Chronic conditions, physical limitations and dependency among seniors living in the community

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Abstract

The majority (75%) of people aged 55 and over who live in the community, as opposed to living in long-term health care institutions, report having at least one chronic condition. However, only about one in six has some physical limitation. As well, one in six men and one in four women who live in the community need help with everyday activities such as housework or meal preparation. With advancing age, the prevalence of most chronic conditions increases, as does the prevalence of physical problems and dependency.

The contribution of particular conditions to physical limitations and dependency varies. According to Statistics Canada's 1994-95 National Population Health Survey, the conditions most strongly related to physical limitations and to the need for help with activities of daily living were epilepsy and the effects of stroke, neither of which affected a large percentage of the household population aged 55 and over. By contrast, arthritis/rheumatism, non-arthritic back problems and cataracts, which were also associated with physical limitations and dependency, affected a relatively large percentage of community-dwelling seniors.

This article shows the prevalence of specific chronic conditions, physical limitations and dependency among people aged 55 and over living in the community, by sex and age. Logistic regression is used to examine relationships between each chronic condition and the existence of physical limitations and dependency.

Key words: *disabled, activities of daily living, chronic disease*

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It is well known that the prevalence of most chronic conditions increases with age, and that some of them have particularly disabling effects.[a] Less well understood is the degree to which particular chronic conditions contribute to physical limitations and dependency. Some that entail a great deal of debility are quite rare among the household population aged 55 and over, because people with these conditions are likely to be in long-term health care institutions.[1] But a number of other conditions, which are also associated with considerable physical limitation and dependency, are relatively common among community-dwelling seniors.

The public health consequences of particular chronic conditions vary. Seniors with very disabling conditions are at imminent risk of institutionalization. Most people, though, are living with conditions that are somewhat less debilitating. Information about the prevalence of such conditions, together with the physical limitations and dependency associated with each, provides some indication of the support required to enable people to continue to live in the community and to "age in place."

Using data from the household component of Statistics Canada's 1994-95 National Population Health Survey (NPHS), this article shows the prevalence of various chronic conditions, physical limitations, and dependency among people aged 55 and over living in the community (see *Methods*). The article then goes on to examine the relationship of specific chronic conditions to physical limitations and dependency.

[a] *For ease of reference, the generic term "chronic conditions" is used in this article to refer collectively to the various chronic conditions and diseases listed in the Appendix.*

Differences between men and women

Differences in demographic, socioeconomic and lifestyle characteristics could have an effect on the prevalence of various chronic conditions among men and women aged 55 and over living in the community. For instance, more senior women survive to older ages—23% of women, compared with 19% of men, were aged 75 or over (Table 1). A much higher percentage of senior men were living with a partner, and they were more likely than women to be in households with adequate income. Health-related behaviour differed as well, with a larger share of men than women describing themselves as physically active and regular drinkers. Senior men were also considerably less likely than women to have never smoked.

Most seniors have chronic conditions

The majority of the household population aged 55 and over—72% of men and 78% of women, 4.3 million people altogether—reported having at least one chronic condition in 1994-95 *(see Definitions)*. Arthritis/rheumatism was the most prevalent, affecting 28% of men and 41% of women (Table 2). High blood pressure ranked second, followed by non-arthritic back problems. The relatively high prevalence of musculoskeletal problems is consistent with the results of earlier Canadian surveys.[2,3]

By contrast, some other conditions were relatively rare among seniors in the community. Urinary incontinence and the effects of stroke each affected just 3%, and epilepsy and Alzheimer's disease, fewer than 1%. This is not surprising, as these conditions (with the exception of epilepsy) are likely to result in institutionalization.[1]

Methods

Data source

The data are from the household component (which excludes long-term health care facilities) of the National Population Health Survey (NPHS), conducted by Statistics Canada from June 1994 through June 1995.[4,5] From a sample of 27,263 households, interviewers collected data on health status, health care utilization, and socioeconomic and demographic characteristics.

In each household, one person was selected for the interview. Information on physical limitations was collected for the selected household member only. Information on the need for help with activities of daily living and the presence of chronic conditions was collected for every household member.

The survey response rate (the proportion of selected households where agreement to participate was obtained, including households later rejected for sampling reasons) was 89%.[2] Among participating households, the response rate for individuals aged 55 and over was 97%.

This article analyses data from the 2,117 men and 2,976 women aged 55 and over who were surveyed in the NPHS, representing 2.6 million men and 3.2 million women in this age group living in the community—the household population. (Data from the Northwest Territories and the Yukon were not available.)

Analytical techniques

Prevalence rates for specific chronic conditions, physical limitations, and dependency were calculated by age and sex. Four separate categories of physical limitation were studied—vision, hearing, mobility and the presence of at least one physical limitation (also including dexterity or speech)—as well as the need for assistance with at least one activity of daily living. Logistic regressions were performed to examine the relationships of chronic conditions, together with social and demographic characteristics and health-related behaviours, to physical limitations and dependency. The following independent variables were specified: chronic conditions, age, sex, marital status, household income, smoking, alcohol use, body mass index, recreational physical activity, self-rated health, and region.

The prevalence data were weighted to reflect the age and sex distribution of the national population. The logistic regressions were weighted using survey weights rescaled to sum to the sample size.

Limitations

This analysis is limited by the cross-sectional nature of the data. That is, information about having a chronic condition was collected at the same time as data about physical limitations and dependency. Therefore, it cannot be assumed that a particular condition or a combination of them caused a physical limitation or dependency.

An additional limitation of cross-sectional data is that they fail to reflect the dynamic nature of functional status in older people. While the physical functioning of older people may deteriorate, it can also improve, just as is the case for younger people.

As well, using only data from the household component of the NPHS, and excluding people living in institutions, restricts the analysis. For example, among people in the community, the prevalence of Alzheimer's disease is very low, whereas 30% of residents of long-term health care facilities have the disease.[1] However, the purpose of focusing exclusively on the household population is to study the conditions with which people are able to cope while still living in the community.

Differences between men and women in the prevalence of some chronic conditions were notable. For instance, arthritis/rheumatism, high blood pressure, non-food allergies, cataracts, and migraine headaches were reported more frequently by women, while heart disease, diabetes, and bronchitis/emphysema were reported more often by men.

Table 1
Selected characteristics, household population aged 55 and over, Canada, 1994-95

	Both sexes	Men	Women
		%	
Total household population aged 55+	**100.0**	**100.0**	**100.0**
Age			
55-64	43.1	45.2	41.4
65-74	36.1	36.1	36.1
75+	20.9	18.8	22.5
Marital status			
With partner	67.1	79.4	57.1
Not with partner†	32.9	20.6	42.9
Household income			
Adequate	72.8	78.2	68.4
Inadequate	21.5	16.4	25.5
Unknown	5.8	5.4	6.1
Smoking			
Never smoked	38.1	21.1	51.7
Occasional or former smoker	45.3	59.7	33.7
Current, regular smoker	16.6	19.2	14.5
Alcohol use			
At least one drink per week	32.3	43.4	23.4
Less than one drink per week	34.7	32.4	36.5
Never	33.0	24.3	40.1
Body mass index‡			
Appropriate	57.8	58.4	57.3
Underweight	6.7	4.2	8.7
Overweight	35.6	37.4	34.1
Recreational physical activity			
Active	14.9	19.1	11.5
Moderate	19.9	18.0	21.4
Inactive	59.0	53.8	63.1
Unknown	6.3	9.1	4.1
Self-rated health			
Excellent	14.8	14.2	15.4
Very good	28.8	30.0	27.9
Good	33.5	33.7	33.3
Fair	17.6	16.6	18.4
Poor	5.3	5.6	5.1

Source: *National Population Health Survey, 1994-95*
Note: *Percentages may not sum to total because of rounding.*
† *Single, divorced or widowed.*
‡ *Appropriate: 20-27; underweight: <20; overweight: >27.*

Definitions

To measure the prevalence of chronic conditions, the 1994-95 NPHS asked, "Do(es) . . . have any of the following long-term conditions that have been diagnosed by a health professional: .... ?" A list was read to respondents, who were instructed to identify as many conditions as were applicable (see *Appendix*).

Information on physical limitations was collected through a series of questions about respondents' "usual abilities." For this analysis, the following criteria were used to categorize respondents as having physical limitations:

- Vision: Unable (even with corrective lenses) to read newsprint or to recognize someone at a distance, or unable to see at all.
- Hearing: Has difficulty (even with a hearing aid) hearing what is said in conversation with one other person, or with a group of at least three other people, or unable to hear at all.
- Speech: Unable to be fully understood when speaking in own language.
- Mobility: Needs mechanical aids (such as braces, a cane, crutches or a wheelchair) to get around (with or without help of another person), or unable to walk at all.
- Dexterity: Needs help of another person or assistive devices because of limitations in use of hands or fingers. People who did not require such help, even if they reported problems in grasping and holding small objects such as a pencil and scissors, were not categorized as having a dexterity limitation.

Respondents were classified as dependent if, for reasons of health, they reported needing and receiving help in performing any activity of daily living. Specifically, respondents were asked whether, as the result of "any condition or health problem," they need help preparing meals, shopping for groceries and necessities, doing everyday housework, doing heavy household chores, personal care (washing, dressing, eating), and moving about inside the house.

The NPHS also collected information on respondents' demographic and socioeconomic characteristics, including marital status and annual household income. For this analysis, households were grouped into two categories based on the number of people in the household and their combined annual income:

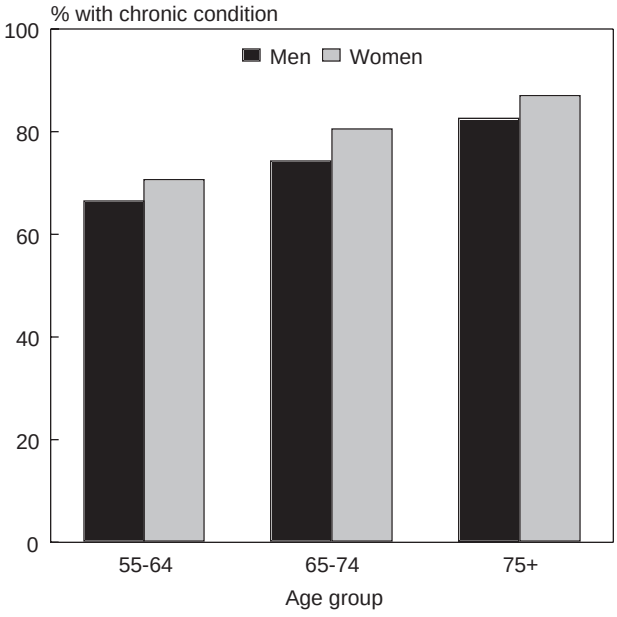
	Persons per household		
Household income	1 or 2	3 or 4	5+
Inadequate	<$15,000	<$20,000	<$30,000
Adequate	$15,000+	$20,000+	$30,000+

Of the 5,093 respondents aged 55 and over, 271 (6%) did not provide information on income. These respondents, however, were included in the analysis. Their income was designated as unknown.

The marital status of respondents was obtained by asking if they were "now married," "living common-law," "living with a partner," "single (never married)," "widowed," "separated," or "divorced." For this analysis, those in the first three categories were designated as "living with a partner," and those in the other categories, "not living with a partner."

Chart 1

Prevalence of one or more chronic conditions, household population aged 55 and over, by sex and age group, Canada, 1994-95



Source: *National Population Health Survey, 1994-95*

With advancing age, the percentage of seniors in the household population who reported at least one chronic condition tended to rise (Chart 1). The exceptions were non-food allergies and migraine headaches, which were less prevalent at older ages. As well, the prevalence of non-arthritic back problems and stomach or intestinal ulcers varied little by age among women, and actually decreased at older ages among men.

Physical limitations rise sharply with age

Despite the high prevalence of chronic conditions, comparatively few seniors living in the community had physical limitations. In 1994-95, 16% of men and 18% of women aged 55 and over—just under one million people—reported having one or more physical limitations (Table 3).

Not surprisingly, the prevalence of physical limitations increased with age. At age 75 and over, 29% of men and 38% of women reported at least one limitation, whereas at ages 55-64, just 10% of men and 9% of women were affected. The higher overall prevalence of limitations among older women than older men partially reflects women's longer life expectancy, and the resulting higher proportion of the very old among women aged 75 and over.[6]

Table 2

Chronic conditions, household population aged 55 and over, by sex and age group, Canada, 1994-95

	Both sexes				Men				Women			
	55+	55-64	65-74	75+	55+	55-64	65-74	75+	55+	55-64	65-74	75+
	% with condition											
Arthritis, rheumatism	34.7	27.2	37.5	45.4	27.6	20.4	31.2	38.1	40.5	33.1	42.7	50.4
High blood pressure	25.2	20.6	28.0	29.8	21.2	18.4	25.0	20.6	28.4	22.6	30.4	36.1
Non-arthritic back problems	19.3	21.1	18.5	17.2	19.4	22.2	18.6	14.2	19.3	20.1	18.4	19.2
Non-food allergies	12.9	14.8	12.4	9.8	10.0	12.1	8.9	6.9	15.3	17.3	15.2	11.8
Heart disease	12.4	6.7	13.7	21.8	14.1	8.7	16.8	22.1	11.0	5.0	11.1	21.6
Diabetes	9.2	6.4	11.1	11.4	10.1	6.9	12.5	13.0	8.4	6.0	9.9	10.4
Cataracts	9.2	3.0	9.2	22.2	6.6	3.1	5.4	17.1	11.3	2.9	12.2	25.6
Chronic bronchitis, emphysema	5.7	4.7	5.4	8.3	6.4	5.0	6.6	9.1	5.2	4.5	4.4	7.8
Stomach, intestinal ulcers	5.1	5.3	5.3	4.4	5.4	5.8	5.6	4.0	4.9	4.9	5.1	4.6
Asthma	4.9	5.0	4.9	4.5	4.8	4.3	5.5	4.5	4.9	5.5	4.5	4.5
Migraine headaches	4.9	6.0	4.6	3.3	2.8	3.0	3.0	2.1	6.6	8.7	5.9	4.0
Cancer	4.2	3.1	4.7	5.6	3.8	2.2	5.1	5.2	4.5	3.9	4.3	5.9
Glaucoma	3.4	1.9	3.4	6.8	3.2	2.3	3.0	5.9	3.6	1.5	3.6	7.5
Urinary incontinence	3.1	1.8	3.2	5.5	2.7	1.4	2.5	6.4	3.4	2.2	3.8	4.9
Effects of stroke	2.9	1.5	3.4	5.0	3.6	1.9	4.6	5.5	2.3	1.1	2.3	4.7
Epilepsy	0.6	0.7	0.6	0.5	0.5	0.5	0.7	0.1	0.7	1.0	0.5	0.8
Alzheimer's disease, other dementia	0.4	0.1	0.3	1.0	0.3	0.1	0.3	0.7	0.4	0.1	0.3	1.2

Source: *National Population Health Survey, 1994-95*

The most common limitation among senior women in the community was mobility, affecting 9% of them. For men, hearing limitations were just as prevalent as mobility limitations (6%), and slightly exceeded the percentage of women with hearing limitations (5%). Understandably, given the relationship between hearing and speech, a somewhat higher percentage of men than women reported speech limitations. On the other hand, higher percentages of women reported vision and dexterity limitations.

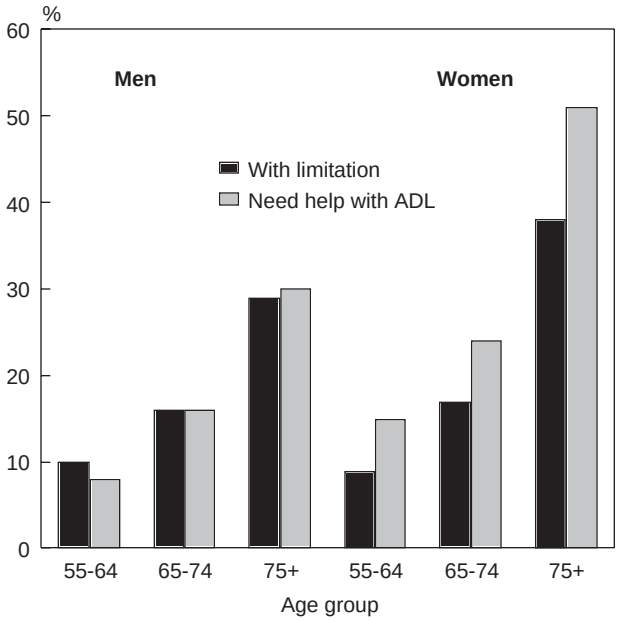
As expected, most limitations tended to become more prevalent at older ages. For instance, at age 75 and over, 7% of men and 16% of women reported vision limitations that were not fully corrected, even with glasses or contact lenses, whereas at ages 55-64, the percentages were just 3% and 4%. The exception was speech limitations among women, which varied little with age.

Greater need for help among women

Within each age group, the proportion of men needing and receiving help with activities of daily living (ADL) was about the same as the proportion with at least one physical limitation. However, among women of all ages, the proportion with an ADL dependency appreciably exceeded the proportion reporting a physical limitation (Chart 2).

Chart 2

Prevalence of one or more physical limitations and need for help with one or more ADL, household population aged 55 and over, by sex and age group, Canada, 1994-95



Source: *National Population Health Survey, 1994-95*

In 1994-95, 15% of men and 26% of women aged 55 and over living in the community—1.2 million people—reported that they depended on others for assistance with at least one ADL. For tasks that tend to affect the ability to live at home (preparing meals, personal care, moving about inside the house), the percentages of men and women receiving help did not vary substantially. However, a considerably larger share of women than men received help with housework and shopping for necessities (Table 4).

Assistance with ADL increased markedly with age. This was particularly the case for heavy housework—27% of men and 46% of women aged 75 and over reported receiving help with such chores in 1994-95, a finding similar to that of a household survey conducted almost a decade earlier.[7]

Table 3

Physical limitations, household population aged 55 and over, by sex and age group, Canada, 1994-95

	Physical limitation					
	Vision	Hearing	Speech	Mobility	Dexterity	At least one
	% with limitation					
Men 55+	**3.9**	**6.3**	**1.9**	**6.2**	**0.7**	**15.5**
55-64	2.7	4.3	1.0	2.6	0.3	9.9
65-74	3.8	6.1	2.3	6.3	0.9	15.8
75+	7.1	11.7	3.2	14.8	1.4	28.5
Women 55+	**7.3**	**4.9**	**1.5**	**9.2**	**1.1**	**18.4**
55-64	3.8	2.0	1.1	3.4	0.8	9.2
65-74	5.8	5.9	2.3	6.9	1.2	17.0
75+	16.0	8.7	0.8	23.5	1.3	37.7

Source: *National Population Health Survey, 1994-95*

Table 4

Need for help with ADL, household population aged 55 and over, by sex and age group, Canada, 1994-95

	Activity of daily living						
	Heavy house-work	Every-day house-work	Shopping for neces-sities	Pre-paring meals	Personal care	Moving about inside house	At least one
	% needing help						
Men 55+	**13.9**	**5.7**	**4.9**	**3.8**	**2.8**	**1.4**	**15.4**
55-64	7.6	1.8	2.0	1.5	1.1	0.5	8.4
65-74	15.1	5.1	3.9	2.5	1.4	1.9	16.4
75+	27.0	15.9	13.9	11.7	9.5	2.8	30.4
Women 55+	**24.0**	**11.8**	**10.3**	**5.1**	**2.8**	**2.2**	**26.1**
55-64	13.6	6.2	4.2	1.4	0.7	1.0	14.6
65-74	22.1	9.6	6.9	3.6	1.6	1.4	23.6
75+	46.3	25.8	26.8	14.3	8.4	5.7	51.3

Source: *National Population Health Survey, 1994-95*

Table 5

Odds ratios relating chronic conditions, socio-demographic and behavioural characteristics to physical limitations and need for help with activities of daily living, household population aged 55 and over, Canada, 1994-95

	Physical limitation				Need help with one or more ADL
	Vision	Hearing	Mobility	One or more limitations†	
Chronic condition‡					
Arthritis, rheumatism	1.40*	1.14	2.51**	1.58**	2.02**
High blood pressure	0.75	1.02	0.97	0.93	1.17
Non-arthritic back problems	1.12	1.12	1.38*	1.20	2.25**
Non-food allergies	1.17	1.20	0.90	1.14	1.24
Heart disease	1.19	0.86	1.17	1.01	2.19**
Diabetes	1.72**	0.87	0.86	0.86	1.03
Cataracts	2.52**	1.03	1.51*	1.75**	1.42**
Chronic bronchitis, emphysema	0.95	1.32	0.79	1.16	1.78**
Stomach, intestinal ulcers	1.16	1.68*	0.91	1.25	1.14
Asthma	0.65	0.98	0.92	0.90	1.48*
Migraine headaches	1.02	0.73	1.77*	1.04	0.92
Cancer	1.09	0.85	1.10	0.95	1.14
Glaucoma	1.54	0.53	1.10	1.27	1.60*
Urinary incontinence	0.78	0.79	1.75*	1.31	2.88**
Effects of stroke	1.43	2.27**	4.09**	4.66**	3.71**
Epilepsy	1.04	0.27	5.20**	2.43*	4.66**
Alzheimer's disease, other dementia	2.39	1.42	1.07	2.15	1.20
Sex					
Male§	1.00	1.00	1.00	1.00	1.00
Female	1.58**	0.78	1.00	1.03	1.91**
Age					
55-64§	1.00	1.00	1.00	1.00	1.00
65-74	1.22	2.16**	1.68**	1.59**	1.61**
75+	2.49**	3.98**	4.55**	3.31**	4.05**
Marital status					
With partner §	1.00	1.00	1.00	1.00	1.00
Not with partner	1.19	0.72*	1.42*	1.11	1.16
Household income					
Adequate §	1.00	1.00	1.00	1.00	1.00
Inadequate	1.00	1.00	1.20	1.07	1.31**
Unknown	1.38	0.35*	1.59	0.93	1.02
Smoking					
Never smoked §	1.00	1.00	1.00	1.00	1.00
Occasional or former smoker	0.98	0.80	0.85	0.95	1.17
Current, regular smoker	1.19	1.28	1.64**	1.40**	1.45**
Alcohol use					
At least one drink per week §	1.00	1.00	1.00	1.00	1.00
Less than one drink per week	1.26	0.83	1.71**	1.35**	1.10
Never	1.04	0.97	1.43*	1.21	0.99
Body mass index ††					
Appropriate§	1.00	1.00	1.00	1.00	1.00
Underweight	1.29	0.96	1.08	1.21	1.50**
Overweight	0.97	1.22	1.14	1.08	0.93
Recreational physical activity					
Active§	1.00	1.00	1.00	1.00	1.00
Moderate	1.64	1.79*	1.51	1.63**	1.40*
Inactive	1.36	1.41	2.93**	1.60**	1.58**
Unknown	2.20*	2.27**	5.85**	3.81**	1.74**
Self-rated health					
Excellent, very good, good §	1.00	1.00	1.00	1.00	1.00
Fair, poor	1.31	1.55**	3.18**	2.11**	3.10**
Region					
Atlantic §	1.00	1.00	1.00	1.00	1.00
Quebec	1.86*	0.68	1.16	0.99	0.79
Ontario	1.23	0.94	1.51	1.15	0.72*
Prairies	1.50	1.49	1.35	1.35	0.82
British Columbia	0.85	1.05	1.79*	1.08	0.87

Source: *National Population Health Survey, 1994-95*
Note: *These are the results of five separate logistic regressions using as dependent variables vision limitations, hearing limitations, mobility limitations, one or more physical limitations, and need for help with one or more ADL.*

† *Includes limitations in vision, hearing, mobility, dexerity and speaking.*
‡ *The reference category (not shown) is the absence of the chronic disease.*
§ *Indicates the reference category, for which the odds ratio is always 1.00.*
†† *Appropriate: 20-27; underweight:* <20; overweight: >*27.*
* $p < 0.05$
** $p < 0.01$

Limitations and dependency vary with chronic conditions

A complex set of factors in addition to chronic conditions influences physical limitations and ADL dependency. Logistic regression was used to control for the influence of some of these factors. This technique was employed to estimate the risk (or odds) that people with a specific condition will have a physical limitation or an ADL dependency, compared with people who do not have that condition.

To properly assess these results, odds ratios should be considered in conjunction with the prevalence of the condition in question. The conditions most closely associated with physical limitations and dependency—epilepsy, the effects of stroke, and incontinence—are relatively rare among seniors living in the community. Consequently, although the burden of these conditions is relatively great at the individual level, their impact on the entire household population is less than that of conditions that are usually less disabling but more prevalent, such as arthritis/rheumatism, non-arthritic back problems, and cataracts.

As expected, different chronic conditions had different associations with physical disability. For example, arthritis/rheumatism, non-arthritic back problems, and the effects of stroke were significantly associated with mobility limitations. People with arthritis/rheumatism had odds more than double (odds ratio = 2.51) those for people without the disease of reporting a mobility limitation (Table 5). Not surprisingly, cataracts (2.52) and diabetes (1.72) were significantly associated with vision limitations.

Three conditions that were prevalent among community-dwelling seniors—arthritis/rheumatism, non-arthritic back problems, and heart disease—were strongly associated with ADL dependency. In each instance, the odds of receiving such assistance were at least twice as high among people with these conditions as among those who did not report having them. The association of arthritis/rheumatism with limitations in mobility and the need for help with ADL was anticipated and is similar to findings reported in Ontario and in the United States.[8-11] The likelihood of dependency was also relatively high among people with chronic bronchitis/emphysema (1.78), asthma (1.48), and cataracts (1.42).

Strong associations with age and sex

In addition to specific chronic conditions, physical limitations and dependency were associated with a number of personal characteristics. Predictably, old age was strongly related to vision, hearing and mobility problems. For instance, compared with people aged 55-64, the odds that those aged 75 and over would have a mobility limitation were more than four times (4.55) as great. Differences between the sexes were less clear-cut. Being female was related to limitations in vision, but not mobility.

Some physical limitations varied with marital status: people living with a partner had significantly lower odds of reporting mobility limitations than did people not living with a partner, but significantly higher odds of reporting hearing problems. The latter relationship is partially explained by the higher prevalence of hearing problems in senior men, who are more likely than women to be living with a partner.

Dependency was associated with advancing age and being female. The odds of receiving help with one or more ADL were four times as great among people aged 75 and over (4.05) as among those aged 55-64. And the odds for women receiving help were almost twice those for men (1.91).

ADL dependency tended to be greater among seniors with low socioeconomic status, as reflected by inadequate household income. This may be partly due to a reporting or perceptual difference between people with adequate income and those with inadequate means. Individuals who can afford to pay for help with ADL, and who have long had such help (for example, cleaning services), may not regard this as being dependent. They may be unaware that they would be unable to perform these tasks if they lacked the resources to pay for the service. However, socioeconomic status is a well-known determinant of health, so it is likely that seniors with inadequate income are in genuinely greater need of help with ADL than are those with adequate income.[12] This finding is consistent with other research and supports the premise of a social component in the performance of everyday tasks, and in particular, the capacity to perform ADL.[13,14]

Implications

This analysis illustrates the importance of measuring the relative burden of chronic conditions not only in terms of prevalence and mortality, but also in terms of their relationship to physical function and ADL dependency. It is notable that heart disease and cancer, the chronic conditions that account for most of the deaths in Canada, were not significantly associated with physical limitations among seniors living in the community.[15] And although heart disease was associated with ADL dependency, cancer was not.

The high odds ratios relating physical limitations and dependency to epilepsy and the effects of stroke reflect the incapacitating effects of these conditions on physical functioning. The low prevalence of the effects of stroke in the household population is attributable not only to the lower overall incidence of stroke compared with conditions such as arthritis/rheumatism, but also to the greater risk of institutionalization among affected people. By the same token, the lack of statistical significance of the odds ratios for Alzheimer's disease/other dementia reflects only the small number of people with this condition, and not the degree of physical limitation or dependency that the condition entails. The odds ratios for musculoskeletal problems are somewhat lower than those for epilepsy and stroke, but because the former conditions are far more prevalent, they account for more of the physical limitations and dependency experienced by the household population aged 55 and over.

Knowledge of the prevalence of various chronic conditions among seniors living in the community, and the extent to which these conditions are associated with physical limitations and dependency, is important from a public health perspective. This information can be used to allocate publicly supported in-home assistance so that people with the most debilitating conditions can receive help based on need. In addition, estimates can be made of the resources necessary to provide the support that will enable the growing senior population to age in place and avoid, or at least delay, the upheaval and expense of institutional care.

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Appendix

National Population Health Survey questions on chronic conditions, physical limitations, and dependency

Chronic conditions

Do(es). . . have any of the following long-term conditions (long-term conditions refer to conditions that have lasted or are expected to last 6 months or more) that have been diagnosed by a health professional:

Food allergies? *[Not included in this analysis because of low frequency of occurrence]*

Other allergies?

Asthma?

Arthritis or rheumatism?

Back problems excluding arthritis?

High blood pressure?

Migraine headaches?

Chronic bronchitis or emphysema?

Sinusitis? *[Not included in this analysis because of low frequency of occurrence]*

Diabetes?

Epilepsy?

Heart disease?

Cancer?

Stomach or intestinal ulcers?

Effects of stroke?

Urinary incontinence?

Alzheimer's disease or other dementia?

Cataracts?

Glaucoma?

Any other long term condition? (Specify)_____

Physical limitations

The next set of questions ask about ... (r/'s) day to day health. The questions are **not** about illnesses like colds that affect people for short periods of time. They are concerned with a person's usual abilities. You may feel that some of these questions do not apply to you/him/her, but it is important that we ask the same questions of everyone.

Vision

Are/Is ... *usually* able to see well enough to read ordinary newsprint *without* glasses or contact lenses? (Yes, No, Don't know/Refusal)

Are/Is you/he/she *usually* able to see well enough to read ordinary newsprint *with* glasses or contact lenses? (Yes, No)

Are you/he/she able to see at all? (Yes, No, Don't know/Refusal)

Are/Is you/he/she able to see well enough to recognize a friend on the other side of the street *without* glasses or contact lenses? (Yes, No, Don't know/Refusal)

Are/Is you/he/she *usually* able to see well enough to recognize a friend on the other side of the street *with* glasses or contact lenses? (Yes, No)

Hearing

Are/Is ... *usually* able to hear what is said in a group conversation with at least three other people *without* a hearing aid? (Yes, No, Don't know/Refusal)

Are/Is you/he/she *usually* able to hear what is said in a group conversation with at least three other people *with* a hearing aid? (Yes, No)

Are/Is you/he/she able to hear at all? (Yes, No, Don't know/Refusal)

Are/Is you/he/she *usually* able to hear what is said in a conversation with one other person in a quiet room *without* a hearing aid? (Yes, No, Refusal)

Are/Is you/he/she *usually* able to hear what is said in a conversation with one other person in a quiet room *with* a hearing aid? (Yes, No)

Speech

Are/Is ... *usually* able to be understood *completely* when speaking with strangers in your own language? (Yes, No, Refusal)

Are/Is you/he/she able to be understood *partially* when speaking with strangers? (Yes, No)

Are/Is you/he/she able to be understood *completely* when speaking with those who know you/him/her well? (Yes, No, Refusal)

Are/Is you/he/she able to be understood *partially* when speaking with those who know you/him/her well? (Yes, No)

Getting around

Are/Is ... *usually* able to walk around the neighbourhood *without* difficulty and *without* mechanical support such as braces, a cane or crutches? (Yes, No, Don't know/Refusal)

Are/Is you/he/she able to walk at all? (Yes, No, Don't know/Refusal)

Do/Does you/he/she require mechanical support such as braces, a cane or crutches to be able to walk around the neighbourhood? (Yes, No)

Do/Does you/he/she require the help of another person to be able to walk? (Yes, No)

Do/Does you/he/she require a wheelchair to get around? (Yes, No, Don't know/Refusal)

How often do/does you/he/she use a wheelchair? (Always, Often, Sometimes, Never)

Do/Does you/he/she need the help of another person to get around in the wheelchair? (Yes, No)

Hands and fingers

Are/Is ... *usually* able to grasp and handle small objects such as a pencil and scissors? (Yes, No, Don't know/Refusal)

Do/Does you/he/she require the help of another person because of limitations in the use of hands or fingers? (Yes, No, Don't know/Refusal)

Do/Does you/he/she require the help of another person with: Some tasks? Most tasks? Almost all tasks? All tasks?

Do/Does you/he/she require special equipment, for example, devices to assist in dressing because of limitations in the use of hands or fingers? (Yes, No)

Dependency

The next question asks about help received. This may not apply to ..., but we need to ask the same question of everyone. Because of any condition or health problem, do(es) ... need the help of another person in:

Preparing meals?

Shopping for groceries or other necessities?

Doing normal everyday housework?

Doing heavy housework such as washing walls, yard work, etc.?

Personal care such as washing, dressing or eating?

Moving about inside the house?