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Can Canadian Seniors on Public Pensions Afford a Nutritious Diet?*

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RÉSUMÉ

La présente étude a évalué si les pensions publiques du Canada (Sécurité de la vieillesse et Régime de pension du Canada) fournissaient aux aînés vivant en Nouvelle-Écosse (N.-É.) un revenu adéquat qui puisse leur permettre de bénéficier d'un régime alimentaire de base nutritif en 2005. Les revenus mensuels ont été comparés aux dépenses mensuelles essentielles de quatre types de ménages: 1) couple marié, 80 ans et 78 ans, en milieu urbain en Nouvelle-Écosse; 2) homme célibataire, 77 ans, en milieu rural en Nouvelle-Écosse; 3) couple, 70 ans et 65 ans, en milieu rural en Nouvelle-Écosse; 4) veuve, 85 ans, en milieu urbain en Nouvelle-Écosse. Le coût mensuel des quatre ménages étaient respectivement de 313,32\$, 193,83\$, 316,71\$ et 150,89\$. Les résultats ont indiqué que le ménage de chacun des célibataires manquait des fonds nécessaires pour respecter un régime alimentaire nutritif, tandis que la vie avec un partenaire semblait protéger contre un manque de ressources financières adéquates. Ces résultats illustrent le besoin d'améliorer les régimes de retraite du Canada afin de s'assurer que tous les aînés aient des ressources financières qui leur permettent de subvenir à leurs besoins essentiels, notamment en matière d'obtention d'aliments nutritifs, de prévention des maladies chroniques, et d'amélioration finale de leur qualité de vie.

ABSTRACT

This study examined whether Canada's public pensions (Old Age Security and Canada Pension Plan) provided adequate income for seniors living in Nova Scotia in 2005 to afford a basic nutritious diet. Monthly incomes were compared to essential monthly expenses for four household scenarios: (a) married couple, 80 years and 78 years, in urban Nova Scotia; (b) single male, 77 years in rural Nova Scotia; (c) a couple, 70 years and 65 years, in rural Nova Scotia; (d) widowed female, 85 years, in urban Nova Scotia. The monthly food costs for the four households were CAN\$313.32, \$193.83, \$316.71, and \$150.89, respectively. Results showed that both single-member households lacked the necessary funds for a nutritious diet, while living with a partner seemed to protect against inadequate financial resources. These findings illustrate the need to improve Canada's retirement systems to ensure all seniors have adequate financial resources to meet their basic needs—including nutritious food—prevent chronic disease, and ultimately improve quality of life.

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Introduction

Canada's population demographics are shifting towards a more elderly profile as seniors (those 65 years and older) become the fastest-growing age group in the country (National Advisory Council on Aging [NACA], 2003). In 2000, seniors represented 12.5 per cent of the population, and there are projections that they will represent 18 per cent by 2021 (NACA, 2005). In Nova Scotia, the senior population is expected to grow by 80 per cent over the next 20 years, compared with only 3 per cent growth among the general population (Nova Scotia Seniors' Secretariat, 2005a). This dramatic growth warrants an examination of the ability of seniors to age with dignity, specifically whether they have the financial resources to acquire the basic necessities of life, including a nutritious diet.

Statistics Canada reports 6.8 per cent of all seniors in Canada are living below the *after-tax* Low Income Cut Off (LICO), Canada's unofficial poverty line, while over 17 per cent of unattached seniors currently live below the LICO (cited in NACA, 2005). The LICO is an income threshold below which a family will devote 20 per cent more of its income to the necessities of food, shelter, and clothing than the average Canadian family living in a similar-sized community (Canadian Council on Social Development, 2005). Thus if the average Canadian two-person household spends 40 per cent of its total income on food, shelter, and clothing, a senior couple living in the same-sized community who spend 60 per cent or more of their income is considered to be living under the LICO.

Nova Scotian seniors fare much worse; the most recently analysed census data show 15 per cent of those over age 65 years are living below the LICO (Nova Scotia Seniors' Secretariat, 2005a). Two thirds of these less fortunate seniors are unattached women; in fact, almost one half of all senior women living by themselves in Nova Scotia live below the LICO (Nova Scotia Seniors' Secretariat, 2005a). Moreover, women, who tend to live longer than men, represent a higher proportion of our aging population. As of 2005, a 65-year-old woman is likely to live three years longer than her male counterpart, and the older the age cohort, the greater the ratio of females to males; in the

90-plus category, women outnumber men almost four to one (Nova Scotia Seniors' Secretariat, 2005a).

The rate of poverty among some groups of Canadian seniors is alarming because income and social status have been identified as the most significant social determinant of health across all populations (Public Health Agency of Canada, 2004). Income is also a major predictor of an individual or family's being able to access enough nutritious food, with low-income people at greater risk of food insecurity than those in higher-income categories (Rainville & Brink, 2001; Tarasuk, 2001, 2005; Williams et al., 2006). *Food insecurity* is defined as the inability to obtain enough nutritious, personally acceptable food through normal food channels or the uncertainty that one will be able to do so (Davis & Tarasuk, 1994). The phrase *having access to food* recognizes the right of individuals to secure adequate food through purchase (e.g., at grocery stores), production (e.g., a backyard garden), or other socially acceptable ways that maintain human dignity. Socio-economic status is often a major factor influencing the accessibility of food (Canadian Home Economics Association, 1999). The inability to access food, food insecurity, is a phenomenon more commonly studied in Canadian households with children and understudied in senior populations.

Most of the influential work on food insecurity in seniors has come from Cornell University and has been qualitative in nature, focusing on senior-identified contributing factors to food insecurity (Wolfe, Olson, Kendall, & Frongillo, Jr., 1996) and the progression of severity of food insecurity (Wolfe, Olson, Kendall, & Frongillo, Jr., 1998). However, health- and social structures in Canada are very different from those in the United States.

In Canada, the retirement income system has three levels: The first two levels are public programs and consist of Old Age Security (OAS) and the Canada Pension Plan (CPP). The third level consists of private pensions and savings. The OAS program is financed by federal government general tax revenues (Human Resources Development Canada [HDRC], 2001a). Benefits of the program include the OAS basic pension, which is available to almost all seniors over

the age of 65 years, as well as two targeted benefits, the Guaranteed Income Supplement (available to low-income OAS pensioners) and the Allowance (available to 60-to-64-year-old spouses or common-law partners and survivors of GIS recipients). When referring to public pensions, this article also refers to the GIS and Allowance as part of the larger OAS program. The CPP is available to individuals who paid into the program during their working years and provides a monthly retirement pension as early as age 60 years.

There is a strong dependence by the majority of the senior population on the two public pension programs (HDRC, 2001a, 2002; NACA, 2005). These programs provide the *only* source of income for more than a quarter of the senior population (HDRC, 2002) and constitute the *main* source of income for over two thirds of the population (NACA, 2005). The adequacy of these public programs to cover seniors' basic necessities is of paramount concern, pointing to a critical need to examine, within a Canadian context, the issue of income-related food insecurity in seniors.

The purpose of this study was to determine the adequacy of the Canada Pension Plan and/or the Old Age Security program to enable seniors in Nova Scotia living solely on Canada's two public pension programs to afford a basic nutritious diet. Previous published research has used similar methods to examine the adequacy of social assistance in Ontario (Vozoris, Davis, & Tarasuk, 2002) and minimum wage in Nova Scotia (Williams et al., 2006) for non-senior households. Affordability assessments, which compare income to essential living expenses to see if there is enough money left for food, have not yet been documented in the literature for senior household scenarios.

Methods

Food-Costing Data

Data from the most recent provincial food-costing study released in Nova Scotia (Nova Scotia Participatory Food Security Projects, 2007) were used to determine the cost of a basic nutritious diet for seniors. Food-costing data were collected using Health Canada's National Nutritious Food Basket (NNFB). This data collection tool lists 66 basic, minimally processed foods that are both widely available and commonly eaten by most Canadians and that would meet nutrition recommendations for specific age and gender groups (Lawn, 1998). These foods can be placed into 11 general food-item categories: (a) milk products, (b) eggs, (c) meat products, (d) meat alternatives, (e) grain products,

Table 1: Monthly Cost of a National Nutritious Food Basket (NNFB) in Nova Scotia by age and gender

| Gender | Age (years) | Cost of NNFB ^a |
|--------|-------------|---------------------------|
| Female | 50-74 | \$134.69 |
| | 75+ | \$131.21 |
| Male | 50-74 | \$168.55 |
| | 75+ | \$153.63 |

^a values based on a reference family of four, with the cost of NNFB increasing by 15 per cent, 10 per cent, and 5 per cent if living in a one-, two-, or three-member household, respectively

(f) citrus fruits, (g) other fruits, (h) potatoes, (i) other vegetables, (j) fats and oils, and (k) sugar and other sweets. According to previously published methods, the NNFB was deemed acceptable for use in Nova Scotia (Atlantic Health Promotion Research Centre, Family Resource Centres/Projects, & Nova Scotia Nutrition Council, 2004; Williams et al., 2006). Trained food costers went to 42 randomly selected grocery stores across the province to collect prices of the 66 items in the basket, using standardized methods (Lawn, 1998; Ontario Ministry of Health, Public Health Branch, 1998). These stores were stratified to ensure representation of smaller and larger stores in both rural and urban areas across the nine different district health authorities in Nova Scotia. NNFB procedures require food costers to record the lowest price of specific-sized packaging of the various food items. Food costing occurred in October 2004 and June 2005; average values were used to minimize seasonal effects on food prices. Average monthly costs of a nutritious diet for seniors in Nova Scotia, using the standardized weighting accompanying the NNFB (Lawn, 1998), are presented in Table 1.

Development of Senior Household Compositions

To assess whether the cost of an NNFB diet was affordable for seniors living in Nova Scotia who were dependent on public pension programs, four senior household scenarios were created, permitting comparison of basic living expenses, including food, to July 2005 incomes from CPP and OAS. The following household compositions were developed for this study:

1. a married 80-year-old male and a 78-year-old female in urban Nova Scotia, both receiving OAS basic pension and GIS
2. a single 77-year-old male in rural Nova Scotia, receiving OAS basic pension and GIS
3. a couple (male 70-year-old and female 65-year-old) in rural Nova Scotia, both receiving OAS basic pension and GIS, the male having contributed to the CPP and

Table 2: Summary of the Canada Pension Plan (CPP) and the Old Age Security (OAS) program (Social Development Canada, 2005)

| Public Pension | Maximum Monthly Amounts ^a | Monthly Amounts Multiplied to Yearly Amounts | Annual Income Level Cut-off ^b | Deductions ^c |
|---|--------------------------------------|--|--|--|
| CPP | | | | |
| Retirement (at age 65) | \$828.75 | \$9,945.00 | N/A | Federal Tax—15 per cent; Nova Scotia Tax—8.79 per cent |
| Survivor | (65+) \$497.25 | \$5,967.00 | N/A | Federal Tax—15 per cent; Nova Scotia Tax—8.79 per cent |
| OAS Basic Pension | \$476.97 | \$5,723.64 | N/A | Federal Tax—15 per cent; Nova Scotia Tax—8.79 per cent |
| OAS Guaranteed Income Supplement | | | | |
| Single | \$566.87 | \$6,802.44 | \$13,608.00 | Non-taxable |
| Spouse/Common-law partner of a non-pensioner | \$566.87 | \$6,802.44 | \$32,976.00 | Non-taxable |
| Spouse/Common-law partner of a pensioner | \$369.24 | \$4,430.88 | \$17,760.00 | Non-taxable |
| Spouse/Common-law partner of an allowance recipient | \$369.24 | \$4,430.88 | \$25,392.00 | Non-taxable |
| OAS Allowance | | | | |
| Regular | \$846.21 | \$10,154.52 | \$25,392.00 | Non-taxable |
| Survivor | \$934.24 | \$11,210.88 | \$18,624.00 | Non-taxable |

^a As of July 2005, CPP was indexed annually and OAS is indexed quarterly, based on changes in the cost of living as measured by the Consumer Price Index (HRC, 2001b).

^b If senior's (household) income is above the cut-off, he/she is not eligible for GIS or Allowance benefits. The OAS basic pension and GIS are not considered in the calculation of annual income.

^c The CPP and OAS basic pension are taxable at both federal and provincial levels. Lowest tax brackets are assumed to provide the tax rates listed (Federal Tax Bracket—\$0–35,595; Provincial Tax Bracket—\$0–29,590) (KPMG Canada, 2006).

receiving the maximum monthly CPP rate (assumes he began collecting CPP at age 65 years)

- a widowed 85-year-old female in urban Nova Scotia, receiving the OAS basic pension and her deceased husband's CPP

Although the fourth of these households qualifies for GIS, the scenario involving her assumes that she has no GIS because, every year, nearly 100,000 seniors do not receive their GIS cheque due to failure to renew their applications through the income tax system (NACA, 2005). Elderly women are most likely to neglect to subscribe to GIS (NACA, 2005).

Monthly Household Income

Over the past half century Canada has put in place two federal pension programs to ensure Canadian seniors are not living in straitened circumstances: the Canada Pension Plan (CPP) and the Old Age Security Program (OAS). Nearly all Canadians between the ages of 18 and 70 years who are employed contribute to the CPP and are entitled to a retirement pension once they reach 60 years of age (Human Resources and Skills Development Canada, 2005a; HDRC, 2001a, 2001b, 2002). Only those who contribute are eligible to receive this pension.

The OAS program offers three different types of benefits and does not require the receiver to have contributed to the program. There is the OAS basic pension, available to all seniors, as well as two targeted supplements for low-income pensioners, the Guaranteed Income Supplement (GIS) and the Allowance. The OAS basic pension is taxable at both the federal and provincial levels; thus higher-income pensioners pay part or all of this benefit back through the income tax system (Human Resources and Skills Development Canada, 2005b; HDRC, 2001b). To be eligible for the GIS, seniors must be receiving an OAS basic pension and meet certain income requirements. The monthly amount a senior can receive depends on her/his marital status and income. The Allowance is a benefit available to 60- to 64-year-old spouses or common-law partners of GIS recipients (Human Resources and Skills Development Canada, 2004a, 2004b). The benefit is also available to widowed 60- to 64-year-old survivors of GIS pensioners. The amount available is income-tested and the benefit stops being paid when the annual income of the recipient surpasses a set amount or when the recipient becomes eligible for an OAS pension at age 65 years (HDRC, 2001b; Social Development Canada, 2005). Table 2 provides information on the different benefits offered

within the CPP and OAS programs used to estimate entitlements.

The goods and services tax (GST) credit is also a small source of income for some seniors. The GST credit is a federal credit available to low- and middle-income individuals. The amount is based on household composition, number of children under 19 years of age, and net income of the adults in the household (Canada Revenue Agency, 2005). Canada Revenue Agency's online calculator was used to estimate entitlements (Canada Revenue Agency, 2005). Income from the GST credit presented in the scenarios is based on the quarterly estimate divided by 3 to provide a monthly credit amount.

Monthly Household Expenses

Table 3 provides a brief explanation of the sources of estimates for shelter, utilities, telephone, transportation, clothing/footwear, and Pharmacare. In prior affordability assessments, the first five expenses, plus food, have been established as basic necessities for a typical household (Atlantic Health Promotion Research Centre et al., 2004; Hatfield, 2002; Vozoris et al., 2002; Williams et al., 2006). In Table 3, reference is made to the Market Basket Measure (MBM); the MBM was developed by the then Human Resources Development Canada (HRDC), now Human Resources and Social Development Canada, in 2000, to estimate the cost of a specific basket of goods and services just adequate to allow a minimum standard of living for a reference family of four (Hatfield, 2002). The five expenditure categories used in the MBM calculations are food, clothing and footwear, shelter, transportation, and other goods and services. Statistics Canada, on HRDC's behalf, collected data on the cost of goods and services in the basket for the specified reference family of four in order to calculate thresholds for 19 specific communities and 29 community sizes in the 10 provinces. The Low Income Measure—equivalence scale can then be applied to MBM data to estimate the cost of a basket of goods for families of other sizes and compositions (Hatfield, 2002). The equivalence scale assigns factors to each family member: 1.0 for the oldest member, 0.4 for the second oldest and any children older than 16 years, and 0.3 for children under 16 years. The reference family has a measure of 2.0; a senior couple would have a measure of 1.4 and require 70 per cent of the MBM expense estimate for the reference family. A single senior would require 50 per cent of the MBM expense estimate for the reference family. Reported MBM data were collected in 2000; therefore, transportation and clothing/footwear expense figures were adjusted using the Consumer Price Index (CPI)

to estimate 2005 dollar figures (Statistics Canada, 2006).

MBM estimates for shelter were not used for this current research as they appeared too conservative and unrealistic in their figures for housing costs in Nova Scotia (Canada Mortgage and Housing Corporation, 2005; Government of Nova Scotia, 2003). To estimate an average rent for apartments available in Nova Scotia, Canada Mortgage and Housing Corporation's Rental Market Survey data were used. The Rental Market Survey does not distinguish between rents that are inclusive of utilities and those that are not, whereas the MBM assumes heat, water, and electricity are included. To strike a compromise between the two shelter estimates, it was decided that utility costs would not be added as a separate household expense. Subsidized housing was not examined in these affordability scenarios, as only 4 per cent of seniors in Nova Scotia live in non-profit seniors apartments (Nova Scotia Seniors' Secretariat, 2005a). Also, rent in subsidized housing is based on income, so an average rent estimate would be difficult to generate and might not reflect typical rent (Department of Community Services, 2005).

Results

Table 4 shows the food-costing data, in the context of available income and basic expenses, for each of the four household scenarios, to determine whether adequate financial resources are available through CPP and/or OAS to purchase a basic nutritious diet.

1. *Married Couple, 80 and 76 Years Old*
Both members receive the full OAS basic pension, which is taxable, and the full non-taxable GIS benefit for pensioners. These pensions, plus the household GST benefit, provide them with CAN\$1,503.31 each month. They live in a single bedroom apartment in urban Nova Scotia and use public transportation. Non-food basic expenses cost \$931.33 and the NNFB costs \$313.32, leaving this household with \$258.65 remaining at the end of the month for all other expenses.
2. *Single Male, 77 Years Old*
This man qualifies for the full OAS basic pension and the GIS benefit for single individuals. In theory, the OAS basic pension provides \$5,723.64 per year, but because of federal and provincial taxes, a single senior in Nova Scotia only takes home \$4,361.99 annually. Among OAS, GIS, and GST, this man takes home \$949.29 each month. Assuming he lives in a single bedroom apartment in rural Nova Scotia and therefore requires a personal vehicle, and before even factoring in the cost of the NNFB, the single male is left with a mere \$1.14 for food. If he were to buy an adequate nutritious diet he would be facing a deficit of \$192.69 each month.
3. *Senior Couple, 70 and 65 Years Old*
This scenario assumes the male contributed to the CPP

Table 3: Estimation of monthly basic household expenses for Nova Scotia seniors

| Expense Category | Estimate of Monthly Expense | Source | Explanation |
|--|-----------------------------|--|---|
| Shelter and Utilities | \$608/month | Canada Mortgage and Housing Corporation, 2005 | Expense estimate is the average cost of a one-bedroom apartment in Nova Scotia according to Canada Mortgage and Housing Corporation's (CMHC) annual Rental Market Survey 2005 findings. CMHC surveyed all urban areas in the province with populations greater than 10,000. In this survey, some rents used in calculating averages are inclusive of utilities (water, heat, and electricity), while some are not. CMHC does not distinguish between the two. |
| Telephone | \$28.75/month | Aliant, 2006 | Aliant, one of two Atlantic communications providers in the province but the only provider available all throughout Nova Scotia, offers a basic telephone service for \$25.00/month (plus tax), not including installation. This service does not include long distance charges or other phone options. |
| Transportation | | Market Basket Measure (MBM): | The transportation component of the MBM is based on the cost of two monthly adult public-transit passes plus one round-trip taxi ride for urban centres. In areas not serviced by public transit, the amount is based on the cost of owning and operating a 1995 Chevy Cavalier. This includes 20 per cent of cost and annual interest on a 36-month loan, and 1,500 litres of regular gasoline, insurance and license fees, a tune up, and two oil changes. |
| Single member households | | Hatfield, 2002; | |
| Urban centres | \$75.36 | HDRC, 2003 | |
| Rural areas | \$188.84 | Consumer Price Index (CPI): | |
| Dual member households: | | Statistics Canada, 2006 | |
| Urban centres | \$105.51 | | Costs of the MBM were established based on a four-person family (2 adults and 2 children). Equivalence scales are used to estimate the cost for other household compositions. Because MBM data were collected in 2000, transportation amounts were adjusted using the CPI to reflect 2005 costs. Private transportation and public transportation components of the CPI were used respectively to index MBM figures. |
| Rural areas | \$264.38 | | |
| Clothing/Footwear | | HDRC, 2003 | The clothing and footwear component of the MBM is based on the Acceptable Levels of Living (ALL) basket developed by Winnipeg Harvest and the Winnipeg Social Planning Council with relative spatial indices applied to these costs to generate equivalent costs for other urban centres. The estimates were based on urban centres only and were assumed to be consistent with other community sizes. The ALL Report assumes purchases of all new clothing. Costs of the MBM were established based on a four-person family (2 adults and 2 children). Equivalence scales are used to estimate the cost for other household compositions. Because MBM data were collected in 2000, clothing and footwear amounts were adjusted using the CPI to reflect 2005 costs. The clothing and footwear component of the CPI was used to index MBM figures. |
| Single member households | \$93.39 | | |
| Dual member households | \$130.74 | | |
| Pharmacare | | Nova Scotia Department of Health, 2006; Nova Scotia Seniors' Secretariat, 2005a; | The Nova Scotia Seniors' Pharmacare Program is the provincial drug insurance plan. It is available (and compulsory) to any resident of Nova Scotia who is 65 years and older with a valid Nova Scotia Health Card and no drug coverage through any other plan. Seniors receiving GIS do not pay the premium (\$390/year) to be covered by the plan. Other low-income seniors may be eligible for a reduced premium if they are single and have an annual income of less than \$24,000 a year or if they are married and have a combined income of less than \$28,000 a year. The co-payment is 33 per cent of the total prescription cost, to a maximum of \$30 for each prescription, with an annual maximum of \$350—minimum co-payment of \$3.00 per prescription. Once a senior has paid \$350.00 in co-payments, Pharmacare covers 100 per cent of prescription costs. |
| Premium | | Nova Scotia Seniors' Secretariat, 2005b | |
| GIS recipients and low income households | No charge | | |
| Non-GIS recipients | Up to \$32.50 | | |
| Co-payments | | | The average senior had 32 prescriptions filled in 2003–2004, costing the Pharmacare program \$1,456 per senior. Breaking this variable down by age and gender men 65–74 years, 75–84, and 85+ had on average of 27, 33, and 38, prescriptions filled annually, costing \$1,425, \$1,656, and \$1,530, respectively. Women of the same age groups had 29, 38, and 43 filled, costing \$1,334, \$1,579, and \$1,429, respectively. Monthly estimates were derived by taking 33 per cent of these by age and gender average co-payment costs, divided by 12 months. Because this percentage came to more than \$350/year, the monthly estimates were reduced to \$350 divided by 12 months. |
| Male 80 years and female 78 years | \$58.33 | | |
| Male 77 years | \$29.17 | | |
| Male 70 years and Female 65 years | \$58.33 | | |
| Female 85 years | \$29.17 | | |

Table 4: Assessing the adequacy of Canada's public pensions to afford a nutritious diet: Comparing potential monthly net incomes with expenses for senior households living in Nova Scotia

| Household Composition | Male 80 Years and Female 78 Years | Single Male 77 Years | Male 70 Years and Female 65 Years | Widowed Female 85 Years |
|--|-----------------------------------|----------------------|-----------------------------------|-------------------------|
| Location | Urban Nova Scotia | Rural Nova Scotia | Rural Nova Scotia | Urban Nova Scotia |
| Monthly Net Income | | | | |
| Old Age Security (taxable) | \$727.00 | \$363.50 | \$727.00 | \$363.50 |
| Guaranteed Income Supplement Allowance | \$738.48 | \$566.87 | \$324.48 | \$0.00 |
| Canada Pension Plan (taxable) | n/a | n/a | n/a | n/a |
| GST benefit | \$0.00 | \$0.00 | \$631.59 | \$378.95 |
| Total | \$37.83 | \$18.92 | \$37.83 | \$18.92 |
| Total | \$1,503.31 | \$949.29 | \$1,720.90 | \$761.37 |
| Monthly Basic Expenses | | | | |
| Shelter/Rent | \$608.00 | \$608.00 | \$608.00 | \$608.00 |
| Telephone | \$28.75 | \$28.75 | \$28.75 | \$28.75 |
| Transportation | \$105.51 | \$188.84 | \$264.38 | \$75.36 |
| Clothing, footwear, etc. | \$130.74 | \$93.39 | \$130.74 | \$93.39 |
| Pharmacare | \$58.33 | \$29.17 | \$58.33 | \$29.17 |
| Total | \$931.33 | \$948.15 | \$1,090.20 | \$834.67 |
| Funds remaining for food | \$571.97 | \$1.14 | \$630.69 | (\$73.29) |
| Cost of the NNFB | \$313.32 | \$193.83 | \$316.71 | \$150.89 |
| Funds Remaining for Other Expenses | \$258.65 | (\$192.69) | \$313.98 | (\$224.18) |

through previous employment and therefore receives the maximum monthly CPP rate supposing he began collecting at age 65 years. CPP is taxable at both federal and provincial levels. Both members of this couple receive the full OAS basic pension and a partial GIS benefit. This partial supplement is based on the combined yearly income of the couple, excluding income from OAS benefits. Because the male's CPP brings in a gross annual income of \$9,945.00, each member of the couple is entitled to \$162.24 per month for GIS, plus a full OAS basic pension of \$476.97 per month. They live in rural Nova Scotia, where public transportation is not available, so they own a car and they rent a one bedroom dwelling. Their non-food basic expenses total \$1,090.20; food expenses are \$316.71, leaving them \$313.98 of disposable income at the end of the month.

4. *Widowed 85-Year-Old Female*

This widow is collecting her deceased husband's CPP; thus she receives \$497.25 per month. This amount is taxable. She also receives the full OAS basic pension, also taxable. Unfortunately, she neglected to apply for her GIS benefit, which must be renewed annually through the income tax system, a relatively common scenario for elderly female seniors. CPP, OAS, and GST provide a monthly income of \$761.37. Despite having access to public transit, which significantly decreases transportation costs, her non-food basic monthly expenses are almost 10 per cent higher than her monthly income. If she were to purchase a nutritious food basket, she would be in debt \$224.18 each month.

These results clearly show that both single-member households relying on public pensions lack the

necessary funds for an adequate nutritious diet and, therefore, may compromise their food intake in order to afford other essential expenses. Results also show there is no disposable income for other routine costs, such as personal hygiene products, household and laundry cleaners, health care related costs beyond those covered by Nova Scotia's compulsory Pharmacare program, any recreational activities, or savings for unexpected expenses or emergencies.

Discussion

This study examined the adequacy of the two public pension programs in Canada (CPP and OAS) to ensure that seniors have the ability to afford a nutritious diet in light of provincial food costing conducted in Nova Scotia. This is the first published study using food-costing data to investigate the sufficiency of federal financial programs targeted at seniors, as well as the first time that the impact of the cost of health care and medications have been incorporated into affordability scenarios.

Examining the Expenses

These data show that seniors living alone who rely solely on public pensions are more likely to have inadequate funds at the end of the month; this puts them at greater risk for food insecurity than senior couples. Living with a partner in one's senior years clearly has a protective effect on the ability to meet

basic needs, including a nutritious diet. This is consistent with other food-costing studies and is likely due to the fact that shelter is the largest expense (Atlantic Health Promotion Research Centre et al., 2004; Vozoris et al., 2002; Williams et al., 2006)—a dual income better supports rent for a one bedroom apartment than does a single income. However, in Nova Scotia, nearly 30 per cent of seniors live alone and depend on a single income to pay for all of their basic needs (Nova Scotia Seniors' Secretariat, 2005a), putting a significant proportion of the senior population at risk for food insecurity. It is highly plausible that shelter costs in rural areas should be lower than in urban areas; nonetheless, the single male living in rural Nova Scotia would need to have rent at least \$200 cheaper than the provincial average in order to be able to afford the nutritious food basket. Having access to subsidized housing would benefit low-income seniors; however, only 4 per cent of seniors in Nova Scotia access the Seniors Rental Housing program, which provides subsidized housing to seniors in need (Nova Scotia Seniors' Secretariat, 2005a). This program assigns rent on an individual basis, based on a senior's total income.

Living in urban areas serviced by public transportation can reduce transportation costs significantly. Accessibility may be limited for many Nova Scotian seniors, as only two municipalities in the province offer this public service. Additionally, it is in Nova Scotia's towns and rural areas, where there is no public transit, that the senior population is more concentrated. Almost 20 per cent of the population in Nova Scotia's 31 towns, as well as 14.5 per cent in the rural areas, are seniors. For urban-dwelling seniors with mobility issues, the infeasibility of public transportation may make the estimates for transportation unrealistically low, as these seniors may be more dependent on cabs or may own their own vehicle. In 2003, transportation was the second most significant expense after shelter, with seniors devoting 17.5 per cent of all expenditures to transportation (Nova Scotia Seniors' Secretariat, 2005a), further suggesting that the transportation estimate may be low.

It may be unlikely that two-member and single-member households need to spend \$130.74 and \$93.30 respectively on clothing and footwear; however, even after these expenses have been completely removed, neither single household has enough money for food.

Health and drug plans have never been analysed in previous food-costing affordability studies. Nova Scotia has a compulsory health and drug program, so any senior not covered by a private or Veterans plan must subscribe to the provincial Pharmacare program. Over 92,000 seniors are enrolled in Nova

Scotia Senior's Pharmacare program, and only half of the participants pay the full premium (Nova Scotia Seniors' Secretariat, 2005a, 2005b). This implies that many of these seniors receive GIS or have annual incomes under \$24,000 and \$28,000 for single- and dual-member households, respectively. The average Nova Scotian senior had 32 prescriptions filled in 2003–2004, with an average cost to the Pharmacare program of \$1,456 per senior (Nova Scotia Seniors' Secretariat, 2005a); thus, we assumed that seniors in our scenarios paid the annual maximum co-payment amount of \$350. At only \$29.17 per month, this payment would equal almost one week's worth of groceries for the widowed female. Pharmacare costs in our scenarios do not include the costs of other items typically purchased at drug stores, such as hygiene products, over the counter drugs, vitamin and mineral supplements, and other health care accessories.

Examining Income

To be categorized as living in poverty (i.e., below the LICO), a single person in rural Nova Scotia (communities under 15,000 people) would have an annual income below \$14,000 *before tax* (Canadian Council on Social Development, 2005). A couple living in rural Nova Scotia would have an annual income below \$17,429 *before tax* (Canadian Council on Social Development, 2005). Low Income Cut Offs for one- and two-member households living in urban Nova Scotia (cities with populations between 100,000–499,999) would have annual *before-tax* incomes of \$17,515 and \$21,804, respectively (Canadian Council on Social Development, 2005). In the first household scenario, the senior couple living in urban Nova Scotia is living below the LICO. They both receive a full OAS basic pension as well as the GIS and together bring in \$20,309.04 *before tax* annually. This amount is \$1,495 below the LICO. The single male residing in rural Nova Scotia is also living below the LICO by \$1,474. The widowed female is \$5,824.36 below the LICO; however, if she were to apply for GIS she would rise out of poverty by a mere \$1,000 a year; it must be noted that not all widows have access to CPP monies.

Five per cent of Nova Scotian seniors are still involved in paid employment after age 65 (Nova Scotia Seniors' Secretariat, 2005a). Such additional income would help raise individuals out of poverty, but paid employment cannot be expected to be a solution for all senior households. Although some seniors have access to accumulated assets, the impact of this on the affordability of a nutritious diet was not considered for the purpose of this study. GIS is an income-tested benefit, and therefore, to qualify, the applicant cannot have an annual income that exceeds certain limits.

Seniors can apply for the GIS via their annual income tax returns, and thus most accumulated assets would be recognized.

The scenario with the widowed female is highly plausible: two thirds of seniors in Nova Scotia living below the LICO are women living by themselves (Nova Scotia Seniors' Secretariat, 2005a) and women are more likely than men to neglect to subscribe to GIS when eligible (NACA, 2005). Not applying for the GIS benefit results in a potential loss of up to \$566.87 per month. This amount is almost equivalent to the shelter expense and could be critical in helping senior women afford a basic nutritious diet.

The GIS was originally put in place to ensure low- and moderately low-income seniors could meet their basic needs and maintain a reasonable standard of living (Human Resources and Skills Development Canada, 2004c; HDRC, 2001a, 2001b, 2002). The public pensions system was not intended to support fully all of Canadian seniors' financial needs; yet more than 25 per cent of Canadian seniors have no personal pension (HDRC, 2002). Ninety-five per cent of Canadian seniors receive the full basic OAS pension (HDRC, 2001a), and over 35 per cent of seniors receive the GIS, with female seniors representing almost two out of three GIS recipients (NACA, 2003; NACA, 2005). These federal programs undoubtedly provide much-needed financial assistance for many Canadian seniors, albeit the proportion of seniors living under the LICO (15% of Nova Scotian seniors) strongly suggests that these supports are not fully adequate.

Literature from the United States suggests that seniors use various coping strategies to deal with having inadequate funds for food. Relying on food banks, family, neighbours, and religious institutions are common strategies, as are buying on credit and compromising the quantity and quality of their meals (Quandt & Rao, 1999; Quandt, Arcury, McDonald, Bell, & Vitolins, 2001; Wolfe et al., 1998). Exploring strategies used by Canadian seniors could help strengthen existing food- and income-related policies and programs targeted at this population, as well as assist in the creation of new ones to increase access to nutritious food. This is currently the focus of one of the researchers' (RG) Master's research work.

Health Implications of Food Insecurity

Not having the financial resources to purchase nutritious foods constitutes food insecurity. Canadians who are classified as food insecure are more likely to report their health as fair or poor and are more likely to have multiple chronic diseases (McIntyre & Tarasuk, 2002). Poor nutrition is a major contributor

to the two most prevalent chronic diseases in Nova Scotia: cardiovascular disease (which includes heart disease, stroke and atherosclerosis), and cancer (GPI Atlantic, 2002). Seniors are more likely to suffer from chronic diseases than are the rest of the Nova Scotian population and account for five times the health care dollars spent by the province each year (Nova Scotia Seniors' Secretariat, 2005b). Seniors accounted for 40 per cent of hospitalizations in the province in 2003–2004 (for persons 15 years and older) and the leading cause for hospitalizations for seniors was circulatory disease (Nova Scotia Seniors' Secretariat, 2005a).

Wolfe et al. (1996) found food insecurity and health to have a cyclical relationship, in that poor health in seniors contributed to food insecurity through high medical bills and medicine costs, restricted mobility, and created a need for therapeutic diets. Previous food costing in Nova Scotia found that the cost of implementing heart-healthy nutrition recommendations was 12 per cent to 18 per cent higher than the cost of a basic adequate diet (Travers et al., 1997). Heart-healthy nutrition options involved substituting lower-fat, higher-fibre items for comparable food basket items. Using the conservative estimate of a 12 per cent increase, the four households in Table 4 would spend \$350.92, \$217.09, \$354.72, and \$169.00 each month on nutritious foods. This augmented expense would then leave the single male and widowed female \$215.95 and \$242.29 in debt, respectively. Unfortunately pharmaceuticals, at almost \$30 per month, are more affordable than food for seniors in Nova Scotia.

The NACA, an arm's length body created to assist and advise the Minister of Health on issues related to the quality of life and health of seniors, has made recent recommendations specific to the CPP and OAS programs as approaches to alleviating poverty amongst seniors (NACA, 2005). Recommendations focused on benefit amounts, application procedures, and retroactive benefits. Food-costing results in Nova Scotia further support the need to improve Canada's public retirement systems to ensure all seniors can attain a decent quality of life. As shown in our scenarios, an automatic renewal program for the GIS could be a first step towards ensuring seniors in financial need are actually guaranteed their Guaranteed Income Supplement. Eliminating poverty directly addresses one of the main causes of hunger and food insecurity and has the potential to decrease the prevalence of chronic diseases, improve chronic disease management (GPI Atlantic, 2002), and ultimately improve morbidity and mortality rates (Public Health Agency of Canada, 2004).

These results clearly show that Canada's public pension system does not ensure food security for all Canadian seniors. In a country as affluent as Canada, food insecurity is an issue not of the unavailability of food but of the unequal distribution of wealth (Tarasuk, 2001). This article calls for further examination of Canada's public pension system. Policies and services that fail to make nutrition and health accessible for seniors undermine Canada's future quality of life.

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