

# Older women's health priorities and perceptions of care delivery: results of the WOW health survey

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§ See related article page 165

## Abstract

**Background:** As women get older, their health priorities change. We surveyed a sample of older Canadian women to investigate what health priorities are of concern to them, their perceptions about the care delivered to address these priorities and the extent to which priorities and perceptions of care differ across age groups and provinces.

**Methods:** The WOW (What Older women Want) cross-sectional health survey was mailed in October 2003 to 5000 community-dwelling women aged 55–95 years from 10 Canadian provinces. Women were asked questions on 26 health priorities according to the World Health Organization's International Classification of Functioning, Disability and Health, and their perceptions of whether these priorities were being addressed by health care providers through screening or counselling. Differences in priorities and perceptions of care delivery were examined across age groups and provinces.

**Results:** The response rate was 52%. The mean age of the respondents was 71 (standard deviation 7) years. The health priorities identified most frequently by the respondents were preventing memory loss (88% of the respondents), learning about the side effects of medications (88%) and correcting vision impairment (86%). Items least frequently selected were counselling about community programs (28%), counselling about exercise (33%) and pneumonia vaccination (33%). Up to 97% of the women recalled being adequately screened for heart disease and stroke risk factors, but as little as 11% reported receiving counselling regarding concerns about memory loss or end-of-life issues. Women who stated that specific priorities were of great concern or importance to them were more than twice as likely as those who stated that they were not of great concern or importance to perceive that these priorities were being addressed: osteoporosis (odds ratio [OR] 2.6, 95% confidence interval [CI] 2.1–3.2), end-of-life care (OR 2.6, 95% CI 2.0–3.4), anxiety reduction (OR 2.2, 95% CI 1.8–2.6), fall prevention (OR 2.1, 95% CI 1.6–2.7), stroke (OR 2.1, 95% CI 1.4–3.0), depression (OR 2.1, 95% CI 1.7–2.7) and urinary incontinence (OR 2.1, 95% CI 1.7–2.5). The respondents' perceptions of care delivery varied across age groups and provinces.

**Interpretation:** According to the perceptions of surveyed women, health care providers are addressing many, but not all, of their health concerns, especially those that are of great concern or importance to these women.

As women's life expectancy increases, physicians are confronted with the challenge of treating an elderly population that is predominantly female and has a variety of health priorities and needs. Older women face functional, psychological and social difficulties in addition to health-related conditions. One solution to align care more closely with women's health priorities is to practise patient-centred care, whereby clinical decision-making is focused primarily on the priorities and preferences of individual patients.<sup>1–3</sup> Data on older women's health priorities are scarce,<sup>4–6</sup> and understanding the gamut of their concerns is important for directing patient-centred, priority-driven agendas. The WOW — What Older women Want — health survey was conducted to determine health priorities of older Canadian women and the extent to which women perceive that their priorities are being addressed by health care professionals.

## Methods

The WOW health survey, conducted in October 2003, was a cross-sectional mailed survey of community-dwelling women aged 55–95 years from 10 Canadian provinces. The sampling frame consisted of all households whose addresses were registered with Canada Post. The women in this age group who responded to 2 household-level Canada Post surveys during 2002 ( $n = 216\,040$ ) made up the study list sample; they represented 15%–18% of people who responded from all households surveyed (every household in Canada received a Canada Post survey). For the WOW study sample, a computer-generated random sample of 5000 names and addresses of women 55 years and older was obtained from the list of respondents to the Canada Post surveys. We used a higher sampling fraction for women aged 65 years and over to ensure adequate representation of women in older groups (a ratio of 15% women aged 55–64 and 85% women aged 65 and over). The self-administered questionnaire with prestamped return envelopes was mailed to participants once only. Women who had originally responded to the Canada Post survey in French were mailed a French questionnaire. The Ethics Board of the Institut universitaire de gériatrie de Montréal approved the study protocol.

The WOW questionnaire asked women to rate the importance of 26 health-priority items that had been generated from qualitative work with community-dwelling women aged 65 and over<sup>5</sup> and tested in a community sample.<sup>6</sup> The conceptual framework proposed by the World Health Organization's International

Classification of Functioning, Disability and Health was used to categorize priorities into 3 groups: health conditions, functioning and contextual factors.<sup>7</sup> Health conditions included breast cancer, heart disease, stroke, Alzheimer's disease, colon cancer, hip fracture, osteoporosis, falls, diabetes mellitus and pneumonia (for which preventive influenza and pneumococcal vaccines are available). Priorities that fell under the functioning category included common symptoms associated with advanced age that negatively affected function, namely urinary incontinence, muscle weakness, memory problems, vision loss, pain and depression. Contextual factors were defined as priorities related to personal beliefs, communication or environmental issues associated with aging and access to care. Respondents were asked to rate their level of concern (greatly, somewhat, a little or not at all concerned) over developing the different health conditions listed and to indicate the degree of importance they attributed to preventing loss of function and addressing contextual factors (very, somewhat, a little or not at all important).

To learn about women's perceptions of the care they received to address these health priorities, we asked respondents to indicate whether they recalled receiving screening procedures or counselling from their health care providers to address each priority item. For items related to health conditions, questions about the frequency and type of screening were based on recommendations by the Canadian Task Force on Preventive Health Care and the US Preventive Services Task Force and other relevant literature.<sup>8-10</sup> For breast cancer, respondents were asked whether they had received a mammogram or had had their breasts examined for "lumps" in the 2 years before the survey. For heart disease and stroke, they were asked about yearly blood pressure measurements and cholesterol screening. For Alzheimer's disease, they were asked about memory testing. For colon cancer, they were asked about yearly stool screening for occult blood, or colonoscopy or sigmoidoscopy screening every 5 years. For osteoporosis, they were questioned about ever having undergone bone mineral density testing or "bone x-rays" to check for brittle bones. For diabetes, women were asked whether they received blood tests to check for high blood sugar at least every 3 years, and for pneumonia whether they had received a flu vaccine yearly. For each of the functioning and contextual priorities, women were asked to indicate whether any of their health care providers had ever addressed these items with them (Yes or No).

Standard sociodemographic data were collected. Self-rated physical and mental health status was measured with the use of the Physical Component Summary (PCS) and Mental Component Summary (MCS) scales of the Medical Outcomes Study 12-Item Short-Form Health Survey (SF-12).<sup>11,12</sup> This measure allowed us to compare health status data for the study sample with normative health status data for Canadian women aged 65 and over.<sup>12</sup> The 6-digit postal code was retained for each respondent to determine provincial origin and whether each participant resided in an urban or rural area. Income level was not queried directly, but aggregated census data were used to infer the mean income level for each respondent according to the first 3 digits of her postal code.

Data from the completed questionnaires were entered into a computer database and checked for accuracy by a second data-entry assistant. Descriptive statistics were used to estimate proportions of women indicating specific health priorities and perceptions of care. For all remaining analyses, priorities were divided into 2 groups: those "of great concern or importance" and those "not of great concern or importance" (i.e., priorities rated as

somewhat, a little bit or not at all important). To estimate the likelihood of respondents perceiving that specific health priorities were being addressed by their health care providers when those priorities were of great concern or importance to them, priorities were regressed individually on corresponding perceptions of care using logistic regression analysis. Regression analyses were adjusted for age and for physical and mental health status of the respondents. Results are reported as odds ratios (OR) with 95% confidence intervals (CI).

Differences in the frequency of specific priorities and perceptions of care by age group (55-64, 65-69, 70-74, 75-79 and  $\geq 80$  years) were tested using  $\chi^2$  analyses, with significance set at a *p* value of less than 0.05. To test the hypothesis that there was no provincial variation in women's perceptions of the care they received for addressing different health priorities, we assumed that each province had an equal probability of being ranked first or last with respect to the proportion of women in each province stating that a given priority was being addressed. We used a normal distribution around 3.7 (26 health items divided by 7 provincial groupings) to test whether the observed frequency of a province being ranked first or last fell within the expected frequency of 3.7 in a uniform distribution. Significant variations outside of expected frequencies for first or last rankings were determined with the use of the  $\chi^2$  test ( $p < 0.05$ ). To ensure an adequate sample size, we grouped women from the Atlantic provinces together.

A sample size of 5000 was calculated on the basis of an expected 50% response rate from a pilot mailing of 150 questionnaires. This sample size was chosen to provide estimates of proportions of women stating health priorities who are in subgroups with a minimum prevalence of 10% (e.g., caregivers) and the most conservative response rate of 50% with an accuracy of  $\pm 5\%$  (99 times out of 100). The use of data from the entire sample would be expected to result in estimates of proportions with an accuracy of  $\pm 2.5\%$  (99 times out of 100). For subgroups of 200-300 women, the estimated proportions would be expected to be accurate within 6%-7% (95 times out of 100).

## Results

The response rate was 52%. Nonrespondents had similar geographic distribution, age and language characteristics as the respondents (data not shown). The mean age of the respondents was 71 years (standard deviation 7, range 55-95, median 71); 16% were 55-64 years old, and 84% were 65 years and older. The representativeness of the respondents aged 65 and older in comparison with the general elderly female population in Canada is shown in Table 1.<sup>12-19</sup> We compared women in this age group and not those aged 55-64 because of the way Canadian norms are reported in the 2001 census data (age groups 18-44, 45-64,  $\geq 65$  years). Respondents aged 55-64 were better educated (20% v. 12% had a university education), physically healthier (mean PCS score 46.1 v. 43.4) and less likely to live alone (16% v. 38%) than the older respondents.

The health priorities most frequently identified by the respondents were preventing memory loss (88% of the respondents), learning about the side effects of medications (88%) and correcting vision impairment (86%) (Table 2). Health priorities least frequently identified were counsel-

ling about community programs (28%), counselling about exercise (33%) and pneumonia vaccination (33%). Up to 97% of the women recalled being adequately screened for heart disease and stroke risk factors, but as little as 11% reported receiving counselling regarding concerns about memory loss or end-of-life issues.

For all priorities related to health conditions and functioning issues, women who stated that the priorities were of great concern or importance to them were significantly more likely than those who stated that they were not of great concern or importance to them to perceive that

**Table 1: Characteristics of women aged 65 years and older in the WOW survey sample (n = 2161) compared with normative data for Canadian women of the same age**

Characteristic	WOW sample, % of women*	Normative data, % of women*
Geographic distribution <sup>13</sup>		
Newfoundland and Labrador	1	2
Prince Edward Island	0.5	0.5
Nova Scotia	4	3
New Brunswick	2	3
Quebec	23	25
Ontario	37	38
Manitoba	5	4
Saskatchewan	6	4
Alberta	9	8
British Columbia	13	13
Living in rural area <sup>13</sup>	22	19
Marital status <sup>14</sup>		
Married	55	41
Widowed	32	45
Divorced	8	6
Never married	4	6
Living alone <sup>15</sup>	38	38
University education <sup>16</sup>	12	7
Income, mean (SD), \$ <sup>17</sup>	19 623 (4 634)	19 397 (4 945)
Medical conditions <sup>18</sup>		
Hypertension	53	42
Diabetes mellitus	11	11
Arthritis	64	51
Perceived health status <sup>18</sup>		
Excellent	9	11
Very good	35	25
Good	39	34
Fair or poor	16	29
Mean SF-12 score <sup>12</sup>		
PCS†	43.8	43.7
MCS†	52.5	53.7
Use of ≥ 7 medications daily <sup>19</sup>	6	6

Note: WOW = What Older women Want, SD = standard deviation, SF-12 = Medical Outcomes Study 12-Item Short-Form Health Survey, PCS = Physical Component Summary, MCS = Mental Component Summary.

\*Unless stated otherwise.

†Lowest and highest possible PCS and MCS scores are set at 0 and 100, respectively. Higher scores indicate better health.

these priorities were being addressed by their health care provider (Table 2). For 4 of the contextual priorities — being seen as a “whole person,” spending enough time with the health care provider, receiving counselling about social services resources and receiving counselling about community programs — the respondents’ perceptions that care was being provided were not significantly associated with their reports that these priorities were of great importance to them.

For the most part, the proportions of women with specific priorities and perceptions of care were similar across the age groups. Only a few priorities significantly decreased in frequency with increasing age (Fig. 1). Among these, concerns about treating depression and reducing anxiety were most notably less frequent in later years. Concerns about hip fracture and being informed about social services increased slightly in the older groups but did not remain significant in post hoc regression analyses after adjustment for physical and mental health status (data not shown).

Fig. 2 shows the age-related differences in the proportions of women who perceived that care was being delivered. The largest reported significant difference in the perception of care delivery between the younger and older women was for breast cancer screening: 92% of those aged 55–64 reporting having received screening mammography or clinical breast examination during the 2 years before the survey, compared with 66% of those 80 years and older (Fig. 2, left panel). The opposite was true for pneumonia vaccination: 65% of women in the youngest group reported being vaccinated, compared with 91% of those in the oldest group (Fig. 2, right panel).

Provincial variations in the proportion of respondents who perceived that care was being delivered to address different health priorities are presented in Table 3. Quebec was ranked as having the highest proportion for 10 of the 26 health priorities; however, although this frequency was greater than the expected frequency of 3.7, it did not quite reach statistical significance ( $\chi^2 = 10.73$ , 6 degrees of freedom [df],  $0.01 > p > 0.05$ ). The Atlantic provinces were ranked as having the lowest proportion for 12 of the 26 health priorities; this frequency did differ significantly from the expected frequency of 3.7 ( $\chi^2 = 18.6$ , 6 df,  $p < 0.01$ ).

## Interpretation

The results of this large national survey suggest that older women’s health priorities encompass a wide range of physical, functional and psychosocial concerns about aging. The respondents’ priorities remained fairly consistent in early and late postmenopausal years. Perceptions of whether care was being delivered to address these health priorities varied according to the priority in question and, to a lesser extent, the age of the respondents and possibly the province in which they lived. For the most part, however, women who considered a specific health issue to be of great concern or importance to them were more likely than those

who did not consider it to be of great concern or importance to perceive that care was being delivered to address the issue of concern.

These results should be interpreted in light of several limitations. The first is the relatively low response rate. Only 52% of the women who were sent the questionnaire completed and returned it. Although this response rate is consistent with rates in other mailed health surveys involving elderly people,<sup>20,21</sup> a selection bias necessarily emerges: the WOW respondents aged 65 and older were more educated and slightly healthier than the average Canadian

woman in the same age group. In addition, a sampling bias resulted from the original sampling frame of Canada Post survey respondents, which only represented 15%–18% of the population. Priorities and perceptions of care could reasonably be different for less well-educated or sicker women, women who are not interested or capable of answering surveys, or those who are bed-bound or living in institutions. A second limitation is that recall bias may have led to an underestimation of women's perceptions of the care they received, especially because a response option of "I do not remember" was not offered. Cognitive impair-

**Table 2: Health priorities selected by WOW survey respondents and their perceptions that the priorities are being addressed through screening and counselling by health care providers**

Health priority	% of respondents selecting priority		% of respondents perceiving that priority is being addressed	Adjusted OR (95% CI) of respondents perceiving that priority is being addressed when it is of great concern or importance to them†
	Priority is of great concern or importance	Priority is not of great concern or importance*		
<b>Health condition</b>				
Osteoporosis	80	14	58	2.6 (2.1–3.2)
Falls	74	19	21	2.1 (1.6–2.7)
Stroke	58	26	96	2.1 (1.4–3.0)
Alzheimer's disease	55	23	10	1.4 (1.1–1.9)
Heart disease	51	29	97	1.7 (1.4–2.1)
Hip fracture	44	27	56	1.2 (1.1–1.5)
Colon cancer	42	26	39	1.8 (1.5–2.1)
Breast cancer	39	29	85	1.7 (1.5–2.1)
Diabetes	37	23	79	1.9 (1.5–2.4)
Pneumonia	33	26	82	1.7 (1.3–2.1)
<b>Functioning</b>				
Memory problems	88	9	11	1.9 (1.2–3.0)
Vision loss	86	11	45	1.7 (1.3–2.2)
Loss of muscle strength	75	22	29	1.7 (1.3–2.1)
Pain control	70	24	45	1.5 (1.2–1.8)
Urinary incontinence	64	25	25	2.1 (1.7–2.5)
Depression	60	23	19	2.1 (1.7–2.7)
<b>Contextual factors</b>				
Learning about side effects of medications	88	9	90	1.5 (1.1–2.2)
Being seen as a "whole person"	79	14	83	1.1 (0.8–1.4)
Spending enough time with health care provider	65	28	74	1.0 (0.8–1.2)
Learning what to expect from normal aging	60	32	35	1.4 (1.2–1.7)
Nutrition counselling	53	34	39	1.6 (1.4–1.9)
Addressing anxieties	51	31	35	2.2 (1.8–2.6)
Counselling about social services resources	46	33	51	0.9 (0.8–1.1)
End-of-life care	44	32	11	2.6 (2.0–3.4)
Exercise counselling	33	41	40	1.7 (1.4–2.0)
Counselling about community programs	28	41	62	1.0 (0.8–1.2)

Note: OR = odds ratio, CI = confidence interval.

\*Includes health priorities rated by respondents as being somewhat, a little bit or not at all important.

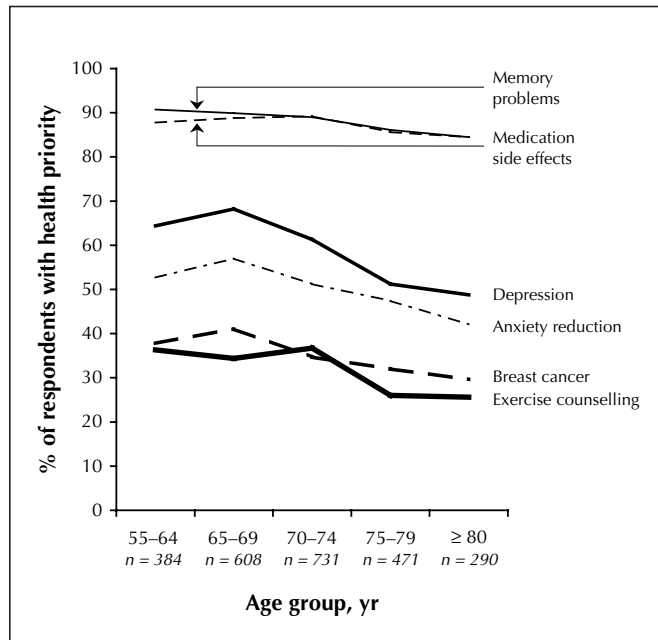
†Adjusted for age, and physical and mental health status (according to Physical Component Summary and Mental Component Summary scores).

ment was not measured among the respondents, although it is unlikely that women with such impairments would have been able to complete and return the questionnaire. Even among people with intact cognition, important differences often exist between care advised or delivered and care

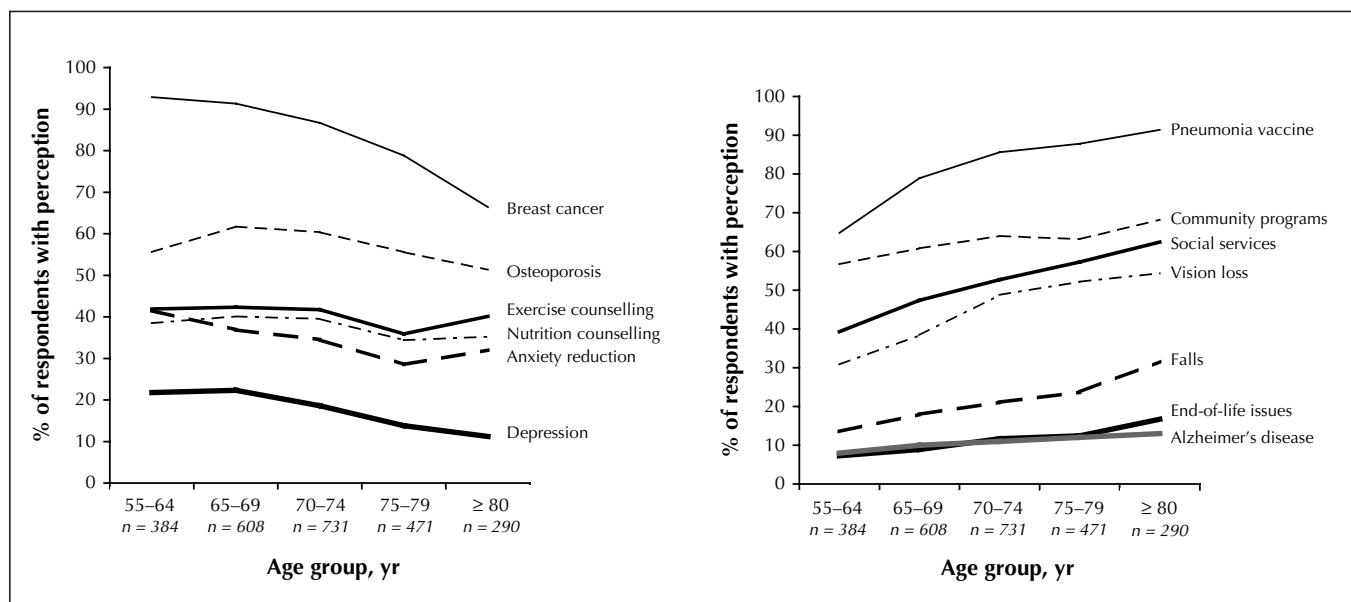
that is recollected or followed.<sup>22,23</sup> Furthermore, certain clinical screening strategies, such as observing gait and balance during an assessment of fall risk and informally testing a patient's memory, may not be fully appreciated by older women.

The decreases in frequency with increasing age that were observed for certain health priorities in the WOW study may have been due to shifting health concerns as part of the normal aging process for women or to secular trends in health concerns more prevalent among members of the younger "baby-boomer" generation. The differences in perceptions of care between different age groups may have been due to differences in recall among younger and older women. Actual variations in care is another possibility. Low but uniform rates of recall about addressing memory loss may have resulted from unclear recommendations to physicians about the benefits of screening for cognitive dysfunction among elderly people without functional impairment.<sup>24</sup> Despite current recommendations for screening, memory problems ranked at the top of the list of health priorities for women of all ages. Screening might be reconsidered, with the aim of reassuring older women when cognitive dysfunction does not exist.

Provincial variations in the respondents' perceptions of the delivery of care must also be interpreted cautiously. The WOW study was not designed to measure a priori such perceptions in different provinces. Nonetheless, for a statistically significant number of health priorities, the Atlantic provinces were ranked last in terms of the proportion of respondents who perceived that care was being delivered to address them. Results of our study can be used as incen-



**Fig. 1: Health priorities that decreased in frequency with increasing age of respondents.** Proportions shown are unadjusted and differed significantly ( $p < 0.05$ ) between age groups in  $\chi^2$  analyses.



**Fig. 2: Age-related differences in the proportions of women who perceived that health priorities were being addressed by their health care providers.** Left: Health priorities for which more women in the younger groups than in the older groups perceived as being addressed. Right: Health priorities for which more women in the older groups than in the younger groups perceived as being addressed. Proportions shown are unadjusted and differed significantly ( $p < 0.05$ ) between age groups in  $\chi^2$  analyses.

tive to investigate whether perceptions mirror actual deficiencies in care for these priorities in the Atlantic provinces compared with other Canadian provinces.

Conclusions about patient-centred care being delivered in concordance with the majority of women's health priorities must be viewed in light of the cross-sectional nature of this survey. For example, women who reported being greatly concerned about osteoporosis were 2.6 times more likely than those who were not greatly concerned about it

to perceive that their physicians screened them for this condition. Do women first express concern about osteoporosis and then their physician sends them for bone mineral density testing, or is the importance of preventing and treating osteoporosis only recognized by women after undergoing screening? The former presupposes that women have the power to direct the health agenda and that imparting knowledge to older women may lead to improved screening rates for certain conditions. The latter suggests

**Table 3: Provincial variations in the proportion of respondents who perceived that their health priorities were being addressed by health care providers (abridged)\***

Health priority	% of respondents perceiving that health priority was being addressed†	Ranking of province‡	
		Highest % of respondents with perception	Lowest % of respondents with perception
<b>Health condition</b>			
Osteoporosis	47–66	Alberta	Atlantic provinces
Falls	15–29	Quebec	British Columbia
Stroke	93–97	Quebec	British Columbia
Alzheimer's disease	7–11	Ontario	Atlantic provinces
Heart disease	93–98	Quebec	British Columbia
Hip fracture	37–72	Alberta	Saskatchewan
Colon cancer	33–55	Manitoba	Atlantic provinces
Breast cancer	74–89	British Columbia	Atlantic provinces
Diabetes	71–86	Quebec	British Columbia
Pneumonia	74–89	Ontario	Atlantic provinces
<b>Functioning</b>			
Memory problems	6–15	Quebec	Alberta
Vision loss	39–48	Atlantic provinces	British Columbia
Loss of muscle strength	22–35	Quebec	Atlantic provinces
Pain control	38–49	Ontario	Atlantic provinces
Urinary incontinence	20–30	Saskatchewan	Manitoba
Depression	15–20	British Columbia	Atlantic provinces
<b>Contextual factors</b>			
Learning about side effects of medications	87–93	Saskatchewan	Quebec
Being seen as a "whole person"	79–86	Quebec	Alberta
Spending enough time with health care provider	70–79	Saskatchewan	British Columbia
Learning what to expect from normal aging	30–42	Quebec	Atlantic provinces
Nutrition counselling	31–42	Ontario	British Columbia
Addressing anxieties	30–46	Quebec	Atlantic provinces
Counselling about social services resources	43–62	Quebec	Atlantic provinces
End-of-life care	6–13	British Columbia	Atlantic provinces
Exercise counselling	36–45	Manitoba	Saskatchewan
Counselling about community programs	55–74	British Columbia	Quebec

\*Data for individual provinces are available in a longer, online version of this table ([www.cmaj.ca/cgi/content/full/173/2/153/DC1](http://www.cmaj.ca/cgi/content/full/173/2/153/DC1)).

†These values are crude estimates and were not adjusted for characteristics of the respondents because there were no significant differences in the mean age or physical and mental health status of the respondents between provinces.

‡The distribution of provinces did not differ significantly among those ranked as having the highest proportion of respondents perceiving that care was being addressed for a given health priority; it did differ significantly ( $p < 0.001$ ) among those ranked as having the lowest proportion of respondents with such a perception. Note: Atlantic provinces include Prince Edward Island, Nova Scotia, New Brunswick, and Newfoundland and Labrador.

that physicians should continue to be targeted for education campaigns about the importance of health promotion and disease prevention among their elderly female patients.

In conclusion, older women have many health priorities, and if their perceptions are correct, it appears that health care providers are addressing many, but not all, of their health concerns. Further research is needed to test whether addressing older women's health priorities results in measurable improvements in their health outcomes.

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**Contributors:** Cara Tannenbaum conceptualized the project, developed the questionnaire, conducted the study, analyzed the results and wrote the manuscript. Nancy Mayo was responsible for developing the methodology, guiding the analyses and revising the original manuscript. Francine Ducharme was involved in the development of the protocol and theoretical framework for the study and reviewed the final draft of the manuscript. All of the authors approved the final version to be published.

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### Clinical trial registration

CMAJ will consider clinical trials for publication only if they have been registered in a publicly accessible clinical trials registry before the enrolment of the first patient. This policy applies to trials that start recruiting on or after July 1, 2005. For trials that began enrolment before this date, registration is required by Sept. 13, 2005. The criteria for acceptable registration are described in CMAJ (2005;172[13]:1700-2).