USE OF WHEELCHAIRS AND OTHER MOBILITY SUPPORT DEVICES

by Margot Shields

About 155,000 Canadians who were living in private households in 2000/01 needed a wheelchair to get around. This represents 0.6% of the total household population aged 12 or older (Table A). An additional 540,000 individuals (2.1%) needed other devices such as braces, canes or crutches. These figures on the use of "mobility support devices" in the household population are from the first cycle of the Canadian Community Health Survey, a general health survey conducted by Statistics Canada between September 2000 and October 2001.

Use rises with age

As might be expected, the use of mobility support devices rises with age. Wheelchair users made up just 0.3% of the household population aged 12 to 44, but by age 85 or older, the proportion was 7%. The use of other mobility support devices also increases with age from 0.3% of 12- to 44-year-olds to 32% of the most elderly.

Overall, a slightly higher percentage of females than males reported using mobility support devices: 3.1% versus 2.3%. This difference likely reflects the higher proportions of women in the older age groups. In fact, the association between being female and using a mobility support device disappeared when the older age distribution of women was taken into account.

Percentage of people using mobility support devices

	Wheelchair	Other
Total	0.6	2.1
Age 12-44	0.3	0.3
Age 45-64	0.5	1.7
Age 65-74	1.2	4.6
Age 75-84	2.8	14.6
Age 85+	7.2	31.7

Data source: 2000/01 Canadian Community Health Survey
Note : Estimate for each age group significantly higher than estimate for younger age group(s)

Household income

The use of mobility support devices was associated with household income. People in low-, lower-middle- and middle-income households were more likely than the overall population to use wheelchairs or other support devices, while those in upper-middle- or high-income households were less likely to do so. Although a relatively large share of older people were in lower-income households, the relationship between income and the use of mobility support devices persisted even when the effects of age were taken into account.

Variations across the country

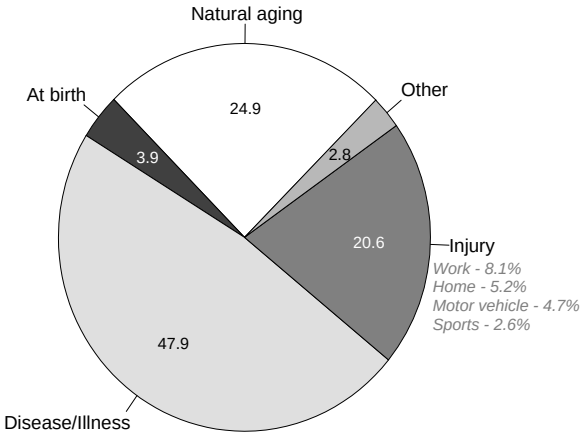
The proportions of Ontario, Nova Scotia, Manitoba and Saskatchewan residents using mobility support devices exceeded the national average. In Québec, Alberta and the Northwest Territories, proportions were comparatively low. Québec and the Northwest Territories were the only jurisdictions where the use of both wheelchairs and other mobility support devices was below the national level. The low rate for Québec is reflected in the province's "disability-free life expectancy" (the number of years a person is expected to live without a disability), which is the highest in the country.[1]

Disability and its causes

Almost all people who reported using mobility support devices (96%) said that they had a disability. The main cause—reported by about half of them—was disease or illness. Natural aging was cited by one-quarter, and one-fifth said that their disability stemmed from an injury.

More than half of males in the 12-to-44 age group who needed a mobility support device reported that

Causes of disability among mobility support device users



Data source: 2000/01 Canadian Community Health Survey

Percentage of mobility support device users whose disability was attributable to . . .

	Injury	Disease/ Illness	Natural aging	Existed at birth
Total				
Males	28*	45*	20*	4
Females	15	50	28	4
Age 12-44				
Males	55*	21*[E1]	F	18[E1]
Females	24	52	F	21[E1]
Age 45-64				
Men	43*	46*	F	3[E2]
Women	28	60	4[E2]	5[E1]
Age 65-74				
Men	20	59	15*[E1]	F
Women	13	59	24	F
Age 75-84				
Men	16[E1]	54	28	F
Women	11	49	34	F
Age 85+				
Men	5[E2]	33	62	F
Women	7[E1]	29	64	F

Data source: 2000/01 Canadian Community Health Survey
** Significantly different from estimate for women (p < 0.05)*
E1 Coefficient of variation 16.6 to 25.0%
E2 Coefficient of variation 25.1 to 33.3%
F Coefficient of variation greater than 33.3%

Use of mobility support devices in health care institutions

According to the 1996/97 National Population Health Survey, over 6 in 10 residents of health care institutions required mobility support devices. Just under half of residents—49%, or an estimated 109,000—used wheelchairs. An additional 14% (31,000) used other devices such as braces, crutches or canes. The 1996/97 data are the most recent available on the use of mobility support devices in health care institutions.

Residents' use of mobility support devices increased from 37% at ages 12 to 64 to 74% at age 85 or older. Although female residents were more likely than their male counterparts to use these devices, the older age distribution of women accounted for the difference.

Use of mobility support devices by residents of health care institutions, Canada, 1996/97

	Estimated population	Wheelchair		Other†		Total mobility support devices	
	'000	'000	%	'000	%	'000	%
Total	222.6	109.4	49.1	31.3	14.1	140.7	63.2
Men	71.9	32.1	44.6	8.1	11.3	40.2	55.9
Women	150.7	77.3	51.3*	23.2	15.4*	100.5	66.7*
Age 12-64	37.1	12.6	33.9	F	3.5[E1]	13.8	37.3
Men	21.4	6.8[E1]	31.5	F	3.4[E2]	7.5	34.9
Women	15.6	5.8[E1]	37.1	F	3.6[E2]	6.4	40.7
Age 65-84	92.5	46.4	50.1‡	11.9	12.8‡	58.3	63.0‡
Men	32.8	15.9	48.5	4.5[E1]	13.7	20.4	62.2
Women	59.7	30.5	51.0	7.4	12.4	37.9	63.4
Age 85+	92.6	50.2	54.2	18.1	19.6‡	68.4	73.8‡
Men	17.6	9.3	53.1	2.9[E1]	16.6	12.2	69.6
Women	75.1	40.9	54.5	15.2	20.3	56.1	74.8

Data source: 1996/97 National Population Health Survey
Note: Detail does not add to total because of missing values.
† Excluding those who also use wheelchair
‡ Significantly higher than younger age group(s) (p < 0.05)
** Significantly higher than men (p < 0.05)*
E1 Coefficient of variation 16.6% to 25.0%
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their disability resulted from an injury, reflecting the high prevalence of injury among males of these ages.[2] Men aged 45 to 64 were as likely to cite disease/illness as injury. From age 65 up to 84, disease/illness was the most common reason. Men older than this, however, cited natural aging as the cause.

For female users of mobility support devices, the causes of disability varied less by age. Up to age 85, the most common reason was illness. At 85 and beyond, women, like men, tended to attribute their disability to natural aging.

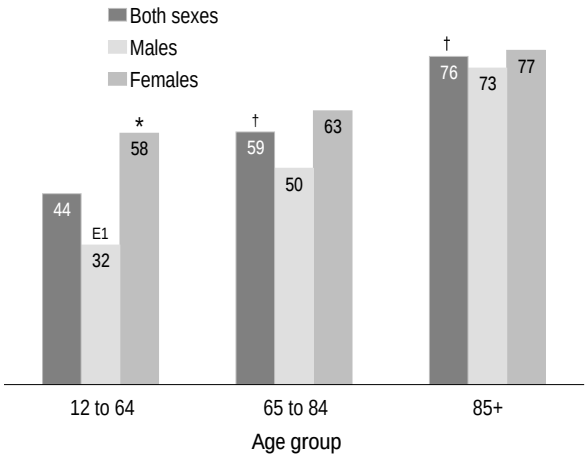
Needing help at home

Among wheelchair users, about two-thirds (67%) of males and three-quarters (74%) of females required assistance with basic activities of daily living (ADL); that is, personal care such as washing, getting dressed, and moving about inside their home. An additional 20% of both males and females required assistance with "instrumental" activities of daily living (IADL)—grocery shopping, meal preparation and everyday housework, for example. Nonetheless, a surprisingly high percentage of male wheelchair users (14%) said that they required neither type of help; the corresponding percentage for females was 6%.

People using other mobility support devices were less likely than wheelchair users to be ADL-dependent: about 30% for both sexes. But about one-third of males (32%) and close to half (47%) of females who used devices other than wheelchairs were IADL-dependent. Again, males were more likely than females to report that they required neither type of help. This male advantage is more evident at younger ages, and may be related to type of disability. For younger males, injury is most likely to be the cause of disability. But for females, disease/illness tends to be the cause, which may indicate general poor health.

Over half of wheelchair users needed help getting around in the wheelchair. This percentage ranged from just over 40% at ages 12 to 64 to more than three-quarters (76%) among users aged 85 or older. Females were more likely than males to say they needed such help—a difference largely reflecting the situation of the younger population of wheelchair users (ages 12 to 64). In this age group, the percentage of females needing help was almost double that of males.

Percentage of wheelchair users needing help to get around



Data source: 2000/01 Canadian Community Health Survey
** Significanly higher than estimate for men (p < 0.05)*
† Significantly higher than younger age group(s) (p < 0.05)
E1 Coefficient of variation 16.6% to 25.0%

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References

1 Mayer F, Ross N, Berthelot JM, et al. Disability-free life expectancy. *Health Reports* (Statistics Canada, Catalogue 82-003) 2002; 13(4): 49-60.

2 Statistics Canada. Stress and well-being. In: The Health Divide—How the Sexes Differ. *Health Reports* (Statistics Canada, Catalogue 82-003) 2001; 12(3): 21-32.

3 Béland Y. Canadian Community Health Survey—Methodological overview. *Health Reports* (Statistics Canada, Catalogue 82-003) 2002; 13(3): 9-14.

4 Rao JNK, Wu CFJ, Yue K. Some recent work on resampling methods for complex surveys. *Survey Methodology* (Statistics Canada, Catalogue 12-001) 1992; 18(2): 209-17.

5 Rust KF, Rao JNK. Variance estimation for complex surveys using replication techniques. *Statistical Methods in Medical Research* 1996; 5: 281-310.

The Questions

The percentages of people who *used wheelchairs*, *needed help with their wheelchairs*, and *used other mobility support devices* were based on "Yes"/"No" responses to the following questions:

- Do you require a wheelchair to get around?
- Do you require the help of another person to get around in the wheelchair?
- Do you require mechanical support such as braces, a cane or crutches to be able to walk around the neighbourhood?

To estimate the percentage of people with a *disability*, responses to the following four items were considered:

- Do you have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing similar activities?
- Does a long-term physical or mental condition or health problem reduce the amount or the kind of activity you can do:
  - . . . at home?
  - . . . at work or school?
  - . . . in other activities, for example, transportation or leisure?

Respondents could choose "sometimes," "often" or "never" to answer these questions. Those who replied "sometimes" or "often" to at least one item were categorized as disabled.

The percentage of people who needed *help with activities of daily living (ADL)* was based on at least one "Yes" response to these two questions:

- Do you need the help of another person . . .
  - . . . in personal care such as washing, dressing or eating?
  - . . . in moving about inside the house?

The percentage of people who needed *help with instrumental activities of daily living (IADL)* was based on at least one "Yes" response to the following:

- Do you need the help of another person . . .
  - . . . in preparing meals?
  - . . . in shopping for groceries or other necessities?
  - . . . in doing normal everyday housework?

Data sources

Canadian Community Health Survey

Use of mobility support devices—that is, wheelchairs and other aids to mobility—in the Canadian household population was estimated with data from the first cycle of the Canadian Community Health Survey (CCHS).[3] Cycle 1 was conducted between September 2000 and October 2001. The survey covers the population aged 12 or older who were living in private households at the time. It does not include people on Indian reserves, on Canadian Forces bases, or in some remote areas.

The overall response rate for cycle 1 was 85%; the total sample size was 131,535. All differences were tested to ensure statistical significance; that is, they did not occur simply by chance. To account for survey design effects, standard errors and coefficients of variation were estimated using the bootstrap technique.[4,5]

Because of a different collection methodology, Statistics Canada's *Participation and Activity Limitation Survey* (PALS) yields higher estimates of the use of mobility support devices than the CCHS. The CCHS asked respondents if they required mobility support devices to get around, but for PALS, screening questions were first asked to determine if respondents had a mobility limitation, which included restrictions such as an inability to stand for long periods. Those identified as having a limitation were asked about the use of aids or specialized equipment, including items not covered in the CCHS such as orthopedic footwear, grab bars and bathroom aids. More PALS information on the use of disability supports can be found at www.statcan.ca/english/freepub/89-581-XIE/free.htm.

National Population Health Survey

Use of mobility support devices among residents of health care institutions was estimated using the most recent data available: the 1996/97 National Population Health Survey institutional component. In all, 213 facilities were selected for the survey. Complete information was obtained for 2,118 residents, representing a response rate of 88.9%. Standard errors and coefficients of variation were estimated using a variance formula that accounted for the two-stage sampling design.

Table A

Use of mobility support devices, household population aged 12 or older, Canada

	Estimated population	Wheelchair		Other†		Total mobility support devices	
	'000	'000	%	'000	%	'000	%
Total	25,802	155.4	0.6	540.0	2.1	695.4	2.7
Males	12,705	69.2	0.5	216.7	1.7	285.9	2.3
Females	13,096	86.2	0.7	323.3	2.5*	409.5	3.1*
Age 12-44	14,867	39.8	0.3	49.9	0.3	89.7	0.6
Males	7,504	24.1E1	0.3E1	25.9	0.4	50.1	0.7
Females	7,363	15.7E1	0.2E1	23.9	0.3	39.6	0.5
Age 45-64	7,287	34.2	0.5‡	123.0	1.7‡	157.1	2.2‡
Men	3,607	15.9	0.4	55.0	1.5	70.9	2.0
Women	3,680	18.3	0.5	67.9	1.9	86.2	2.3
Age 65-74	2,157	26.4	1.2‡	99.5	4.6‡	125.9	5.8‡
Men	1,005	11.1	1.1	45.6	4.5	56.8	5.7
Women	1,152	15.3	1.3	53.9	4.7	69.2	6.0
Age 75-84	1,199	34.0	2.8‡	175.0	14.6‡	209.0	17.4‡
Men	484	11.0E1	2.3E1	59.8	12.4	70.8	14.7
Women	715	23.0	3.2	115.1	16.1*	138.1	19.3*
Age 85+	292	20.9	7.2‡	92.7	31.7‡	113.6	38.9‡
Men	106	7.1E2	6.7E2	30.3	28.6	37.3	35.3
Women	186	13.9E1	7.4	62.4	33.5	76.3	40.9
Household income							
Low	890	14.6	1.6§	33.3	3.7§	47.9	5.4§
Lower-middle	1,778	27.1	1.5§	87.7	4.9§	114.8	6.5§
Middle	5,142	44.6	0.9§	176.3	3.4§	220.9	4.3§
Upper-middle	8,172	29.6	0.4§	116.5	1.4§	146.0	1.8§
High	7,074	21.6E1	0.3§E1	50.0	0.7§	71.6	1.0§
Province/Territory							
Newfoundland	461	3.7E2	0.8E2	8.6	1.9	12.4	2.7
Prince Edward Island	116	0.9E2	0.8E2	1.9	1.6§	2.7	2.4
Nova Scotia	788	4.2E1	0.5E1	22.0	2.8§	26.2	3.3§
New Brunswick	634	3.8E1	0.6E1	12.3	1.9	16.1	2.5
Québec	6,231	22.8	0.4§	106.1	1.7§	128.9	2.1§
Ontario	9,877	68.9	0.7§	232.2	2.4§	301.0	3.1§
Manitoba	907	6.6E1	0.7E1	24.0	2.7§	30.6	3.4§
Saskatchewan	806	5.7E1	0.7E1	20.5	2.5§	26.2	3.3§
Alberta	2,482	13.8	0.6	38.9	1.6§	52.7	2.1§
British Columbia	3,422	24.9	0.7	72.3	2.1	97.2	2.8
Yukon	25	F	F	0.4E2	1.8E2	0.6E1	2.4E1
Northwest Territories	32	0.1E2	0.3E2§	0.4E1	1.2E1§	0.5	1.5‡§
Nunavut	19	F	F	F	F	F	F

Data source: 2000/01 Canadian Community Health Survey
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