

Unmet Health Care Needs Among Older People in Canada: Does Household Food Insecurity Matter?



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ABSTRACT

Background

Canada is undergoing a demographic shift, with projections indicating that over 25% of the country's population will be 65 years or older by 2063. While this has raised critical concerns about Canada's preparedness to meet the social and health-care needs of an aging population, the increasing incidence of food insecurity is particularly affecting vulnerable groups, such as older Canadians, with implications for their health-care service utilization. Despite this observation, there are nascent studies examining the role of household food insecurity status on unmet health-care needs among older people in Canada. The main objective of our study is to assess the association between household food insecurity and unmet health-care needs among older Canadians.

Methods

We used data from a selected sample of 21,178 participants as part of the 2017–18 Canadian Community Health Survey and applied logistic regression analysis.

Results

Our findings indicate that older people experiencing any type of food insecurity, that is, either moderate (OR=3.07, $p < .01$) or severe (OR=4.09, $p < .01$) were more likely to have reported unmet health-care needs compared to their counterparts in food secure households, even after controlling for a range of demographic, socioeconomic, and health and health-care variables. Our finding is concerning, considering that older people in Canada who are in most need of health-care services due to their food insecurity status are instead reporting unmet health-care needs.

Conclusion

This revelation calls for urgent policy attention to reduce the episodes of household food insecurity among older people in

Canada. Specifically, to improve their access to health-care services, providing them with periodic grocery rebates as part of the social protection package for seniors in Canada would help mitigate the problem of food insecurity among them.

Key words: unmet health-care need, older age, seniors, food insecurity, Canada

INTRODUCTION

Efforts to address global food insecurity have done little to eradicate episodes of individual and household food insecurity.^(1,2) In Canada, for instance, scholars have noted the problem of rising individual and household food insecurity, where between 2021 and 2022, food insecurity was noted to have increased from 16% to 18%.⁽³⁾ Food insecurity is defined by Statistics Canada as an “inability to acquire or consume an adequate diet quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so”.⁽⁴⁾ This definition suggests Canadians may be differently exposed to the problem of food insecurity, especially as household food insecurity is often linked to a household's financial capacity to access adequate food.^(4,5) In a 2022 report on household food insecurity across Canada, it was revealed that, while the national average for household food insecurity stood at 16%, families with a racialized major income earner (23%), families with an Indigenous major income earner (34%), and Black Canadians living below the poverty line (56%) reported disproportionately higher rates of household food insecurity.⁽³⁾

While the highest rate of food insecurity is reported among households headed by middle-aged Canadian cohorts (35–44 yr. old), older people in Canada are emerging as also vulnerable. It is reported by Uppal⁽³⁾ that 10% of families headed by Canadians aged 65 years or older experienced food insecurity. Similarly, Li and Valerie⁽⁶⁾ noted that in 2022, households where the main source of income was social

assistance (69.9%) and seniors' public pension (15.4%) were among those reporting the highest levels of household food insecurity in Canada. The revelation that most older people in Canada depend on social transfers and senior public pensions further underscores the risk of their exposure to household food insecurity, and additional projections that seniors will constitute 25% of Canada's population by 2063 raises major concerns.⁽⁷⁾

The above revelations about the risk of food insecurity among older people in Canada are rather concerning as food security status is observed to influence the quality of life of older people and their health outcomes.⁽⁸⁾ Among people aged 60 and older living in the United States, it was observed that households reporting food insecurity experienced more than 16 days of poor physical health, poor mental health, and feelings of anxiety.⁽⁹⁾ Similarly, food insecurity among older adults has been associated with direct and indirect adverse health outcomes such as poor self-rated health, lower cognitive function, hypertension, cardiovascular diseases, osteoporosis, and gum disease, among others.^(10–13) Still, in the US, it was further observed that food insecurity among older people resulted in poor macro- and micronutrient intake, increased disease or worsened existing diet-related health conditions.^(14,15) Specifically in Canada, several studies have also noted the adverse impact of household food insecurity on poor health outcomes, including the risk of diabetes, infectious diseases, poor oral health, chronic conditions, depression, and anxiety disorders.^(16–20)

Studies have pointed to the inverse relationship between household food insecurity and health-care utilization, where food insecure households also experience poor access to health-care services. For instance Antabe *et al.*⁽²¹⁾ established that food insecure households in Ghana were less likely to have enrolled on the country's health insurance scheme, which could boost their access to health-care services. Elsewhere in the US, Janio and Sorokin⁽²²⁾ also noted that food insecure households reported decreased access to and quality of care. Despite their poor access to health-care services, studies have noted the heightened use of health-care services, particularly emergency services, for households experiencing household food insecurity. Such households also report relatively higher health-care costs than their food secure counterparts. For example, Dean and colleagues⁽²³⁾ found in the US that food insecure households were not only more likely to report expenditures associated with the use of any health-care expenditure covering inpatient, emergency, outpatient and pharmaceuticals, but they were also more likely to report total health-care expenditures that were 24.8% higher than that of their food secure counterparts. Still in the US, a longitudinal study among adults aged 18 years or older found that food insecurity was associated with emergency department visits, hospitalizations, days hospitalized, with those items being in the top 10%, 5%, and 2% of health-care expenditures, respectively.⁽²⁴⁾ Among older people, a study also found that food insecurity was associated with an increased likelihood of using health services for adverse health events by 16% and emergency visits by 24%.⁽²⁵⁾

Despite the forgoing evidence suggesting the potential influence of household food insecurity status on access to and utilization of health-care services, there has been a paucity of research in Canada focused on how food insecurity status may be impacting the ability of older people to meet their health-care needs. This is particularly critical as older people, an increasing population in Canada, emerge as a group most in need of health-care whose heightened incidence of household food insecurity may be further contributing to compounding their poor health experiences.^(7,26,27) To contribute to the literature and health policy in Canada, our study examines the influence of household food insecurity status on unmet health-care needs among older people living in Canada.

Although food insecurity may influence households' capacity to meet their health-care needs, scholars have also identified other factors influencing people's capacity to meet their health-care needs. Specifically, unmet health-care needs represent the inability of an individual to receive the needed care at the time they require it, mostly due to service availability, accessibility, and acceptability.^(28,29) To reduce the episodes of unmet health-care needs and population health disparities, the Canada Health Act of 1984 introduced Medicare, which enshrined citizens free access to a range of health-care services, but may exclude dental care and pharmaceutical costs.^(30,31) Regardless, studies have reported the incidence of unmet health-care needs in Canada, suggesting there are still population disparities in accessing care when needed. For instance, Sibley and Glazier⁽²⁸⁾ reported that unmet health-care needs in Canada differed by province, age cohort, educational attainment, gender, and income. Additionally, during COVID-19, Khattar *et al.*⁽³²⁾ noted that socioeconomic status, demographic and locational factors, and people's health characteristics were associated with reporting unmet health-care needs.

Despite the importance of these studies suggesting unmet health-care needs among Canadians, we do not know the relationship between household food insecurity and the unmet health-care needs of older people. The contribution of this study is to examine the impact of household food insecurity on older people's capacity to meet their health-care needs. This study is particularly critical to informing policy in Canada on meeting the health-care needs of older people who not only emerge as needing more health-care services, but who also may be susceptible to episodes of household food insecurity.

METHODS

We used data from the 2017–18 round of the Canadian Community Health Survey (CCHS). The CCHS is a nationally representative survey that uses three sampling frames (i.e., an area frame, a list frame, and a random digit dialing frame) to obtain health information from Canadians aged 12 and older. The sampling framework excludes residents living on reserves, full-time members of the Canadian Forces, and institutionalized populations. In the 2017–18 CCHS, information on unmet health care is collected in selected

provinces, including Nova Scotia, New Brunswick, Ontario, Manitoba, and Alberta. Given our interest in the association of food insecurity with self-perceived unmet health-care needs among older adults, the sample was restricted to those aged 60 or older. To this end, our study sample includes 21,178 older adults from Nova Scotia, New Brunswick, Ontario, Manitoba, and Alberta. Statistics Canada provides additional information on the CCHS, including sample design and data collection.⁽³³⁾ Additional information about the CCHS, including study design, has been published elsewhere.⁽³⁴⁾ This study did not require ethics approval as it is a secondary analysis of the public use microdata file from the CCHS.

Measures

Our dependent variable is “self-perceived unmet health-care needs.” This is based on answers provided by respondents to the question asking whether they felt that health care was needed but not received in the last 12 months, coded as met (0) and unmet (1). Our independent variable is “food insecurity status.” The CCHS measures food insecurity at three different levels: household status, adult status, and child status, using the Household Food Security Survey Module. This module assesses household food insecurity over the last 12 months based on 18 questions comprising 10 adult-referenced questions (the Adult Scale) and eight child referenced questions (Child Scale) (if a child is present). Given our focus on older adults, we employed the Adult Scale.

The CCHS measures adult food insecurity in households based on the following 10 indicators: The respondent experiences anxiety about their food running out before they have the money to buy more; the food they buy doesn't last and they don't have the money to buy more; they can't afford to eat balanced meals; they have cut or skipped meals in the past three or more months; they have ever eaten less than they felt they should; they have ever been hungry but didn't eat; they have lost weight; they have never skipped a whole day in the past three or more months. Based on responses to these questions, the CCHS categorizes adult food insecurity into three levels (food secure; moderately food insecure; and severely food insecure). An individual in the “food secure” category implies that there was no or only one indication of difficulty with access to food due to insufficient income; in moderately food insecure, there were two to four affirmative responses to the 10 questions, which is considered an indication of compromise in the quality and/or quantity of food consumed; and in severely food insecure, there were five or more affirmative responses to the 10 questions, which is interpreted as an indication of reduced food intake and interrupted eating patterns.

Following the literature on food insecurity and to account for possible confounding factors, we included three sets of control variables. These are demographic, socioeconomic, and health-related variables. Demographic and socioeconomic factors include age of respondents (0 = 80 years or older; 1 = 75–79 years; 2 = 70–74 years; 3 = 65–69 years; 4 = 60–64 years); racial background (0 = White; 1 = Non-White); immigration status (0 = native-born; 1 = immigrant); sex

(0 = male; 1 = female); province of residence (0 = Manitoba; 1 = Nova Scotia; 2 = New Brunswick; 3 = Ontario; 4 = Alberta); marital status (0 = married; 1 = common-law; 2 = formerly married; 3 = single); level of education (0 = no high school education; 1 = high school education; 2 = college or university education); and household income (0 = less than \$20,000; 1 = \$20,000 to \$39,999; 2 = \$40,000 to \$59,999; 3 = \$60,000 to \$79,999; 4 = \$80,000 or more). Finally, we included self-rated general health (0 = good; 1 = poor) and access to regular health care (0 = Yes; 1 = No) as two health factors.

Statistical Analysis

In this study, we organized our analysis into two parts. First, we employed univariate analysis to understand the characteristics of the study sample. Second, to understand the association between food security status and perceived unmet health-care needs among older adults in Canada, we conducted a regression analysis. For the regression analysis, we chose a logistic regression technique because the dependent variable is dichotomous, as shown in Table 1. We estimated the bivariate relationship between the dependent and independent variables in the unadjusted model while controlling for sociodemographic, health care, and health variables in the adjusted model. We adjusted the analyses using sampling weights provided by Statistics Canada. All analyses were carried out using STATA 17 (State Corp., College Station, TX, USA). The ‘svy’ function was applied in statistical analysis to adjust for the sampling weights provided by Statistics Canada.

RESULTS

Table 1 shows the sample characteristics. We found that 4% of older adults reported unmet health-care needs, whereas 3% and 1% were moderately and severely food insecure in the past 12 months, respectively. Regarding demographic characteristics, the majority of older adults were white (86%) and non-immigrant (69%). Similarly, most older adults lived in Ontario (67%), followed by Alberta (17%), which confirms what other studies have found. Likewise, more than half of respondents were female (54%), married (65%), came from households where the highest education was a college or university degree, and about half lived in households with an income of \$80,000 or more (45%). Finally, about 5% of older adults indicated that they did not have access to regular health care, with 17% rating their general health as poor.

Table 2 shows findings from the logistic regression analysis. In the unadjusted model, we realized that older adults with moderate (OR = 3.92, 95% CI = 1.88–8.21) and severe (OR = 7.08, 95% CI = 4.17–12.01) food insecurity were more likely to have unmet health-care needs compared to those without any food insecurity. In the adjusted model, the relationship remained statistically significant, although the odds ratios were reduced with the introduction of sociodemographic and health-care variables for moderate (OR = 3.07, 95% CI = 1.43–3.56) and severe (OR = 4.09, 95% CI = 2.47–6.77) food insecurity, respectively.

TABLE 1.
 Characteristics of sample exploring unmet health-care needs among older adults in Canada (n=21,178 representing the population of 4,397,024)

	Percentage	Weighted counts
Unmet Health-care Needs		
No	96	4,206,935
Yes	4	190,088
Household Food Security Status		
Secure	96	4,168,689
Moderately insecure	3	128,323
Severely insecure	1	61,834
Sex		
Male	46	2,059,669
Female	54	2,337,354
Age		
60-64	31	1,304,478
65-69	25	1,064,923
70-74	19	810,761
75-79	12	546,352
80+	13	670,510
Province		
Manitoba	6	245,536
Nova Scotia	6	237,918
New Brunswick	5	200,476
Ontario	67	2,981,014
Alberta	17	732,081
Immigrant Status		
Immigrant	31	1,410,129
Non-immigrant	69	2,986,895
Racialized Groups		
White	86	3,731,124
Non-white	14	665,900
Marital Status		
Married	65	2,822,414
Common-law	4	188,143
Formerly married	25	1,115,476
Single	6	270,990
Highest Household Education		
No high school	18	851,913
High school	24	1,051,85
College/university	58	2,493,245
Household Income		
Less than \$20,000	6	242,572
\$20,000-\$39,999	17	770,432
\$40,000-\$59,999	18	786,612
\$60,000-\$79,999	14	638,176
\$80,000 or more	45	1,959,231
Have Access to Regular Health Care		
Yes	95	4,187,761
No	5	209,263
Self-Rated General Health		
Good	83	3,563,168
Poor	17	833,855
Total	100	4,397,024

Beyond food security status, we found a range of sociodemographic and health-care characteristics to be associated with unmet health-care needs among older adults in the adjusted model. For example, older females (OR = 1.45, 95% CI = 1.12–1.88) were more likely to have felt that health care was needed but not received, in contrast to their male counterparts. We equally identified that older adults who lived in Ontario (OR = 1.66, 95% CI = 1.14–2.43) were more likely to report unmet health-care needs compared to those in Manitoba. Similarly, older adults who were formerly married (OR = 1.57, 95% CI = 1.12–2.21) were more likely to report unmet health needs compared to those who were currently married. Surprisingly, older adults from households with college or university education (OR = 2.54, 95% CI = 1.81–3.57) were more likely to report unmet health needs than their counterparts without high school education. Unsurprisingly, older adults who indicated that they did not have access to regular health care (OR = 1.81, 95% CI = 1.27–2.57) and who rated their general health to be poor (OR = 3.02, 95% CI = 2.32–3.93) were more likely to report unmet health needs compared to their counterparts who had access to regular health care and whose general health was rated good.

DISCUSSION

Evidence suggests that in Canada, not only are households headed by older people more likely to report household food insecurity, but those with government transfers and senior public pensions as the main source of household income are also at increased risk of household food insecurity. Despite this evidence and the observation that older people are in most need of health-care services in Canada, studies have yet to examine the association between household food insecurity and unmet health-care needs among older people. Using the 2017–18 Canadian Community Health Survey, our study sought to contribute to the literature and health policy in Canada by examining the influence of household food insecurity status on the unmet health-care needs of older people in Canada.

Our findings revealed that older Canadians who reported any form of household food insecurity, either moderate or severe, were more likely to report unmet health-care needs. Given the evidence that both older age and food insecurity status may require improved access to health-care services, our finding is rather concerning as older people in Canada who are food insecure are more likely to report unmet health-care needs relative to their food secure counterparts.

Our finding can be explained by the fact that budgets in food insecure households may already be stretched to meet their nutritional needs. This limits the capacity of such households to spend on or reprioritize utilizing health-care services not already covered by Medicare, such as dental and pharmaceutical costs. For instance, as most older people have to pay for dental care services out of pocket, Yao and Macentee⁽³⁵⁾ found that not only did an estimated 90% of older people aged 60 to 79 years had ongoing challenges with

ROGER: FOOD INSECURITY STATUS AND OLDER CANADIANS' UNMET HEALTH-CARE NEEDS

TABLE 2.
Logit models predicting unmet health-care needs among older people in Canada

	<i>Unadjusted</i>			<i>Adjusted</i>		
	<i>OR</i>	<i>95% CI</i>		<i>OR</i>	<i>95% CI</i>	
Household Food Security Status						
Secure	1.00			1.00		
Moderately insecure	3.92 ^a	1.87	8.21	3.07 ^b	1.43	6.56
Severely insecure	7.08 ^a	4.17	12.01	4.09 ^a	2.47	6.77
Sex						
Male	1.00			1.00		
Female	1.55 ^a	1.20	2.00	1.45 ^b	1.12	1.88
Age						
60-64	1.00			1.00		
65-69	0.96	0.68	1.34	1.08	0.77	1.51
70-74	0.82	0.53	1.26	0.98	0.63	1.52
75-79	0.58 ^c	0.38	0.90	0.69	0.44	1.08
80+	0.93	0.61	1.41	1.15	0.73	1.82
Province						
Manitoba	1.00			1.00		
Nova Scotia	1.24	0.76	2.04	1.17	0.71	1.94
New Brunswick	0.90	0.52	1.55	0.88	0.50	1.54
Ontario	1.70 ^b	1.15	2.52	1.66 ^b	1.14	2.43
Alberta	1.08	0.71	1.65	1.04	0.68	1.59
Immigrant Status						
Immigrant	1.00			1.00		
Non-immigrant	0.98	0.70	1.36	1.11	0.74	1.67
Racialized Groups						
White	1.00			1.00		
Non-white	0.96	0.62	1.49	0.97	0.55	1.71
Marital Status						
Married	1.00			1.00		
Common-law	1.62	0.98	2.68	1.55	0.93	2.59
Formerly married	1.93 ^a	1.43	2.61	1.57 ^b	1.12	2.21
Single	1.43	0.92	2.21	1.04	0.71	1.52
Highest Household Education						
No high school	1.00			1.00		
High school	1.34	0.92	1.94	1.64 ^c	1.11	2.42
College/university	1.79 ^a	1.30	2.47	2.54 ^a	1.81	3.57
Household Income						
Less than \$20,000	1.00			1.00		
\$20,000-\$39,999	0.47 ^a	0.31	0.72	0.74	0.47	1.17
\$40,000-\$59,999	0.35 ^a	0.21	0.57	0.66	0.38	1.15
\$60,000-\$79,999	0.46 ^b	0.26	0.81	0.97	0.49	1.93
\$80,000 or more	0.42 ^a	0.27	0.64	0.95	0.57	1.59
Have Access to Regular Health Care						
Yes	1.00			1.00		
No	1.82 ^a	1.28	2.58	1.81 ^a	1.27	2.57
Self-Rated General Health						
Good	1.00			1.00		
Poor	3.08 ^a	2.39	3.97	3.02 ^a	2.32	3.93

^a*p*<.001.

^b*p*<.01.

^c*p*<.05.

dental care that needed medical attention, but many reported unmet dental care needs. The authors therefore cautioned that these unmet dental care needs may worsen with time as more of them get older and frail. Outside Canada, other studies have also established the link between household food insecurity status and unmet health-care needs, where in Ghana, for example, Amoak *et al.*⁽³⁶⁾ found that food insecurity status among older people was associated with unmet dental health-care needs. In Korea, Choe and Pak⁽³⁷⁾ also established that moderate and severe food insecure households reported heightened rates of unmet health-care needs relative to their counterparts in food secure households. For Canada, this finding underscores the need for both federal and provincial governments to pay increased attention to the food security status of older people while putting into place more social policies that will substantially increase their access to health-care services. It will also be prudent for policymakers to identify other factors that may be intersecting with household food insecurity status to reduce this vulnerable population's access to needed health care in Canada.

We also observed that older people's demographic characteristics were associated with their access to health-care services. For example, females were more likely to have reported unmet health-care needs than males. This finding is consistent with Hou *et al.*'s⁽³⁸⁾ earlier research in Canada, where the authors attributed the gender-based differences in unmet health-care needs to females having a perception of a poorer health status. This may translate into more females perceiving the need for more services to reverse their poor health status. Similarly, Amoak *et al.*⁽³⁶⁾ found that among older people in Ghana, females were more likely to report unmet health-care needs, that is, unmet dental care needs, compared to their male counterparts. We further observed that compared to the Province of Manitoba, older people in Ontario were more likely to report unmet health-care needs. This finding reflects provincial-level initiatives to improve health-care access for residents, including older people. For instance, Manitoba has implemented initiatives to increase access to family doctors and family health themes, and expanded and linked primary health-care providers for better and effective service delivery.⁽³⁹⁾ More recently, to ensure Manitoba becomes a leading destination for aging in Canada, a provincial seniors strategy has been launched which will continue to ensure older people in the province have unhindered access to health care and other social services.⁽⁴⁰⁾ These initiatives in Manitoba may have worked overtime to reduce the episodes of unmet health-care needs reported among their senior population.

We further observed that older people who were formerly married were more likely to report unmet health-care needs than their married counterparts. This finding is consistent with the literature and is explained by the observation that marriage may serve as a proxy for social support, which is associated with the improved utilization of health-care services.⁽⁴¹⁾ Elsewhere, it has been argued that marriage protects against poor health by acting as a form of social

and health behaviour control that increases participation in activities that promote health.⁽⁴²⁾

Socioeconomic factors were also associated with reporting unmet health-care needs among older people in Canada. Relative to those without educational attainment, older people with high school and college or university degrees were more likely to report unmet health-care needs. This finding is consistent with earlier studies in Montreal, Quebec, Canada, where it was established that people with higher educational attainment were more likely to report unmet health-care needs.⁽⁴³⁾ Similar findings have also been established by Sibley and Glazier,⁽²⁸⁾ where, across Canada, they found that higher educational attainment was associated with a higher likelihood of reporting unmet health-care needs. Furthermore, health access characteristics, such as those stating they did not have regular health-care access, were more likely to report unmet health-care needs. In unpacking this finding, Allan and Ammi⁽⁴⁴⁾ contend that having regular access to health care places people in the health-care system where they can easily be referred to a range of health services when needed. Finally, those describing their subjective health as poor were more likely to report unmet health-care needs than their counterparts who rated their health as excellent. This finding may not be surprising as those with poor self-rated health may perceive the need for more health-care services relative to their counterparts who believe they are healthy. This finding is consistent with Wu *et al.*⁽⁴⁵⁾ who observed in China that unmet health-care needs were associated with poor self-rated health.

Our study has some noteworthy limitations. We recognize that our data from the CCHS was collected contemporaneously, which limits our study findings to statistical association. Secondly, the question on unmet health-care needs did not specify the type of health-care services needed but was not received and if this was due to cost. In addition, given the subjective nature of our predictor and outcome variables, they may be affected by recall bias as participants were asked to recall when they could not receive health care when needed or suffered from food insecurity. Despite these, our study makes an important contribution to the literature and health policy in Canada.

Informed by our findings, we make some policy recommendations. First, addressing food insecurity among older people in Canada is critical to ensuring they access needed health care. Furthermore, while evidence suggests that older people may be among those with the lowest rate of household food insecurity at 10%, it is still important to work to reduce this prevalence further. It may be prudent to design social policies that specifically address food insecurity incidents, including providing grocery rebates for those going through severe episodes of household food insecurity. Beyond these temporary measures, there is a need for long-term sustainable policy designs informed by an in-depth analysis of the contextual dynamics and factors contributing to the problem of food insecurity among older people in Canada. This will require identifying the most vulnerable and targeting

them with interventions that reduces their susceptibility to episodes of household food insecurity. Removing structural barriers that prevent older people from having improved access to health-care services will be helpful. It is also crucial for the province of Ontario to work on reducing the barriers older people face in accessing health-care services. It may be particularly useful to subsidize the cost of health-care services not covered under Medicare. Among unmarried older people, there is a need for specific and targeted interventions that work to increase their access to health care when needed. Finally, there is an urgent need to create opportunities for older Canadians to access regular health care as that works to improve their utilization of health-care services when needed.

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We have read and understood the *Canadian Geriatrics Journal's* policy on conflicts of interest disclosure and declare there are none.

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