

# Dependent seniors at home—formal and informal help

Sylvie A. Lafrenière, Yves Carrière, Laurent Martel and Alain Bélanger

## Abstract

### Objectives

This article documents the number of hours of help that seniors living in private households received from formal and/or informal sources in 1996.

### Data source

Data are from Cycle 11 of the General Social Survey, conducted in 1996. This analysis focuses on 1,089 respondents aged 65 or older who, because of a long-term health problem, required assistance to remain in their homes and who indicated the source of assistance and the amount of help time received.

### Analytical techniques

Analysis of variance, followed by Tukey's HSD test, was used to examine differences in help time received from each source. Medians are presented using an independent medians test. Linear regression was used to model associations between the amount of help time received from each source and certain characteristics.

### Main results

In 1996, dependent seniors living in the community received a median of 3 hours of help a week. Most of this assistance came from informal sources. Living arrangements and age were the major influences on hours received from informal sources. Having no surviving children and being disabled in terms of dexterity or mobility/flexibility were associated with increased hours of formal care. For those getting both types of help, increased hours from formal sources did not significantly reduce the hours received from informal sources.

### Key words

aged, formal care, informal care, instrumental activities of daily living, activities of daily living

### Authors

Sylvie A. Lafrenière (613-951-7197; SylvieA.Lafreniere@statcan.ca) is with the Census Operations Division, and Yves Carrière, Laurent Martel and Alain Bélanger are with the Demography Division, all at Statistics Canada, Ottawa, Ontario, K1A 0T6.

As the baby boom generation ages, the number and proportion of elderly people in the Canadian population will increase sharply. Almost inevitably, age brings limitations that can impair an individual's ability to live independently. Many seniors require help performing some or all of the activities generally recognized as being essential to remaining in their own homes: everyday housework, grocery shopping, meal preparation and personal care.

Generally, dependent seniors who remain in their homes receive most of the help they need from an informal network of family, friends and neighbours.<sup>1-5</sup> Those who are older and/or have a limited informal network may rely more on formal sources such as government or non-government agencies, for-profit or not-for-profit organizations, or paid individuals.<sup>6-8</sup> Also, with advancing age, the likelihood of receiving help from both informal and formal sources tends to increase.<sup>8</sup>

## Methods

### Data source

This article is based on data from Cycle 11 of the General Social Survey (GSS), conducted in 1996. The GSS began in 1985 with two objectives: to gather cross-sectional information on social trends so that Canadians' living conditions and well-being could be monitored over time, and to provide information on social policy issues. Cycle 11, Social and Community Support, was developed to examine the dynamic between individuals' social networks and the help they receive and provide, and to identify unmet needs.

The target population for the GSS was all Canadian residents aged 15 or older living in private households in the 10 provinces. Residents of the Northwest and Yukon territories and full-time residents of institutions were excluded. The sample population was selected using random digit dialling. To minimize seasonal effects, data collection took place monthly from February through December 1996. Information was collected using computer-assisted telephone interviewing; therefore, households without a telephone were excluded (about 2% of the target population).

When a private household was contacted, all members of that household were listed, and basic information (age and sex, for example) was collected for each person. One household member aged 15 or older was randomly selected to answer the GSS questionnaire. If this person could not be interviewed because of health reasons, another household member provided proxy responses.

Responses were obtained from a sample of 12,756 individuals, which includes an "over-sampling" of people aged 65 or older: 1,250 sponsored by the Seniors' Directorate of Health Canada, and 700 from Québec, sponsored by l'Institut de la statistique du Québec (formerly le Bureau de la statistique du Québec). The response rate was 85.3%. Of the 5,952 respondents aged 65 or older, 1,380 (an estimated 19.6% of seniors in private households) stated that because of a long-term health problem they had received help with at least one of the following tasks: everyday housework, grocery shopping, meal preparation and personal care. Among these respondents, 1,089 (79%) indicated the source of the help and the time devoted to performing the tasks; these respondents were retained for this analysis.

### Analytical techniques

The GSS contains several variables that indicate how often help is received for everyday housework, grocery shopping, meal

preparation and personal care, and the time devoted to each of these tasks. These data were combined to calculate the weekly number of hours of help received from informal, formal and both sources.

Since the hours of help received do not follow a "normal" statistical distribution, the average is not an appropriate measure of central tendency. Therefore, the median was calculated. An independent medians test determined which medians were significantly different. A variance analysis was used to examine differences between the number of hours of assistance received by seniors who relied on informal sources only, on formal sources only, or on a combination of formal and informal sources. Tukey's HSD test was then used to determine which of the three groups differed significantly from the others.

Linear regression was used to model associations between the amount of help time seniors received from each source and the independent variables in the bivariate analysis: sex, age, education, living arrangements, number of surviving children, number of surviving siblings, and type of disability. A quadratic expression ( $age^2$ ) was added to account for the non-linear effect of age.

Five separate regressions were modelled. The first measures the association between the various factors and the total number of hours of help received. The others measure associations between the factors and hours of assistance received by seniors who depended on informal sources only, on formal sources only, or on mixed sources. A final regression focuses on factors associated with the number of hours of help received from informal sources by seniors getting mixed assistance to determine, all else being equal, if an increase in formal hours affected the hours received from the informal network. For the multivariate analysis, the time variable was changed to compensate for the heteroscedasticity of the distribution; the time logarithm was used in the regression models.

The data were weighted so that the sample represents the population living in private households. The complex sampling design of the GSS presents a problem in deriving unbiased estimates of the variance. To partially reduce such bias, the weights were normalized (by dividing each weight by the global average weight) so their average weight was equal to 1. However, confidence intervals reported for this analysis should be viewed with caution because this method of calculation does not fully account for the survey design.

The challenges involved in properly caring for the elderly are not new. However, baby boomers have had fewer children than previous generations, so the support they can anticipate from adult children is reduced. Other factors will also affect the supply and availability of caregivers, including changes in marital status and living arrangements, and greater geographic mobility of children.

A recent study identified factors associated with the probability that dependent elderly people in private households would receive informal, formal or both types of help.<sup>9</sup> That study showed that 42% of those receiving help got it from informal sources only, 34% from formal sources only, and 24% from a combination of the two. However, the analysis did not assess the degree of involvement of these networks. Using data from Cycle 11 of the General Social Survey, this article examines the weekly hours of assistance community-dwelling seniors with long-term health problems received from informal and formal sources (see *Methods, Definitions and Limitations*). The number of hours of help from each network is analyzed and compared in terms of its importance in each of the support networks. The factors associated with increased help time from the various sources, as well as the effect of receiving formal services on informal time, is examined using multivariate analysis.

Quantifying the help that the elderly household population receives from various sources provides a greater understanding of the involvement of formal and informal networks, an important issue as the elderly population increases.

### Half a million receiving help

In 1996, more than half a million seniors with a long-term disability (an estimated 532,000) were living at home and reported getting help with at least one of the following activities: everyday housework, grocery shopping, meal preparation and personal care. Almost half (47%) of them were in their seventies, and more than a third (36%) were aged 80 or older (Table 1). Close to two-thirds were women. A substantial percentage lived alone (39%), although the largest group (43%) lived with their spouse, and 19% lived with others. Around three-

Table 1  
Selected characteristics of dependent seniors, household population, Canada excluding territories, 1996

	Sample size	Estimated population	
		'000	%
<b>Both sexes</b>	<b>1,089</b>	<b>532</b>	<b>100.0</b>
Men	376	184	34.6
Women	713	348	65.4
<b>Age group</b>			
65-69	177	86	16.2
70-74	259	126	23.8
75-79	257	126	23.6
80-84	192	94	17.7
85+	204	100	18.7
<b>Education†</b>			
Elementary or less	301	147	30.5
At least some secondary	419	205	42.4
At least some postsecondary	268	131	27.1
<b>Living arrangements</b>			
Alone	422	206	38.7
With others, not spouse	202	99	18.5
With spouse	465	227	42.7
<b>Surviving children†</b>			
None	123	60	11.6
One	150	73	14.1
Two+	790	386	74.3
<b>Surviving siblings†</b>			
None	225	110	21.5
One	198	97	18.9
Two+	624	305	59.6
<b>Type of disability‡</b>			
Mobility/Flexibility	665	325	61.1
Pain and discomfort	521	254	47.8
Cognition	497	243	45.7
Communication§	319	156	29.3
Dexterity	157	76	14.4

**Data source:** 1996 General Social Survey

† Detail does not add to total because "missing" category excluded.

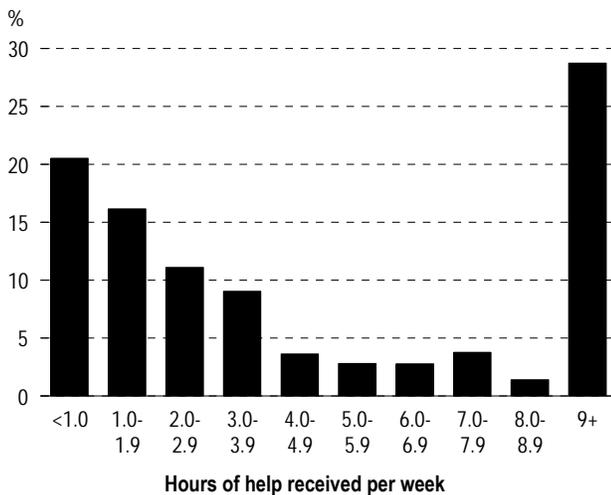
‡ Multiple responses permitted

§ Vision, hearing, speech

quarters of them had at least two surviving children, and a similar proportion had at least one surviving sibling.

The most common disability, affecting 61% of these seniors, was a mobility/flexibility problem. Disability stemming from chronic pain and discomfort was reported by close to half (48%), and almost as many (46%) had impaired cognitive abilities. Communication problems (vision, hearing, speech) and dexterity problems were less common, affecting 29% and 14%, respectively.

Chart 1  
Distribution of dependent seniors, by weekly hours of help reported, household population, Canada excluding territories, 1996



Data source: 1996 General Social Survey

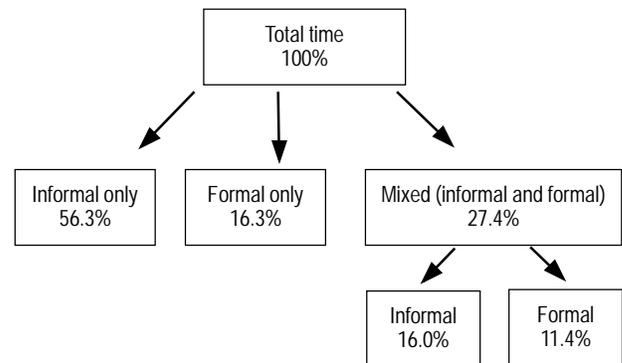
By definition, all the seniors in this analysis were receiving help because of a long-term health problem. However, a substantial number were getting by with relatively few hours of assistance: 20% reported less than an hour a week, and half, no more than three hours (Chart 1). On the other hand, 29% reported at least 9 hours. Overall, these seniors received a median of 3 hours of help a week.

### Informal help dominates

Informal sources dominated in the provision of assistance to dependent elderly people in 1996 (Chart 2). More than half (56%) the total amount of help time received that year was reported by seniors who relied only on informal sources. Just 16% of the time was accounted for by those whose assistance came solely from formal sources. The remaining 27% of the time was reported by seniors who received both informal and formal help (mixed). But even within this mixed help, over half the hours came from informal sources. Thus, in total, informal networks provided close to three-quarters (72%) of all the hours of assistance that these seniors received.

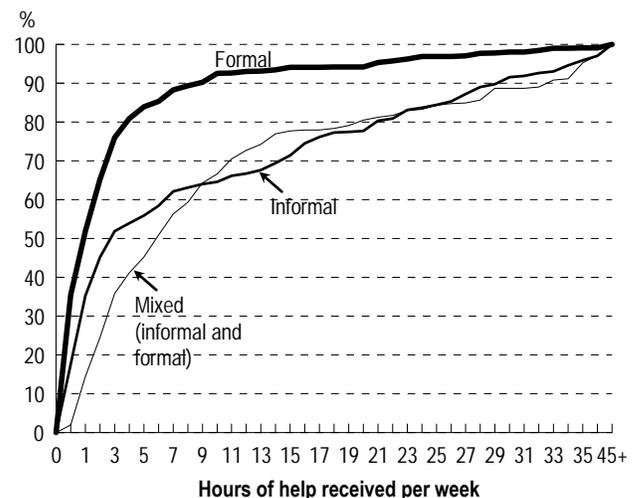
The number of hours of help that seniors received varied with the source of assistance. More

Chart 2  
Distribution of help time reported by dependent seniors, by source of help, household population, Canada excluding territories, 1996



Data source: 1996 General Social Survey

Chart 3  
Cumulative distribution of weekly hours of help reported by dependent seniors, by source of help, household population, Canada excluding territories, 1996

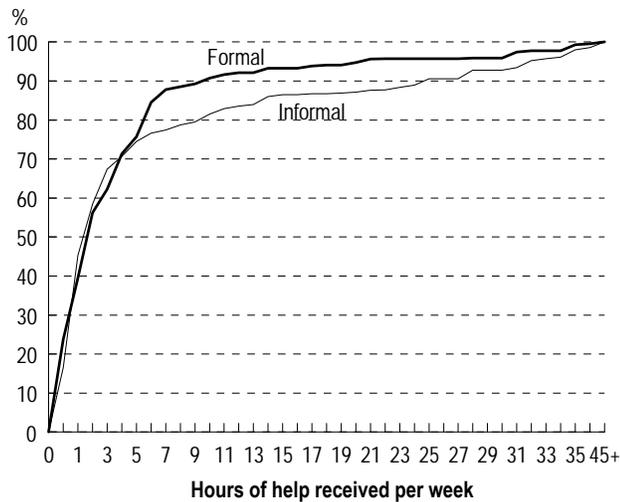


Data source: 1996 General Social Survey

Note: A variance analysis shows a significant difference between the groups ( $F = 42.080$ ;  $p = 0.000$ ), and a Tukey HSD test shows a significant difference ( $p = 0.000$ ) between formal and informal, and between formal and mixed. The difference between informal and mixed is not significant.

than half the people relying only on formal sources reported less than an hour a week, and just 10% reported 9 or more hours (Chart 3). By contrast, 36% of seniors receiving only informal assistance, and 36% getting mixed help, reported 9 or more hours.

Chart 4  
**Cumulative distribution of weekly hours of help reported by dependent seniors receiving mixed help, by source of help, household population, Canada excluding territories, 1996**



Data source: 1996 General Social Survey

Among those getting mixed help, more than 60% received no more than 3 hours a week from either formal or informal sources (Chart 4). However, 10% of mixed help recipients reported 10 or more hours from formal services, and 10% reported at least 25 hours from informal sources.

**Factors associated with help time received**

The median number of hours of assistance seniors received varied with their characteristics and circumstances: sex, age group, education, living arrangements, surviving children and siblings, and type of disability (Table 2). But these variables do not exist in isolation. For instance, at older ages, death of a spouse may result in living alone, and advancing age often brings higher levels of disability. The possibility of such confounding effects must be taken into account to determine which factors were significantly associated with the number of hours of assistance dependent seniors received.

Median hours of help also depended on the source. Seniors who relied exclusively on formal sources reported a median of 1.8 hours a week; for those assisted by informal sources alone, the median was 3.5 hours; and for those getting help from mixed sources, 6.5 hours.

Table 2  
**Median number of weekly hours of help reported by dependent seniors, by source of help, household population, Canada excluding territories, 1996**

	Source of help			
	Total	Informal only	Formal only	Mixed (informal + formal)
	Median hours per week			
<b>Both sexes</b>	<b>3.0</b>	<b>3.5</b>	<b>1.8</b>	<b>6.5</b>
Men	3.1	7.0*	2.0	11.5*
Women	3.0	3.0*	1.8	5.5*
<b>Age group</b>				
65-69	2.9*	3.5	2.0	5.5*
70-74	3.0*	3.0	1.8	7.0*
75-79	2.8*	3.0	1.5	6.7*
80-84	3.0*	4.0	1.5	4.0*
85+	4.0*	3.5	2.0	10.5*
<b>Education</b>				
Elementary or less	3.5*	3.5	1.9	8.0*
At least some secondary	2.5*	3.5	1.8	5.5*
At least some postsecondary	2.1*	2.0	1.4	4.0*
<b>Living arrangements</b>				
Alone	2.0*	1.0*	1.6*	4.0*
With others, not spouse	9.5*	13.0*	3.0*	8.0*
With spouse	3.0*	5.4*	1.8*	11.0*
<b>Surviving children</b>				
None	3.0	5.0	2.8*	6.0
One	3.5	3.5	2.0*	10.0
Two+	3.0	3.5	1.5*	6.0
<b>Surviving siblings</b>				
None	2.0	2.0	1.8	6.0
One	3.1	5.0	1.8	7.2
Two+	3.0	3.5	1.6	5.5
<b>Type of disability</b>				
Mobility/Flexibility	4.0*	7.0*	2.3*	8.0*
Pain and discomfort	3.0	3.5	2.0*	6.0
Cognition	3.7*	7.0*	2.0	7.2
Communication †	4.5*	7.7	1.9	7.3
Dexterity	10.5*	7.0	10.5*	14.5*

Data source: 1996 General Social Survey

† Vision, hearing, speech

\* Significant difference according to independent medians test (p < 0.05)

Even when the other variables were accounted for, exclusive reliance on formal sources tended to be associated with significantly fewer hours of help than were reported by seniors whose help came only from informal sources (Table 3). By contrast, seniors receiving help from mixed sources reported significantly more hours of assistance than did those depending only on informal sources.

Table 3

Regression coefficients relating selected characteristics to total amount of help time reported by dependent seniors, household population, Canada excluding territories, 1996

	B	95% confidence interval	beta
<b>Sex</b>			
Men	0.178	-0.005, 0.361	0.057
Women <sup>†</sup>	...	...	...
<b>Age (65-99)</b>			
Age	0.019	-0.182, 0.220	0.099
Age <sup>2</sup>	-0.000	-0.001, 0.001	-0.082
<b>Education</b>			
Elementary or less <sup>†</sup>	...	...	...
At least some secondary	-0.022	-0.222, 0.178	-0.007
At least some postsecondary	-0.144	-0.368, 0.081	-0.042
<b>Living arrangements</b>			
With spouse <sup>†</sup>	...	...	...
Alone	-0.484*	-0.687, -0.281	-0.159*
With others, not spouse	0.393*	0.150, 0.636	0.104*
<b>Surviving children</b>			
None	0.422*	0.167, 0.677	0.091*
One	0.151	-0.083, 0.385	0.035
Two+ <sup>†</sup>	...	...	...
<b>Surviving siblings</b>			
None	-0.046	-0.253, 0.162	-0.013
One	0.089	-0.125, 0.302	0.023
Two+ <sup>†</sup>	...	...	...
<b>Type of disability</b>			
Mobility/Flexibility <sup>†</sup>	0.330*	0.153, 0.507	0.109*
Pain and discomfort <sup>†</sup>	0.025	-0.138, 0.188	0.008
Cognition <sup>†</sup>	0.181*	0.016, 0.345	0.061*
Communication <sup>‡§</sup>	0.054	-0.131, 0.239	0.017
Dexterity <sup>†</sup>	0.537*	0.295, 0.779	0.127*
Missing	0.076	-0.186, 0.338	0.016
<b>Type of help received</b>			
Informal only <sup>†</sup>	...	...	...
Formal only	-0.647*	-0.837, -0.456	-0.207*
Mixed (informal and formal)	0.536*	0.307, 0.764	0.144*

Data source: 1996 General Social Survey

<sup>†</sup> Reference category

<sup>‡</sup> Reference category is absence of the disability.

<sup>§</sup> Vision, hearing, speech

\*  $p < 0.05$

$N = 1046$ ;  $R^2 = 23.9\%$ ;  $df = 20$

... Not applicable

## Involvement of network depends on seniors' characteristics

The number of hours of help received by seniors relying on a particular type of network varied with their socio-demographic characteristics (Table 4). Among seniors who relied only on *informal* sources, those living alone reported significantly less help time than did those who were living with a spouse.

## Definitions

Three types of help for dependent seniors living at home were identified: *informal*, *formal* and *mixed* (a combination of both). Informal help is performed by family, friends and neighbours. Formal help is provided by employees of profit or not-for-profit organizations and paid individuals (excluding members of the informal network). When both types of help are received, it is considered mixed.

The tasks for which assistance was received and which define "dependent" in this analysis are: everyday housework, grocery shopping, meal preparation, and personal care (bathing, toileting, care of toenails and fingernails, brushing teeth, shampooing or hair care and dressing).

For the descriptive analyses, respondents were assigned to one of the following *age groups*: 65 to 69, 70 to 74, 75 to 79, 80 to 84, and 85 or older.

*Education* was categorized as: elementary or less; at least some secondary; and at least some postsecondary.

Three types of *living arrangements* were identified: with a spouse; alone; and with others (including a child or parent), but not a spouse.

The *number of surviving children* and the *number of surviving siblings*—none, one, or two or more—were also considered.

Five types of *disability* were identified: mobility/flexibility problems, limitations because of pain and discomfort, cognition difficulties, problems with communication, and dexterity. People who reported difficulty getting around in their home or neighbourhood, trouble getting out of a bed or a chair, or problems caring for their feet were considered to have mobility/flexibility problems. Pain and discomfort were considered a disability for seniors who reported that their activities were limited because of such problems. Seniors whose cognitive state ranged from being a little or somewhat forgetful and having some difficulty thinking to being unable to remember or think at all were considered to have a cognitive disability. A communication disability refers to respondents who indicated that they had an uncorrected vision, hearing and/or speech problem. Dexterity refers to the ability to use one's hands and fingers; that is, manipulating small objects (such as shirt buttons) and co-ordination (using scissors, for example).

Seniors living with others (not a spouse) received the greatest amount of informal help. The causal link, however, is uncertain. It may be that the need for help instigated this living arrangement. Sharing a household may be a way of coping with long-term health problems.

Table 4  
**Regression coefficients relating selected characteristics to amount of help time reported by dependent seniors, by source of help, household population, Canada excluding territories, 1996**

	Informal only				Formal only				Mixed (informal + formal)			
	B	95% confidence interval		beta	B	95% confidence interval		beta	B	95% confidence interval		beta
<b>Sex</b>												
Men	0.254	-0.057, 0.565	0.077	0.041	-0.231, 0.312	0.016	0.073	-0.274, 0.420	0.029	...	...	...
Women†	...	...	...	...	...	...	...	...	...	...	...	...
<b>Age (65-99)</b>												
Age	0.355*	0.047, 0.664	1.790*	-0.320	-0.693, 0.053	-1.746	-0.207	-0.549, 0.135	-1.413	0.001	-0.001, 0.004	1.551
Age <sup>2</sup>	-0.002*	-0.004, 0.000	-1.791*	0.002	0.000, 0.004	1.732	0.001	-0.001, 0.004	1.551	...	...	...
<b>Education</b>												
Elementary or less†	...	...	...	...	...	...	...	...	...	...	...	...
At least some secondary	0.025	-0.278, 0.327	0.007	0.032	-0.317, 0.382	0.013	-0.225	-0.593, 0.144	-0.103	-0.292	-0.685, 0.101	-0.127
At least some postsecondary	-0.141	-0.512, 0.230	-0.035	-0.025	-0.398, 0.348	-0.009	-0.292	-0.685, 0.101	-0.127	...	...	...
<b>Living arrangements</b>												
With spouse†	...	...	...	...	...	...	...	...	...	...	...	...
Alone	-1.259*	-1.619, -0.900	-0.347*	0.108	-0.172, 0.388	0.043	-0.532*	-0.915, -0.149	-0.251*	0.390*	0.022, 0.757	0.110*
With others, not spouse	0.390*	0.022, 0.757	0.110*	0.212	-0.345, 0.769	0.040	-0.130	-0.555, 0.295	-0.048	...	...	...
<b>Surviving children</b>												
None	0.140	-0.309, 0.590	0.026	0.416*	0.081, 0.751	0.129*	0.284	-0.292, 0.860	0.061	-0.019	-0.417, 0.379	-0.004
One	-0.019	-0.417, 0.379	-0.004	0.362	-0.009, 0.733	0.100	0.214	-0.149, 0.577	0.077	...	...	...
Two+†	...	...	...	...	...	...	...	...	...	...	...	...
<b>Surviving siblings</b>												
None	-0.123	-0.485, 0.239	-0.031	0.121	-0.190, 0.433	0.041	0.014	-0.330, 0.358	0.006	0.129	-0.246, 0.503	0.029
One	0.129	-0.246, 0.503	0.029	-0.014	-0.332, 0.303	-0.005	0.058	-0.278, 0.395	0.023	...	...	...
Two+†	...	...	...	...	...	...	...	...	...	...	...	...
<b>Type of disability</b>												
Mobility/Flexibility†	0.189	-0.100, 0.478	0.058	0.360*	0.103, 0.616	0.145*	0.473*	0.106, 0.840	0.169*	-0.108	-0.370, 0.155	-0.034
Pain and discomfort†	-0.108	-0.370, 0.155	-0.034	0.094	-0.165, 0.352	0.038	0.088	-0.197, 0.373	0.042	0.237	-0.036, 0.509	0.074
Cognition‡	0.237	-0.036, 0.509	0.074	0.164	-0.103, 0.432	0.066	0.082	-0.190, 0.354	0.039	0.210	-0.091, 0.510	0.062
Communication‡§	0.210	-0.091, 0.510	0.062	-0.192	-0.499, 0.115	-0.065	0.082	-0.227, 0.390	0.036	0.025	-0.382, 0.432	0.005
Dexterity‡	0.025	-0.382, 0.432	0.005	1.435*	0.948, 1.922	0.302*	0.598*	0.265, 0.931	0.257*	-0.065	-0.510, 0.380	-0.012
Missing	-0.065	-0.510, 0.380	-0.012	0.097	-0.321, 0.514	0.025	0.416*	0.017, 0.816	0.138*	...	...	...

Data source: 1996 General Social Survey

Note: Because of rounding, confidence interval with 0 as upper limit may be significant.

† Reference category

‡ Reference category is absence of the disability.

§ Vision, hearing, speech

\*  $p < 0.05$

N = 485; R<sup>2</sup> = 20.8%; df = 18 for informal only

N = 354; R<sup>2</sup> = 14.9%; df = 18 for formal only

N = 207; R<sup>2</sup> = 25.6%; df = 18 for informal and formal

... Not applicable

Age also had a significant impact on the number of hours of assistance reported by seniors whose help came exclusively from informal sources. Weekly hours increased with advancing age up to about age 80, and then decreased. This likely reflects a greater probability of receiving formal assistance and higher rates of institutionalization as health declines with advancing age (creating a selection effect in the private household sample).

Men relying exclusively on informal sources reported a higher median number of hours of assistance than did their female counterparts. However, when the effects of the other variables were considered, the difference was no longer significant mainly because living arrangements account for the presence of a spouse. Similarly, an apparent association between hours of informal help and various disabilities disappeared when the other variables were taken into account.

Among seniors who reported that their assistance came only from *formal* sources, the number of surviving children was associated with hours of help received. Having no children significantly increased hours of formal assistance, a relationship that persisted even when the other variables were taken into account. Two types of disability—dexterity and mobility/flexibility problems—were also associated with increased help from formal sources only.

For seniors reporting *mixed* help, the number of hours was associated with living arrangements.

Table 5  
**Regression coefficients relating selected characteristics to amount of informal help time reported by dependent seniors receiving mixed help, household population, Canada excluding territories, 1996**

	B	95% confidence interval	beta
<b>Sex</b>			
Men	0.163	-0.283, 0.610	0.049
Women <sup>†</sup>	...	...	...
<b>Age (65-99)</b>			
Age	-0.208	-0.648, 0.232	-1.079
Age <sup>2</sup>	0.001	-0.001, 0.004	1.093
<b>Education</b>			
Elementary or less <sup>†</sup>	...	...	...
At least some secondary	-0.418	-0.893, 0.056	-0.146
At least some postsecondary	-0.287	-0.793, 0.218	-0.095
<b>Living arrangements</b>			
With spouse <sup>†</sup>	...	...	...
Alone	-1.065*	-1.561, -0.569	-0.382*
With others, not spouse	-0.229	-0.776, 0.318	-0.065
<b>Surviving children</b>			
None	0.568	-0.175, 1.310	0.093
One	0.509*	0.043, 0.976	0.139*
Two+ <sup>†</sup>	...	...	...
<b>Surviving siblings</b>			
None	-0.142	-0.585, 0.300	-0.044
One	-0.319	-0.757, 0.118	-0.096
Two+ <sup>†</sup>	...	...	...
<b>Type of disability</b>			
Mobility/Flexibility <sup>‡</sup>	0.381	-0.091, 0.854	0.104
Pain and discomfort <sup>‡</sup>	-0.077	-0.443, 0.290	-0.028
Cognition <sup>‡</sup>	0.147	-0.204, 0.497	0.052
Communication <sup>§</sup>	-0.052	-0.449, 0.345	-0.018
Dexterity <sup>‡</sup>	0.861*	0.421, 1.301	0.280*
Missing	0.230	-0.287, 0.747	0.058
<b>Formal in mixed</b>	-0.999	-0.250, 0.050	-0.088

**Data source:** 1996 General Social Survey

<sup>†</sup> Reference category

<sup>‡</sup> Reference category is absence of the disability.

<sup>§</sup> Vision, hearing, speech

\*  $p < 0.05$

$N = 207$ ;  $R^2 = 29.0\%$ ;  $df = 19$

... Not applicable

Those living alone received significantly less mixed help time than did those living with a spouse. As well, dexterity or mobility/flexibility problems tended to increase the hours of mixed help. Apparent relationships between mixed help time and age, sex and education were not significant when the effects of other factors such as living arrangements and health problems were accounted for.

For seniors receiving mixed help, an increase in hours from formal sources was accompanied by an apparent decrease in hours from informal sources. However, the decline was not statistically significant (Table 5). This suggests that formal sources complement, but do not replace, informal sources, a finding consistent with recent research.<sup>10,11</sup>

### Limitations

Because the General Social Survey (GSS) is cross-sectional, it is not possible to examine how the involvement of the informal and formal networks develops over time. In addition, important characteristics of the help provider are not available. Especially in the case of the informal network, these characteristics may have significant consequences for the nature of the help available and the total number of hours that can be provided. For instance, a younger spouse in good health is likely to be more able to offer assistance than an older spouse who might have disabilities.<sup>9</sup> Also, the health and geographic proximity of children can affect their ability to provide help.

The amount of assistance, particularly informal care, that seniors living in the community report may be underestimated because the GSS results do not account for "invisible" care: organizing services, making appointments, doing errands, and so on, is often done without the knowledge of the recipient. As well, this analysis, does not consider time spent giving emotional support or checking on seniors, which may be important for their ability to continue to live in a private household.

The results do not include seniors in private households who needed help but did not receive it, or those who were living in institutions. Accordingly, the portrait drawn in this article is somewhat incomplete. For example, the finding that cognitive problems did not significantly increase the number of hours of assistance received may be because such problems often result in institutionalization.

Finally, the adequacy of the assistance that respondents received was not analyzed in this study.

## Concluding remarks

According to the General Social Survey, in 1996, an estimated 532,000 seniors with long-term health problems who were living in private households received formal and/or informal help with at least one of these tasks: everyday housework, grocery shopping, meal preparation, and personal care. More than 40 minutes out of every hour of this assistance came from informal sources, such as family, friends and neighbours.

Among seniors relying only on informal sources, living arrangements and age were the major influences on the number of hours of help they received. For those relying only on formal care, having no surviving children and being disabled in terms of dexterity or mobility/flexibility were key to the number of hours of assistance. These disabilities were also associated with increased help time for seniors reporting mixed sources. It may be that formal sources are sought when disabilities become more severe. The association with such health problems may also reflect the nature of the tasks used to define dependency; day-to-day household chores and personal care require a degree of dexterity and mobility/flexibility.

The other disabilities considered—problems with communication or cognition and pain and discomfort—did not significantly affect hours of assistance received, regardless of the source. It is likely that serious cognitive problems or severe pain would preclude living at home, and that many people with such disabilities are institutionalized and so were not part of this analysis.

Dependent seniors who lived alone and were receiving help from informal sources only or from mixed sources reported fewer hours than did those living with other people. This may indicate that those who live alone are particularly vulnerable—an important issue when assessing the resources needed to enable dependent seniors to remain in their homes, particularly as the number of elderly people living alone has been increasing steadily.<sup>12</sup> In fact, it may be that the availability of informal help in the household allows seniors to avoid or delay residential care.

It is also telling that seniors relying on formal sources alone received considerably fewer hours of assistance than those who could count on informal support. An earlier study found that seniors who were not getting informal support had the greatest unmet needs for help with activities of daily living.<sup>13</sup>

The results suggest that currently the formal network complements but does not substitute for the informal network. This has implications for the services that will be necessary in the future. The population is aging, but at the same time, smaller family size will reduce the availability of informal support. Lacking the assistance of children and other relatives that was available to previous generations, baby boomers facing long-term health problems may encounter more difficulty remaining in the community, unless a greater burden is placed on the limited informal network, or more resources are made available through home care programs. ●

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