. never married)	.005	.018
No religion (ref. Catholic)	.023	.020	Not in full time employment	.017	.011
Liberal Protestant (ref. Catholic)	-.004	.013	Level of education	.006*	.002
Eastern Orthodox (ref. Catholic)	.011	.034	Number of children	.002	.003
Jewish (ref. Catholic)	-.048	.055	Parents living in the household	-.017	.018
Muslim (ref. Catholic)	.016	.029	Born outside of Canada	-.006	.014
Buddhist (ref. Catholic)	.096*	.048	French mother tongue (ref. English)	-.004	.020
Sikh (ref. Catholic)	-.013	.044	Other mother tongue (ref. English)	.023†	.014
Pentecostal (ref. Catholic)	.017	.027	Newfoundland & Lab. (ref. Ontario)	-.025	.018
Other religion (ref. Catholic)	.026*	.013	Prince Edward Island (ref. Ontario)	-.009	.020
Age: 15-24 years (ref. 45-54 years)	-.017	.027	Nova Scotia (ref. Ontario)	-.028	.019
Age: 25-34 years (ref. 45-54 years)	-.030	.019	New Brunswick (ref. Ontario)	-.020	.018
Age: 35-44 years (ref. 45-54 years)	-.024†	.014	Quebec (ref. Ontario)	-.030	.021
Age: 55-64 years (ref. 45-54 years)	-.018†	.011	Manitoba (ref. Ontario)	.019	.014
Age: 65-74 years (ref. 45-54 years)	-.034*	.015	Saskatchewan (ref. Ontario)	.011	.015
Age: 75 years + (ref. 45-54 years)	-.054*	.022	Alberta (ref. Ontario)	.022†	.013
Female	.030**	.010	British Columbia (ref. Ontario)	.035**	.013
Married (ref. never married)	-.019	.016	Number of people receiving care from respondent	.010**	.004
Widowed (ref. never married)	-.007	.020	Distance to care-receiver	-.010***	.003

*N = 6,160. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.10: Marginal Effects on Informal Caregiving, Canada, 2012

	dydx	*SE*		*dydx*	*SE*
Frequency of religious service attendance	.012***	.003	Married (ref. never married)	.047***	.015
Private religiosity (2-item)	.013*	.006	Widowed (ref. never married)	-.027	.020
No religion (ref. Catholic)	.002	.013	Sep. / div. (ref. never married)	.000	.018
Liberal Protestant (ref. Catholic)	.038**	.012	Not in full time employment	.001	.011
Eastern Orthodox (ref. Catholic)	.007	.033	Level of education	.009***	.002
Jewish (ref. Catholic)	.003	.040	Number of children	.005	.003
Muslim (ref. Catholic)	-.015	.032	Parents living in the household	.158***	.020
Buddhist (ref. Catholic)	.036	.044	Born outside of Canada	-.104***	.014
Hindu (ref. Catholic)	-.064	.046	French mother tongue (ref. English)	-.033†	.017
Sikh (ref. Catholic)	.077	.048	Other mother tongue (ref. English)	-.043**	.015
Pentecostal (ref. Catholic)	-.049	.040	Newfoundland & Lab. (ref. Ontario)	-.084***	.016
Other religion (ref. Catholic)	.007	.012	Prince Edward Island (ref. Ontario)	-.035	.022
Age: 15-24 years (ref. 45-54 years)	-.169***	.023	Nova Scotia (ref. Ontario)	-.025	.016
Age: 25-34 years (ref. 45-54 years)	-.141***	.014	New Brunswick (ref. Ontario)	-.050**	.018
Age: 35-44 years (ref. 45-54 years)	-.120***	.012	Quebec (ref. Ontario)	-.021	.017
Age: 55-64 years (ref. 45-54 years)	.003	.011	Manitoba (ref. Ontario)	.021	.018
Age: 65-74 years (ref. 45-54 years)	-.104***	.014	Saskatchewan (ref. Ontario)	.022	.017
Age: 75 years + (ref. 45-54 years)	-.224***	.018	Alberta (ref. Ontario)	-.014	.014
Female	.047***	.008	British Columbia (ref. Ontario)	-.025†	.013

*N = 21,444. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.11: Marginal Effects on Providing Care for Non-Family Members, Among Caregivers, Canada, 2012

	dydx	*SE*		*dydx*	*SE*
Frequency of religious service attendance	.014***	.004	Widowed (ref. never married)	.012	.022
Private religiosity (2-item)	.011	.008	Sep. / div. (ref. never married)	.013	.019
No religion (ref. Catholic)	.027	.018	Not in full time employment	.016	.013
Liberal Protestant (ref. Catholic)	.027†	.015	Level of education	-.002	.003
Eastern Orthodox (ref. Catholic)	-.081†	.044	Number of children	.001	.004
Jewish (ref. Catholic)	.031	.056	Parents living in the household	-.119***	.026
Muslim (ref. Catholic)	-.031	.046	Born outside of Canada	.045**	.016
Buddhist (ref. Catholic)	-.114*	.049	French mother tongue (ref. English)	-.029	.025
Hindu (ref. Catholic)	.022	.057	Other mother tongue (ref. English)	-.036*	.017
Sikh (ref. Catholic)	-.131†	.079	Newfoundland & Lab. (ref. Ontario)	-.048*	.020
Pentecostal (ref. Catholic)	.068	.044	Prince Edward Island (ref. Ontario)	-.023	.024
Other religion (ref. Catholic)	.003	.016	Nova Scotia (ref. Ontario)	-.004	.017
Age: 15-24 years (ref. 45-54 years)	.059†	.030	New Brunswick (ref. Ontario)	-.006	.021
Age: 25-34 years (ref. 45-54 years)	.025	.020	Quebec (ref. Ontario)	.020	.025
Age: 35-44 years (ref. 45-54 years)	.012	.017	Manitoba (ref. Ontario)	-.011	.018
Age: 55-64 years (ref. 45-54 years)	-.005	.014	Saskatchewan (ref. Ontario)	-.033	.021
Age: 65-74 years (ref. 45-54 years)	.078***	.017	Alberta (ref. Ontario)	.031†	.017
Age: 75 years + (ref. 45-54 years)	.092***	.022	British Columbia (ref. Ontario)	.022	.015
Female	-.013	.011	Number of care-receivers	.021***	.004
Married (ref. never married)	-.085***	.016	Distance to care-receiver	.009***	.002

*N = 8,699. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

Table A.12: Incidence-Rate Ratios on Hours a Week Spent Caregiving and Number of People Receiving Care from Respondent, Among Caregivers, Canada, 2012

	Hours a week spent caregiving		Number of people receiving care	
	IRR	***SE***	***IRR***	***SE***
Frequency of attendance	.977	.019	1.016	.011
Level of private religiosity (2-item)	1.110**	.041	1.042†	.025
No religion (ref. Catholic)	.980	.090	1.054	.045
Liberal Protestant (ref. Catholic)	.983	.071	1.080*	.038
Eastern Orthodox (ref. Catholic)	.683**	.099	.908	.058
Jewish (ref. Catholic)	1.569*	.337	1.043	.086
Muslim (ref. Catholic)	.941	.155	1.244†	.149
Buddhist (ref. Catholic)	.777	.168	1.452	.422
Hindu (ref. Catholic)	.588*	.148	1.213	.173
Sikh (ref. Catholic)	.789	.163	1.029	.133
Pentecostal (ref. Catholic)	1.395	.297	1.157	.117
Other religion (ref. Catholic)	1.002	.082	1.110*	.048
Age: 15-24 years (ref. 45-54 years)	.564***	.078	1.065	.073
Age: 25-34 years (ref. 45-54 years)	.885	.093	1.011	.042
Age: 35-44 years (ref. 45-54 years)	.937	.074	1.047	.039
Age: 55-64 years (ref. 45-54 years)	1.047	.075	.940*	.028
Age: 65-74 years (ref. 45-54 years)	.994	.094	.899**	.037
Age: 75 years + (ref. 45-54 years)	1.032	.119	.872†	.063
Female	1.432***	.075	.952†	.026
Married (ref. never married)	.858	.088	.876***	.035
Widowed (ref. never married)	1.176	.154	.998	.077
Sep. / div. (ref. never married)	1.061	.121	.933	.054
Not in full time employment	1.438***	.104	1.024	.030
Level of education	.930***	.013	.997	.006
Number of children	1.023	.024	1.026**	.010
Parents living in the household	.940	.091	1.051	.060
Born outside of Canada	1.111	.096	.957	.039
French mother tongue (ref. English)	1.082	.122	1.048	.058
Other mother tongue (ref. English)	1.035	.089	1.007	.041
Newfoundland & Lab. (ref. Ontario)	1.166†	.102	.986	.044
Prince Edward Island (ref. Ontario)	1.116	.112	.950	.043

*N hours = 7,609. N care-receivers = 8,724. †= $p \leq .10$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$. Robust standard errors.*

Table A.12 (continued):

	Hours a week spent caregiving		Number of people receiving care	
	IRR	***SE***	***IRR***	***SE***
Nova Scotia (ref. Ontario)	1.140	.092	1.020	.044
New Brunswick (ref. Ontario)	1.148	.119	.986	.054
Quebec (ref. Ontario)	.758*	.084	.933	.049
Manitoba (ref. Ontario)	.946	.092	.984	.049
Saskatchewan (ref. Ontario)	.863	.080	1.047	.052
Alberta (ref. Ontario)	.909	.068	1.081†	.047
British Columbia (ref. Ontario)	.942	.073	.983	.042
Number of people receiving care from respondent	.974	.021	---	---
Distance to care-receiver	.759***	.016	1.016*	.008
Number of people helping respondent with caregiving	.996	.009	---	---
Model intercept	28.598***	4.302	1.660***	.118

*N hours = 7,609. N care-receivers = 8,724. †= p ≤ .10; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001. Robust standard errors.*

NOTES

[1] For a couple of current examples drawn from many instances in North America, see Rupert's Land Caregiver Services (http://www.rupertsland.ca/mission/ruperts-land-caregivers-services/) and Grace Anglican Church's Caregiving Seminar (http://www.graceanglican.church/events/event/169/caregiving-seminar/2016-01-31).

[2] Statistics Canada then identified informal caregivers as all respondents giving help/care to friends or family members because of a long-term health condition or a physical or mental disability or problems related to aging.

[3] The correlation matrix for the three religiosity variables can be found in Table A.2 in Appendix A.

[4] Descriptive statistics for all the variables used in the models can be found in Table A.4 in Appendix A.

[5] These results are available upon request to the author.

[6] Models were also run with the religiosity scale included in the form of 4 quartile dummies, to measure the possible non-linear effect of religiosity on the probabilities of being a caregiver. The effect was found to be linear, and so the single religiosity scale variable was preferred for the final models. Results from the models with the non-linear religiosity effect are available upon request to the author.

[7] See Table A.6 in Appendix A for these results.

[8] See Table A.6 in Appendix A for these results.