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Research Article

The Physical, Mental, and Social Health of Middle-Aged and Older Adults Without Close Kin in Canada

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Abstract

Objectives: We examine whether adults aged 45 and older lacking a partner and children are disadvantaged in terms of physical, mental, and social aspects of health. Then we test whether the importance of family structure for these outcomes varies by age, gender, and educational attainment.
Methods: We examine aging and social network modules from the Canadian General Social Survey to estimate associations between family structure and physical, mental, and social health, with the last measured as communication with relatives and friends, civic participation, and loneliness.
Results: Results show that middle-aged and older adults without partners have lower levels of physical and mental health and higher levels of loneliness than those with partners. Those without partners and children (the "kinless") interact less with relatives than those who have children but not partners, but more with friends, showing some substitution. In terms of civic participation, kinless middle-aged and older adults have significantly lower odds of this type of engagement than peers with close kin. Our interaction models find some differences by age, gender, and education, which vary by the outcome.
Discussion: Our results highlight some concerns about the well-being of kinless adults in Canada, especially as related to physical and mental health and two aspects of social health, loneliness, and civic participation. We find some substitution occurring, whereby middle-aged and older adults without family are interacting more with friends than comparable peers, but such substitution is marginal.

Keywords: Canada, Family structure, Kinless, Loneliness, Social connectedness

Background

Adult family structures around the world are shifting, with many middle-aged and older adults likely to be unpartnered and have fewer children than in the past (Verdery et al., 2019; Zaidi & Morgan, 2017). Increasing numbers of middle-aged and older adults lacking nuclear family ties (partner and children) are concerning because they potentially have lower levels of health in older age (Margolis & Verdery, 2017; Wright & Brown, 2017; Zhang & Hayward, 2001). As a rapidly growing family form (Verdery & Margolis, 2017), it is important to examine the health of "kinless" adults' consistent with the World Health Organization (WHO)'s definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2006). (We use the term "kinless" older adults to refer to older

adults lacking a partner and children, following recent literature [Mair, 2019; Margolis & Verdery, 2017; Verdery & Margolis, 2017]. However, it is important to note that these individuals may have other relatives in their kin network [e.g., siblings, cousins, aunts/uncles] and that the literature considers a variety of "types" of kinlessness [Margolis & Verdery 2017], including those lacking the kin we examine here as well as those lacking broader types of kin.)

Prior research offers some theoretical guidance about the well-being of kinless middle-aged and older adults, but such scholarship primarily concentrates on network size, rather than a broader set of social health outcomes. Research in many settings finds that the social networks of middle-aged and older adults are dominated by family members, a consequence induced by the atrophy of ties to friends, coworkers, and acquaintances upon retirement and as people age (Cornwell et al., 2008; Fredrickson & Carstensen, 1990; Marsden, 1987; McPherson et al., 2006). What about those without nuclear family ties? Do those lacking close kin have just as much social interaction, but with a broader set of relatives, friends, and their communities than those with available close kin? Research consistently demonstrates that lacking immediate family is one of the strongest predictors of loneliness in middle-age and older adulthood (Nicolaisen & Thorsen, 2014; Ong et al., 2016), but loneliness is a measure of subjective perceptions of deficiencies in social relations (Newmyer et al., 2021) and may not correspond to objective levels of social engagement. Classic gerontological theories suggest that other social ties may substitute for roles played by children or partners when such ties are unavailable (Cantor, 1979). Consistent with such substitution, recent evidence shows that European adults who lack kin have more friends (Djundeva et al., 2019; Mair, 2019), but a fuller accounting of the life circumstances of those without kin is needed.

The well-being of those without family ties is particularly likely to vary by age, gender, and educational attainment at least in part because of substitution processes in social relations. For instance, friends may be good substitutes in middle age, but at the oldest ages, same-age friends may pass away, leaving one with fewer friends than before. Substitution of friends for family may also occur more for women than men, because women generally have larger networks with more friends (Cornwell et al., 2008; Cutrona, 1996). The most highly educated may be the most likely to substitute friends when they do not have family, given that non-kin make up a greater proportion of their social networks compared with less-educated peers (Marsden, 1987; McPherson et al., 2006). It is unclear how substitution processes manifest in terms of differences in physical and mental health among the kinless, as few studies have tackled this.

In this article, we test whether kinless middle-aged and older adults (individuals lacking a partner or children) have lower levels of physical, mental, and social health than those with partners, children, or both. Given substitution models in the theoretical literature (Cantor, 1979), we test whether those lacking close family connections might be just as involved with a wider network of relatives, friends, and civic participation, and whether these associations vary by age group, gender, and education. It may be that some social groups (such as women, middle-aged adults, and the highly educated) are less disadvantaged by lacking kin than others (such as men, older adults, and the less educated) because these factors are strong predictors of the types of network ties people have and their patterns of engagement with them (Cornwell et al., 2008; McPherson et al., 2006).

The context we examine is Canada, a country whose demographic profile lies between Europe and the United States. This is a particularly important environment in which to examine kinless adults for two reasons. First, kinlessness is an especially pressing policy concern in Canada because it has among the highest prevalence of kinlessness in the world, with one in 10 adults aged 50 and older lacking a spouse and biological children (Verdery et al., 2019). Second, Canada offers an opportunity to learn about kinlessness and health more generally. Much of the research on the physical and mental health disadvantages of kinless groups is from the United States (Carney et al., 2016; Margolis & Verdery, 2017), while the only explicit tests of substitution processes for the social well-being of kinless older adults come from Europe (Mair, 2019). Canada is a unique context—culturally similar to the United States but sharing many social policies with Europe. In such a context, perhaps kinless middle-aged and older adults are not as disadvantaged as in other countries.

Family Structure and the Role of Substitution

The extent to which kinless adults are health-disadvantaged relative to those with available kin depends on whether they are able to substitute the help and social support often received from kin with others in their networks. On the one hand, people may make substitutions to compensate for a lack of close kin ties (Cantor, 1979). For example, those without a partner or child may forge close relationships with other relatives like siblings or extended kin, meaning they still have close relationships with relatives (Connidis & Campbell, 1995). There is evidence that adults without close kin are likely to be socially integrated with friends and neighbors (Brumbaugh, 2017; Mair, 2019). For example, single adults have more social contact with siblings, parents, friends, and neighbors than married counterparts (Sarkisian & Gerstel, 2016). Middle-aged and older adults who lack kin or whose kin are unavailable report more friends in their networks (Mair, 2019). Other studies find that acquaintances or neighbors can serve as "elastic ties" for older adults without family, helping to stave off loneliness (Shaw, 2005; Torres, 2019). Childless individuals, in particular, may develop a diverse network of connections over the life course to suit their needs in older adulthood (Allen & Wiles, 2013). Those who are widowed may

increase involvement in volunteering to compensate for the lost interaction with their spouse (Donnelly & Hinterlong, 2010).

On the other hand, perhaps friends or other types of kin cannot substitute fully, or even partially, in providing the types of social integration, social support, and health supports that partners and children provide, given that they are less likely to be living in the same household. The literature on middle-aged and older adults' loneliness certainly suggests such substitutions may not fully make up for a lack of family ties, with childless and especially unpartnered adults being the most likely to report dissatisfaction with their social relations, that is, being lonely (Nicolaisen & Thorsen, 2014; Ong et al., 2016). Kinless adults may be less involved with family altogether, either because family is not as important to them, or because these ties are less strong or nonexistent. For example, sexual minority older adults report being more lonely than their heterosexual counterparts, in part because of higher rates of being unpartnered and lower levels of family support (Hsieh & Liu, 2021). It could also be that kinless adults interact more with friends, as married individuals might have smaller friendship networks that overlap with their spouse (Cutrona, 1996). However, even in the cases where support from friends provides some protection from loneliness and poor mental health, such ties may not help with more private health tasks. For example, among older adults receiving substantial help with health care activities, fewer than one in five report help from relatives who are not a partner or children, and only 3% report help from nonrelatives (Wolff et al., 2016). If there is no or only partial substitution, kinless middle-aged and older adults will have poorer outcomes than those with available kin.

Neither one of these perspectives has clear evidence from all contexts. In particular, there is substantial variation within Europe, and Canada is an important example to study whether the kinless are disadvantaged across multiple dimensions of health. Recent evidence shows that middle-aged and older adults without partners *or* children have worse physical health in the United States, China, and many, but not all other contexts (Margolis & Verdery, 2017; Verdery et al., 2019; Zhou et al., 2019). For example, kinless middle-aged and older adults were far more likely to self-report fair or poor (physical) health in China, Korea, Denmark, Netherlands, Malaysia, and Israel, but the association between family structure and self-rated health was not as large in magnitude in Canada, perhaps owing to the country's more robust social welfare state.

Varying Importance of Family Structure for Physical, Mental, and Social Health by Age, Gender, and Education

The importance of family structure for health and well-being may vary in important ways by age, gender, and education because such factors are strong predictors of network ties.

It could be that substitution of friends or community involvement for family may work well in middle age, but may decline at older ages. It could also be that middle-aged and older adults have many friends until very old ages when friends start to die, and they substitute less readily for family members (Ha, 2008; Zettel & Rook, 2004).

Women may be better able to substitute relatives, friends, or community involvement for close kin than men can, given that they tend to have larger, more diverse social networks (Field & Minkler, 1988; Mair, 2019). Additionally, women have longer life expectancies than men, which may increase their chance of widowhood but may allow for them to better maintain close same-sex friendship ties, which are the majority of friendships (McPherson et al., 2001). We also might see the same pattern for university-educated adults, because they tend to have networks that have a greater proportion of non-kin than less-educated adults (Marsden, 1987; McPherson et al., 2006). However, kinless adults with low levels of educational attainment may be disadvantaged because they do not have a high number of non-kin ties in their network.

Data

Our analysis uses the Canadian General Social Survey Cycle 21 (2007), a survey that focuses on family, social support, and retirement among a large sample of adults aged 45 and older. This is the most recent survey in Canada to address these topics. The two major strengths of these data for these questions are first, that it is a large survey of middle-aged and older adults, necessary to capture the subpopulation of adults without close kin, and second, it includes a broad array of questions about civic involvement, social integration and support, and loneliness. Comparable studies like the Health and Retirement Study in the United States have far fewer measures and only collect them among a small sample of respondents. These data were collected by Statistics Canada via telephone with a 58% response rate. With weights, the data are representative of individuals aged 45 and older living in private households in Canada's 10 provinces, excluding the three northern territories and full-time residents of institutions, 98% of the total population of Canada. The survey includes 23,404 respondents. Our analytic sample includes all respondents who answered questions used for our key independent variables about the presence or absence of a partner and children and our dependent variables. This includes 22,105 respondents (94.4% of all respondents). Respondents who were missing data were, on average, in poorer physical health, less socially connected, and more likely to lack family than those who responded to all these questions.

Measures

We examine three sets of dependent variables. First, self-rated physical health and second, self-rated mental health

(excellent, very good, good, fair, or poor)—both shown to be valid and reliable measures of these aspects of health (Idler & Benyamini, 1997). The third set of dependent variables measures social health, capturing the respondent reports of their social connectedness with family, friends, and the community, and whether they deem their level of connectedness inadequate, that is, whether they feel lonely. Respondents were asked how often they communicated with their extrahousehold relatives and friends, respectively (including telephone, internet/email, fax, or letter). Response categories were every day, a few times a week, a few times a month, once a month, or not in the past month. In addition to examining communicating with family and friends separately, we also examined whether respondents communicated with either family *or* friends every day or less than every day. The next measure of social health captures community involvement—whether or not respondents belonged to any groups or organizations in the last 12 months where people get together regularly to do an activity or to talk about things (e.g., sports or recreational organization, cultural or religious group, service club). The last measure, reported feelings of loneliness, gauges how respondents feel about their connectedness and is measured with the six-item scale that captures both social and emotional loneliness (Cronbach's alpha 0.64) coded according to de Jong Gierveld's instructions (de Jong Gierveld & van Tilburg, 2006). This has been shown to be reliable at above 0.81 across many countries (de Jong Gierveld & van Tilburg, 2010; de Jong Gierveld et al., 2015).

Our main independent variable examines whether respondents have a partner and/or living children. We examine four categories: those with a partner and child(ren), partner and no child(ren), those with children but no partner, and kinless adults with no partner and no child(ren). These categories allow us to test how kinless adults may be similar to other unpartnered adults with children for some outcomes, or whether they are more disadvantaged than those with one type of close kin (either partner or children). We include cohabiting partners in addition to spouses, as well as stepchildren and adopted children in addition to biological children. We also include a group of variables as controls including gender, age, educational attainment, labor force participation, and province, all of which shape health and are likely related to family structure (measurement given in Table 1).

Method

Table 1 examines descriptive statistics for the analytic sample. Next, we estimate a series of multivariable regression models to examine how family structure is associated with physical, mental, and social health. We estimate ordinal logit models for ordinal outcomes (self-rated physical health, self-rated mental health, frequency of communicating with relatives, frequency of communicating with friends, and loneliness) and logit models for the dichotomous outcomes (talking to either friends or family every day and civic participation). We estimate a model for each outcome on the full analytic sample (Table 2). Next, we examine how the relationships between family structure and our outcomes vary by age, gender, and educational attainment, respectively, by estimating a series of models with interactions between family structure and age group (Table 3). We examine adults aged 70 and older because almost all adults have left full-time work by this age, and adults with a university degree because previous research has shown that their networks are uniquely structured with a higher proportion of friends than relatives unlike those with less education. We highlight key findings from these models in Figures 1 and 2.

Sensitivity Analysis

We also conducted additional analyses. First, we examined the frequency of *seeing* relatives and friends, as well as social and emotional loneliness. Results from these analyses (given in Supplementary Appendix) match those presented in the main text. Second, our results are not sensitive to the exclusion of nonmarital partners and nonbiological children. Third, we tested whether the results differed in Quebec compared to the rest of Canada, because Quebec's family structure differs, and found that they did not. Fourth, using multiple imputation for missing data on our control variables did not shift the results.

Results

Table 1 presents the weighted characteristics of the sample. Canadian adults report high levels of physical and mental health, with more than one in five reporting excellent physical health (22%) and almost four in 10 reporting excellent mental health (39%). Note that the correlation between self-rated physical and mental health is 0.49, so although they are correlated, they are also somewhat distinct. Most respondents are fairly well socially connected with family and friends. Most respondents communicate with relatives every day (17.6%) or a few times a week (40.5%), but some adults communicate with relatives infrequently, with 6.4% not communicating with relatives in the last month. We see similarly high levels of communication with friends. More than one quarter communicates with either relatives or friends every day (27%). In addition, a large minority of respondents are involved with a civic organization (43%). The mean level of loneliness on the 0–6 scale was 1.3, where higher levels indicate higher levels of loneliness.

The majority of adults have both a partner and children (65%), but there are sizeable groups with different kin availability. For example, one in five have children but no partner, 8% have a partner but no children, and 7% of middle-aged and older adults have neither a partner nor children.

Table 1. Weighted Sample Characteristics, Canadian General Social Survey 2007, Ages 45 and Older, *N* = 22,105

Dependent variables	% or Mean (*SD*)	Independent variables	%
Physical and mental health		*Family structure*	
Self-rated physical health		Has partner and child(ren)	65.4
Excellent	22.3	Has partner, no child(ren)	7.9
Very good	34.4	No partner, has child(ren)	19.5
Good	28.4	No partner, no child(ren)	7.2
Fair	10.8	% Male	47.9
Poor	4.1	Age group	
Self-rated mental health		45–49	21.2
Excellent	39.0	50–54	19.0
Very good	33.7	55–59	16.4
Good	22.2	60–64	13.0
Fair	3.9	65–69	9.6
Poor	1.1	70–74	7.5
Social health		75–79	6.2
Frequency of communicating with relatives		80+	7.1
Every day	17.6	Education	
Few times/week	40.5	Less than high school	23.1
Few times/month	26.3	High school degree	17.2
Once a month	9.2	Some university/college/trades	34.9
Not in the past month	6.4	University degree	23.6
Frequency of communicating with friends		Missing	1.2
Every day	13.5	% Native-born	77.2
Few times/week	41.2	% Work is main activity	53.2
Few times/month	27.9	Province	
Once a month	8.4	Ontario	38.4
Not in the past month	9.0	Quebec	24.6
% Communicates with relatives or friends every day	27.1	Manitoba	3.5
% Civically engaged	42.9	Saskatchewan	3.0
Mean (*SD*) loneliness (six-item scale, 0–6)	1.3 (1.4)	Alberta	9.0
		British Columbia	13.7
		Eastern Provinces	7.9

Table 2 presents multivariate regression results. For the first two outcomes, self-rated physical and mental health, kinless middle-aged and older adults (no partner or child) report lower levels of these aspects of health, net of controls (physical health: odds ratio [OR] 0.710, mental health: OR 0.687) than those with both a partner and children. However, we see that for these aspects of health, there are no statistical differences between kinless middle-aged and older adults and those with children but no partner. Across these two dimensions of health, the main difference is between those with and without a partner, whether or not they have children.

When we examine the outcomes for social health, we see different patterns in the associations with family structure. Model 3 shows that kinless adults communicate with relatives less frequently than those with either a partner or children or both. Those with both a partner and children and those with children but no partner communicate with relatives outside the household the most (no differences between these groups), followed by those with a partner but no children, and then kinless middle-aged and older adults.

However, a different pattern emerges when we examine the frequency of communicating with friends (Model 4). Kinless middle-aged and older adults and those with children but no partner have higher odds of communicating with friends than those with a partner (whether or not they have children). Similarly, in Model 5, when we estimate the odds of talking with either family or friends every day, we see that it is those without a partner who are more likely to be communicating than those with a partner.

Model 6 estimates the odds of civic engagement. This is the second outcome where we see that kinless middle-aged and older adults are disadvantaged relative to all three categories of middle-aged and older adults with close kin (along with talking with relatives). Those without a partner or children have the lowest odds of participating in the community (OR 0.757) compared to those with a partner and children net of controls, while no other differences between groups emerge.

The last model addresses loneliness (reverse-coded). Here, we see a graded pattern, with those with both types of close kin the least lonely, followed by those with a partner but no children, and with kinless middle-aged and

Table 2. Odds Ratios From Ordinal Logistic Regression and Binominal Logistic Regression Models, 45 and Older (*N* = 22,105)

	Physical and mental health		Social health				
	Self-rated physical health	Self-rated mental health	Frequency of talking with family	Frequency of talking with friends	Talks with family or friends everyday	Civic engagement	Six-item loneliness scale (reverse)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Family structure (Has partner and children)							
Has partner, no children	1.056	0.970	0.862**	1.104	0.988	0.889	0.859**
No partner, has children	0.765***	0.741***	1.067	1.480***	1.480***	0.924	0.599***
No partner, no children	0.710***	0.687***	0.720***	1.320***	1.282***	0.757***	0.545***
Covariates							
Male (female)	0.784***	0.836***	0.485***	0.624***	0.515***	0.901**	0.807***
Age (45–49)							
50–54	0.911*	0.960	0.990	0.889*	1.010	0.999	0.979
55–59	0.835***	1.175**	0.932	0.823***	0.872*	1.089	1.000
60–64	1.065	1.473***	0.943	0.873*	0.874*	1.452***	1.205***
65–69	1.194**	1.614***	0.917	0.821**	0.848*	1.594***	1.299***
70–74	0.982	1.385***	0.857*	0.821**	0.823*	2.108***	1.450***
75–79	0.855*	1.209*	0.832*	0.629***	0.767**	2.002***	1.354***
80+	0.798**	1.050	0.758***	0.486***	0.683***	1.906***	1.546***
Education (less than high school)							
High school degree	1.690***	1.617***	1.125*	1.287***	0.987	1.535***	1.224***
Some university/college/trades	1.722***	1.618***	1.135**	1.366***	1.040	2.092***	1.129**
University degree	2.919***	2.452***	1.118*	1.512***	0.964	4.176***	1.291***
Missing	1.736***	1.603***	1.114	1.294	1.204	1.676**	2.749***
Native-born (foreign-born)	1.472***	1.220***	1.044	1.130**	1.003	1.527***	1.555***
Work was main activity of the last year (not)	2.353***	1.685***	0.940	0.958	0.765***	0.813***	1.257***
Province (Ontario)							
Quebec	1.149***	1.459***	1.167***	0.634***	0.736***	0.623***	0.968
Manitoba	0.994	0.920	1.168*	1.222**	1.244**	1.071	1.118
Saskatchewan	0.865*	0.762***	0.983	1.170*	1.088	1.129	0.954
Alberta	0.966	0.903*	0.964	1.016	0.946	1.069	1.053
British Columbia	1.075	0.913	0.932	1.171**	1.019	1.041	1.055
Eastern Provinces	0.878**	0.840***	1.402***	1.293***	1.384***	0.952	0.944
Cut point 1	0.102***	0.024***	0.048***	0.088***			0.0205***
Cut point 2	0.452***	0.120***	0.131***	0.192***			0.0670***
Cut point 3	2.264***	0.912	0.532***	0.793**			0.161***
Cut point 4	11.775***	4.104***	3.677***	6.593***			0.363***
Cut point 5							0.847*
Cut point 6							2.810***
Constant					0.591***	0.286***	

Notes: Estimates shown as odds ratios. Models 1–4, 7–9: ordinal logistic regression models and Models 5 and 6: binomial logistic regression models. Cut points are shown for all ordinal logistic regression models, which enable calculation of predicted probabilities for different outcome levels.
$***p < .001$, $**p < .01$, $*p < .05$.

Table 3. Odds Ratios From Ordinal Logistic Regression and Binary Logistic Regression Models With Interactions for Age, Gender, and Education, Ages 45 and Older (*N* = 22,105)

	Physical/mental health		Social health				
	Self-rated physical health	Self-rated mental health	Frequency of talking to family	Frequency of talking to friends	Talk to family/ friends everyday	Civic engagement	Loneliness (reverse-coded)
Interaction of age and family structure							
Family structure (Has partner and children)							
Has partner, no children	1.062	0.926	0.906	1.114	1.025	0.866*	0.871*
No partner, has children	0.698***	0.681***	1.011	1.484***	1.429***	0.895*	0.559 ***
No partner, no children	0.692***	0.628***	0.726***	1.312***	1.224**	0.745***	0.539***
70+ (<70)	0.791***	0.827**	0.851**	0.777***	0.816**	1.506***	1.20**
Interaction (Has partner and children × <70)							
Has partner, no children × 70+	0.897	1.173	0.660*	0.957	0.755	1.056	0.813
No partner, has children × 70+	1.319**	1.325**	1.139	0.886	1.077	1.121	1.28**
No partner, no children × 70+	1.109	1.384*	0.965	0.968	1.288	0.964	1.03
Interaction of gender and family structure							
Family structure (Has partner and children)							
Has partner, no children	0.955	0.919	0.829*	1.069	0.943	0.909	0.805
No partner, has children	0.735***	0.789***	1.057	1.463***	1.434***	0.999	0.785**
No partner, no children	0.736***	0.773**	0.802**	1.414***	1.368***	0.895	0.614**
Male	0.762***	0.869***	0.486***	0.624***	0.507***	0.962	0.949
Interaction (Has partner and children × Male)							
Has partner, no children × Male	1.210	1.108	1.076	1.064	1.114	0.958	0.826
No partner, has children × Male	1.127	0.838*	1.042	1.042	1.127	0.804*	0.75
No partner, no children × Male	0.927	0.788*	0.804	0.867	0.855	0.706**	0.772
Interaction of education and family structure							
Family structure (Has partner and children)							
Has partner, no children	1.111	1.008	0.864*	1.147*	0.916	0.863	0.831**
No partner, has children	0.749***	0.746***	1.087	1.422***	1.448***	0.886**	0.586***
No partner, no children	0.682***	0.678***	0.703***	1.176*	1.174*	0.739***	0.554***
College degree	1.956***	1.754***	1.031	1.172***	0.890	2.507***	1.14**
Interaction (Has partner and children × University degree)							
Has partner, no children × University degree	0.884	0.915	0.972	0.886	1.250	1.109	1.1
No partner, has children × University degree	1.008	0.895	0.904	1.180	1.091	1.115	1.08
No partner, no children × University degree	1.164	1.065	1.100	1.493**	1.371*	1.120	0.95

Notes: Estimates shown as odds ratios. Models are estimated separately for each interaction by outcome. All models are estimated using ordinal logistic regression except for binary outcomes ("Talk to family/friends everyday" and "Civic engagement") which are estimated with logistic regression. Models control for all variables included in Table 2.

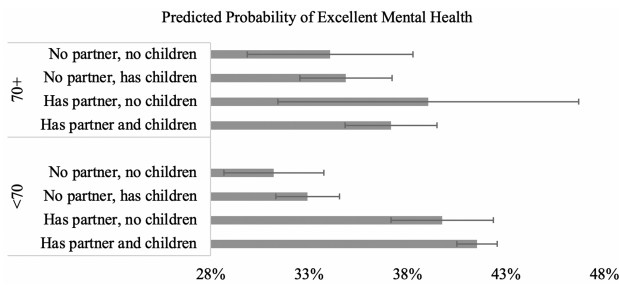***p < .001, **p < .01, *p < .05.

Figure 1. Predicted probability of excellent mental health by family structure and age group.
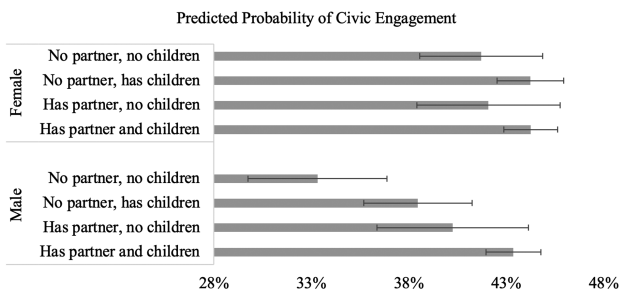

Figure 2. Predicted probability of civic engagement by family structure and gender.

older adults and unpartnered parents reporting the highest levels of loneliness.

Table 3 examines whether the associations between family structure and the three dimensions of health vary by age, gender, and education. The top section tests whether the associations between family structure and health attenuate with age. For physical and mental health as well as loneliness, there seems to be some attenuation of the disadvantages of lacking close kin for those aged 70 and older compared with younger. To visualize these results, Figure 1 presents results for mental health. The predicted probability of excellent mental health differs by a large magnitude by partnership status among those younger than 70, with 31% of those with no close kin reporting excellent mental health, 33% of those with children but no partner, and 40% and 42% of those with partners (and no children, and with children). However, at ages 70 and older, the mental health disadvantage for those without a partner is much lower in magnitude (34%, 35%, 39%, and 37% of having excellent mental health). For the social health outcomes, there is no important attenuation with age.

The second section of Table 3 addresses whether the differences in physical, mental, and social health by family structure vary by gender. Two of the six outcomes differ by gender—mental health and civic participation. We find that men without a partner have even lower odds of high mental health given their family structure than women. Results for civic engagement show that men without a partner that men without a partner are much less likely to

be involved than women lacking these kin. Figure 2 shows the predicted probability of civic engagement by gender and family structure. We can see that there are no significant differences in civic engagement by family structure for women (42%–44% across groups), but for men, those with no partner or children have the lowest probability of civic engagement (33%), followed by those with children but no partner (38%), partner but no children (40%), and then those with both a partner and children (43%).

The bottom section of Table 3 examines whether the importance of family structure for physical, mental, and social health is less important for those with university degrees compared to those with less education. The results here show that physical, mental, and social health outcomes do not differ by education, but that interaction with friends does vary. Supplementary Appendix Figure 1 is estimated from Model 3 in Table 3 and shows kinless middle-aged and older adults with a university degree are very likely to communicate with friends every day. In fact, university-educated middle-aged and older adults without a partner are the most likely (22% and 21%) to talk with friends every day, while those with the same family structure and less education are less integrated with friends. The results for communicating with friends or family show the same pattern of results.

Discussion

The prevalence of kinless middle-aged and older adults is increasing around the world, and Canada has one of the highest rates, with one in 10 adults aged 50 and older with no partner or children (Verdery et al., 2019). This is an important subpopulation to study, given that partners and children are the primary sources of support in older adulthood. What are the associations between physical, mental, and social health and family structure?

In terms of physical and mental health, we find that kinless middle-aged and older adults (lacking a partner and children) report significantly lower levels of health in both realms than those with a partner and children. Our findings show similar levels of physical and mental health between those with no partner or children and those who are also unpartnered, but with children. We see the same pattern for loneliness. This aligns with a great deal of previous research highlighting the broad-based health disadvantage of unpartnered adults (Pienta et al., 2000; Wright & Brown, 2017). These findings may be due to the fact that unpartnered middle-aged and older adults are those most likely to be living alone, and that the residential arrangements of these adults can explain the higher loneliness and worse health of unpartnered adults.

Considering the variation in these associations by age group, gender, and education, we saw some attenuation in these associations older than age 70 for physical and mental health (but not loneliness), some widening of the mental health associations (but not loneliness) for men compared

to women, and some differences by education. If these age-stratified results also apply to future cohorts as they age, these results would suggest that aging remains a great "leveler" of family structure differences in terms of physical and mental health (House et al., 1994), and that older men without family are especially at risk of poor mental health.

On the flip side, despite theoretical expectations for substitution, we find relatively mixed results in terms of social health. Our findings show that kinless middle-aged and older adults have different patterns of social communication with relatives and friends. They are not interacting as much with relatives as their counterparts with children; therefore, we are not seeing a substitution of siblings or cousins for children. However, the kinless have more frequent interaction with friends compared to their counterparts with both a partner and children. This result was especially strong among the university-educated kinless. This accords with some recent research that finds that kinless middle-aged and older adults report more friends in their network (Mair, 2019). We found these results among adults aged 45–69, as well as those 70 and older, and they tend not to vary by gender or education either. On balance, these results highlight tradeoffs and substitutions *do seem to occur* in the networks of middle-aged and older adults, but that such tradeoffs are oriented toward substituting friends rather than more distant kin.

Despite tradeoffs in network relations, levels of civic participation of kinless middle-aged and older adults were significantly below those with more close kin, especially among men. It may be that such individuals are not totally isolated but just not participating in formal civic organizations (Torres, 2019). Or perhaps women are better able or interested in substituting community involvement for social interaction with close kin and act on their more diverse social networks; it could also be their better physical and mental health that allows them to be more involved (Field & Minkler, 1988; Mair, 2019). Prior research has found that parenthood is critical for men's civic involvement earlier in life (Eggebeen & Knoester, 2001), so although these associations are not limited to later life, they are concerning, especially because a lack of civic engagement is an important predictor of cognitive impairment (Infurna et al., 2016).

This article did not address all aspects of well-being and social support. For example, our analysis focused on volume of interaction as components of social health, how frequently respondents talked to and saw relatives and friends. It may be that kinless middle-aged and older adults with strong friend networks may still experience disadvantages because friends may not offer as *much* support compared with family members (Nocon & Pearson, 2000; Wu & Pollard, 1998). However, emotional support from friends may be more effective than from family in reducing loneliness, especially after being widowed (Utz et al., 2014). Related to being widowed, this analysis did not consider pathways to being kinless, such as being never married, divorced, or widowed, or whether respondents had always been childless or had lost children. Because this analysis relies on cross-sectional data, it is limited in the processes that can be examined—the threat of omitted variable bias and the possibility of reverse causation limit us to offer associational findings. Last, our analysis excluded respondents missing key data, who were, on average, in poorer physical health, less socially connected, and more likely to lack family than those who responded to all questions. This means that our results may underestimate the risk profile of kinless adults in Canada.

Despite limitations, this article addresses a set of important questions about a substantial and growing population of middle-aged and older adults without close kin in Canada. The kinless do not seem objectively socially isolated, as their greater interaction with friends substitutes for interactions with relatives. However, their lower levels of physical and mental health, as well as lower civic participation and higher loneliness are worrying. These results may differ in contexts with weaker social programs and higher rates of older adult poverty. Canada also has a comparatively high urbanization rate, which may also play a role in facilitating the broader social participation of older adults. Future scholarship should continue to attend to cross-national differences in the ways that family structure influences health in middle-age and older adulthood, including how factors like urbanization contribute to this vital aspect of population health.

Supplementary Material

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

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Conflict of Interest

None declared.

Author Contributions

R. Margolis and A. M. Verdery planned the study, R. Margolis and X. Chai performed the data analysis, L. Newmyer helped with figures and tables, and R. Margolis led the writing of the article with all coauthors contributing.

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