

Food bank users: sociodemographic and nutritional characteristics



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Abstract

Background: The continued expansion of food assistance programs makes it important to examine the sociodemographic characteristics and nutritional profiles of people relying on this service. The authors undertook such a study in a large urban centre.

Methods: A total of 490 food bank users were randomly selected from a stratified random sample of 57 urban food banks in Montreal. A questionnaire and a dietary recall interview were given by a dietitian-interviewer to determine socio-economic, demographic and cultural characteristics and macronutrient intake. These data were compared with national and provincial data.

Results: The mean age of the participants (256 men and 234 women) was 41 years; 204 (41.6%) were living alone and most (409 [83.5%]) were receiving social assistance benefits. These food bank users were well educated (190 [38.8%] had completed technical school or had a college or university education), and the sample included few elderly or disabled people. The median body mass index was greater than 24, which indicated that energy intake, although below recommended levels, was not a chronic problem. The people using the food banks had a monthly shortfall in their food budget of between \$43 and \$46.

Interpretation: Food banks are used regularly, primarily by young healthy adults. They are thought of as a necessary community resource.

Résumé

Contexte : À cause de l'expansion continue des programmes d'aide alimentaire, il importe d'examiner les caractéristiques sociodémographiques et les profils nutritionnels des personnes qui comptent sur ces services. Les auteurs ont réalisé une telle étude dans une grande agglomération urbaine.

Méthodes : Au total, 490 utilisateurs de banques d'aliments ont été choisis au hasard dans un échantillon aléatoire stratifié de 57 banques d'aliments urbaines à Montréal. Une diététiste a administré un questionnaire et l'entrevue de rappel sur l'alimentation afin de déterminer les caractéristiques socio-économiques, démographiques et culturelles et l'apport de macronutriments. On a comparé ces données à des données nationales et provinciales.

Résultats : Les participants (256 hommes et 234 femmes) avaient en moyenne 41 ans; 204 (41,6 %) vivaient seuls et la plupart (409 [83,5 %]) touchaient des prestations d'aide sociale. Ces clients des banques d'aliments étaient bien instruits (190 [38,8 %] avaient terminé des études techniques ou avaient fait des études collégiales ou universitaires) et l'échantillon comprenait quelques personnes âgées ou handicapées. L'indice de masse corporelle médian dépassait 24, ce qui indiquait que l'apport d'énergie, malgré inférieur aux niveaux recommandés, n'était pas un problème chronique. Il manquait de 43 à 46 \$ par mois au budget d'alimentation des personnes qui utilisaient les banques d'aliments.

Interprétation : Les banques d'aliments sont utilisées régulièrement, principalement par de jeunes adultes en bonne santé. On les considère comme une ressource communautaire nécessaire.

Evidence

Études

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The overall health of a population is better when the gap between rich and poor is narrow.¹ Unfortunately, recent Canadian data show that the mean income of men in the highest-earning quintile rose by 9%, whereas that of men in the lowest-earning quintile declined by 4% over a 7-year period (1981 to 1988).² Rates of illness are higher among lower-income Canadians, they have fewer disability-free years, and they are more likely to have behaviour-related risk factors for disease.³⁻⁷ Rates of cancer and cardiovascular disease are higher in low socioeconomic groups,⁸ and survival after infection with HIV is shorter.⁹ Self-reported health status is also lower among the poor.¹⁰⁻¹⁷ One community resource that has been developed to address the income gap is food banks.

The term "food bank" is used collectively to include food depots, food pantries and other community-based food distribution sites. In Canada, food banks are non-profit organizations that collect food that would otherwise be discarded and transfer it to charitable food programs,¹⁸ collect food from the public for redistribution or use monetary donations to purchase food so as to give their users a more nutritious diet.¹⁹⁻²¹ Most of the food distributed is in the form of groceries, and bags of food usually contain enough staples and perishables to last 1 to 3 days.¹⁸ A Toronto study of people receiving food assistance showed that 23% of those surveyed ran out of food each month, even though they were using food banks.¹⁸ Recent data from Montreal showed that the recommendations of "Canada's Food Guide to Healthy Eating" could not be met if food banks were the sole food source.¹⁹

Food banks were established to respond to emergency food needs but have become a long-term food source for many families.²⁰⁻²² Emmons²³ observed that the number of emergency food sources used increased as the month progressed. Information about people who require emergency food assistance is incomplete, because no large-scale, systematic sample of this population has been studied.

The goal of this study was to describe the socioeconomic, demographic and cultural characteristics of food bank users from a random sample of urban food banks in the Montreal area, and to assess the macronutrient intake of these people the day before they sought assistance.

Methods

Study population and sampling

On the island of Montreal one central food collection and distribution centre provides emergency food to 167 community agencies. By screening all agency registration forms we determined that 57 agencies had as their primary purpose the provision of food bags directly to

clients; other agencies served meals or distributed food only as part of other programs. These 57 food banks were classified according to number of clients served: small sites served fewer than 100 people per month ($n = 21$), medium-sized sites between 100 and 499 per month ($n = 20$) and large sites more than 499 per month ($n = 16$). A stratified random sample of 20 food banks was selected to reflect the proportion of small, medium and large sites among these 57 agencies. When 3 of the 20 sites originally chosen refused to participate, 3 more were chosen randomly to replace them.

From clients at the 20 food banks, 490 people were randomly selected for our survey. The number of people sampled from small, medium and large sites was based on the proportion of total food bank clients served at different sizes of sites (of all clients using the 57 food banks, 4.6% were served at small sites, 20.6% at medium-sized sites and 74.8% at large sites). Thus, 27 people were selected from small sites, 96 from medium-sized sites and 367 from large sites. The survey was conducted in winter, when the cost of living is highest: heat and warm clothing add to survival costs, and fresh produce is more expensive than at other times of the year.

Enrolment of participants

People 18 years of age or older who had a known address and lived within 2 bus transfers of the food bank were eligible to participate. Interviews were conducted in English or French, or in another language if an interpreter was available.

People were given a number when they entered the food bank or made an appointment, and numbers were randomly chosen to select study participants. The number of people who refused to participate was recorded. Signed consent was obtained from the participants, and ethical approval was given by the Ethics Committee at McGill University and, where required, by the boards of the participating agencies.

Questionnaire

A dietitian administered the food security* questionnaire orally so that the reading level of the participants would not affect the survey results. Five previously validated questions concerning country of origin, years in Canada, status as a refugee or landed immigrant, marital status and education level were adopted from a survey by Mailhot and colleagues.²⁵ Other questions were devised to

*Food security is a condition in which all people at all times have access to safe, nutritionally adequate and personally acceptable foods in a manner that maintains human dignity.²⁴



determine the characteristics of the household (number of people usually fed, age and sex of household members), sources of food and food shopping practices, beliefs about food availability, feelings about seeking food aid or receiving food gifts, and coping strategies related to food. Questions were also formulated about health status and household income and expenses.

The language level and content of the questions were reviewed by an epidemiology research assistant, 2 community-based dietitians, 2 food depot directors, 2 food depot volunteers and a food bank communications coordinator. The English questionnaire was translated into French and back-translated into English to ensure that the versions were comparable.

The questionnaire was pretested with 141 food bank clients, revised and re-reviewed. To check the validity of self-reported data, clients involved in the pretesting phase were occasionally asked to supply proof of income (source and amount) and expenses by providing cheque stubs and household receipts. Twelve additional food bank users tested the revised questionnaire for language complexity and suitability of words (e.g., social assistance v. welfare). Their reaction to the content of the questionnaire was also considered. The final questionnaire consisted of 27 questions and 10 sub-questions.

Dietary assessment

A dietary recall interview was conducted, during which the dietitian-interviewer used 3-dimensional food portion models to determine what food each survey participant had consumed in the previous 24 hours. Information on the number of cigarettes smoked within that period, the intake of nutrient supplements and the use of other food assistance programs (e.g., soup kitchens) was also obtained. Detailed dietary analyses will be reported elsewhere.

Data analysis

Reported food intake was coded for nutrient analysis by the dietitian-interviewers, who used data from the Canadian Nutrient File (Food Processor version 5.03, ESHA Research, Salem, Ore.). Descriptive statistics were generated with SAS version 6.04 software (SAS Institute Inc., Cary, NC). General linear models procedures combined with Tukey's HSD (honestly significant difference) test as well as χ^2 tests were used to test associations between nutrient intake and each variable on the questionnaire.

Results

Sixty percent of all clients approached (490/816) agreed to participate in the study (62.9% of the men and

57.2% of the women). Participation was highest at medium-sized food banks, where 66.7% of those approached agreed to participate; at large food banks 59.9% agreed and at small food banks 45.8% agreed. Most interviews were conducted during the week because many food banks were not open on weekends.

The number of men and women was about equal (256 and 234 respectively). The mean age was 41 years for both men (SD 12.3) and women (SD 13.0); the overall range was 18 to 85. In total, 210 participants (42.8%) had been born in Canada. When we compared data from our sample with Quebec census data,²⁶⁻²⁸ we found that fewer food bank clients were married or living with a partner and more had been born outside Canada (Table 1). Almost half of the men who participated had completed technical school or had a college or university education (Table 1). There was no association between food bank size and age, sex, refugee status, marital status or education level of the users.

Most clients (371 [75.7%]) reported being in good health. However, the mean body mass index (BMI), calculated from self-reported height and weight, was 27 (SD 11; for men 26 [SD 9], for women 28 [SD 13]), which exceeds the upper limit of the recommended healthy range.²⁹ The median BMI for participants between 18 and 49 years of age was 24, whereas clients 50 years of age or older were heavier; in that age group the median BMI was 26 for men and 27 for women. For all ages, 61 (23.8%) of the men and 73 (31.2%) of the women had a BMI greater than 27, whereas 6 (2.3%) of the men and 22 (9.4%) of women had a BMI of less than 20. Of the 126 people who reported health problems or conditions of some type, 52 (41.3%) reported physical problems such as backache, headache, and eye or ear problems, 44 (34.9%) reported medical conditions such as high blood pressure, diabetes mellitus, tuberculosis or cancer, 19 (15.1%) reported psychological problems, 9 (7.1%) reported concerns about their diet and 2 (1.6%) reported other problems.

The study participants represented 490 households in which a total of 1170 people were fed on a regular basis. Of these 1170 people, 356 (30.4%) were younger than 18 years of age, and about one-third of these children lived in single-parent households. Single-parent households with children under 18 accounted for 12.6% of the 490 households represented in our sample; half of these (6.5% of the total) had 1 child, a quarter (3.1%) had 2 children, and another quarter (3.0%) had more than 2 children. Of the 490 participants 204 (41.6%) were usually responsible for feeding only themselves and thus were assumed to live alone.

The mean number of people fed in each household every day was 2.4 (SD 1.5), which is similar to national data²⁶ and to results from a recent survey of francophones

in Montreal.²⁷ Eighty-eight (18.0%) of the respondents said that they fed more people on weekends.

The principal source of income was social assistance benefits (Table 1). Very few participants (13 [2.6%]) were employed, and those that were had low incomes. The mean monthly household income of less than \$900 (Table 2) was well below the low-income cutoff for family

units of similar size (\$1816 for 2.5 people^{28,30}). An alternative definition of low income is the expenditure of at least a certain percentage (56.2% at the time of our study) of income on food, shelter and clothing.³⁰ On average, food, housing, heating and telephone costs absorbed more than 90% of the monthly income of food bank users in our sample. Telephone service alone was a major expense for

Table 1: Sociodemographic characteristics of food bank users in Montreal compared with the general population in Quebec

Characteristic	In Montreal (this study), no. (and %)			In Quebec,* %
	Men n = 256	Women n = 234	Total n = 490	
Age, yr				
18–49	207 (80.8)	177 (75.6)	384 (78.4)	72.1
≥ 50	49 (19.1)	57 (24.4)	106 (21.6)	27.9
Region of birth				
Canada	108 (42.2)	102 (43.6)	210 (42.8)	90.4
Eastern Europe	62 (24.2)	34 (14.5)	96 (19.6)	—
South America	27 (10.5)	27 (11.5)	54 (11.0)	—
Africa or Arab states	28 (10.9)	14 (5.9)	42 (8.6)	—
Caribbean	10 (3.9)	42 (17.9)	52 (10.6)	—
Asia, India, other	21 (8.2)	15 (6.4)	36 (7.3)	—
Refugee status	50 (19.5)	29 (12.4)	79 (16.1)	—
Marital status				
Single	113 (44.2)	86 (36.8)	199 (40.6)	23.4
Married or living with a partner	96 (37.5)	75 (32.0)	171 (34.9)	66.5
Separated, divorced, widowed	47 (18.4)	73 (31.2)	120 (24.5)	10.1
Education				
Did not complete high school	77 (30.1)	103 (44.0)	180 (36.7)	40.5
Completed high school	53 (20.7)	67 (28.6)	120 (24.5)	35.7
Completed technical school, college or university	126 (49.2)	64 (27.4)	190 (38.8)	23.8
Body mass index†				
< 20	6 (2.3)	22 (9.4)	28 (5.7)	11.9
20–25	140 (54.7)	95 (40.6)	235 (48.0)	47.5
26–27	46 (18.0)	38 (16.2)	84 (17.1)	14.0
> 27	61 (23.8)	73 (31.2)	134 (27.3)	26.7
No data	3 (1.2)	6 (2.6)	9 (1.8)	0.0
No. of people in household				
1	139 (54.3)	65 (27.8)	204 (41.6)	27.2
2	37 (14.4)	52 (22.2)	89 (18.2)	31.5
3	35 (13.7)	46 (19.6)	81 (16.5)	17.9
4	26 (10.2)	35 (15.0)	61 (12.4)	—‡
5	13 (5.1)	24 (10.2)	37 (7.6)	—‡
≥ 6	6 (2.3)	12 (5.1)	18 (3.7)	2.1
Primary source of household income				
Social assistance benefits	222 (86.7)	187 (79.9)	409 (83.5)	—§
Employment insurance	15 (5.8)	8 (3.4)	23 (4.7)	11.5
Seniors' pension	4 (1.6)	10 (4.3)	14 (2.8)	—§
Full-time employment	2 (0.8)	3 (1.3)	5 (1.0)	—¶
Part-time employment	1 (0.4)	7 (3.0)	8 (1.6)	—¶
Seasonal employment	2 (0.8)	0 (0.0)	2 (0.4)	—§
Other	4 (1.6)	11 (4.7)	15 (3.1)	10.3
None	6 (2.3)	8 (3.4)	14 (2.8)	—§

*Source: Quebec census data.^{26,28}

†Body mass index = weight (kg) ÷ [height (m)]².²⁹ Based on self-reported weight and height.

‡Quebec data: 21.3% had 4 or 5 people per household.

§Included in "other" for Quebec data.

¶Quebec data: 78.2% had full-time or part-time employment.



many clients: 161 (32.8%) paid phone bills of at least \$66 per month. Ghadirian and colleagues²⁷ reported that 29.6% of francophones surveyed in Montreal smoked, but a much larger proportion (240 [49.0%]) of the participants in our study did so; the mean number of cigarettes smoked per day by those who did smoke (20.2, SD 17.8) was the same as in the earlier study (20.2). In our sample, 116 (23.7%) people reported spending an average of \$2.17 per week (SD \$5.90) on alcohol. Information on debts or costs for services such as cable television was not obtained. Although women reported higher total household incomes than men ($p < 0.001$), they generally lived in households with more people and therefore the monthly income per person was lower ($p < 0.001$).

The questionnaire assessed the reasons people sought food assistance (Table 3). The main reason, given by 417 people (85.1%), was insufficient money after paying other bills. A large proportion of participants (357 [72.8%]) said that they had enough food on hand for one more day. Although 222 (45.3%) would have delayed seeking food until the next day had the food bank been closed, 77 (15.7%) would have gone to another food bank and 126 (25.7%) would have sought relief from family; less than 1% would have stolen food or simply gone to sleep to avoid the problem. Only 35 (13.7%) of the men and 37 (15.8%) of the women were first-time users of a food bank.

On the day before seeking food assistance, mean dietary intake of the macronutrients protein, fat and carbohydrate, as a percentage of energy intake, approximated health recommendations:²⁹ the energy intake for men younger than 50 was 15.8% protein, 30.4% fat and 53.4% carbohydrates; for women younger than 50 it was 16.5% protein, 31.0% fat and 53.1% carbohydrate. The energy intake of participants 50 years of age and older was similar. Fat intake was lower than that reported by Ghadirian and colleagues²⁷ and by the Quebec nutrition survey.²⁸

The relation between determinants of total energy intake and sociodemographic characteristics was investigated for men and women separately. No differences were found between the sexes for energy intake in relation to total household income, country of origin, education level or whether or not a person smoked.

Interpretation

This study represents the first sociodemographic and nutritional characterization of a random sample of urban food bank users in Canada. We found that men and women were equally likely to use food banks and that food bank users were relatively young. Their main source of income was social assistance, which was inadequate to cover monthly expenses. BMI did not indicate undernutrition. In fact, there were no consistent predictors of low dietary intake to identify those most in need of food assistance.

An earlier study in Montreal¹⁹ showed that the mean age of women who sought food for themselves and their families was 36 (SD 3.8) years; that of men in the same situation was 37 (SD 3.6) years. The mean age of all people receiving social assistance benefits in Quebec is 39.3 years.³¹ The large number of food bank users who are of working age raises concern about the stress that shrinking emergency food resources may experience in future. This observation also raises the question of why we did not see the low-income subgroups often thought to be associated with food bank use (e.g., single parents, elderly people). In our study 12.6% of households were single-parent households with children under 18, whereas 18.2% of Quebec social assistance recipients live in family units headed by one parent.³¹ From this discrepancy we speculate that some single-parent families may be seeking food assistance from programs other than food banks, such as com-

Table 2: Income and expense profile of food bank users

Income or expense item	Men <i>n</i> = 256		Women <i>n</i> = 234	
	Mean (and SD)	% of monthly income	Mean (and SD)	% of monthly income
Monthly income, \$				
Per household*	762 (326)	NA	866 (323)	NA
Per person*†	450 (191)	NA	391 (155)	NA
Monthly expenses per household, \$				
Rent	353 (130)	46.3	388 (155)	44.8
Electricity	52 (46)	6.8	69 (55)	8.0
Gas or oil heating	39 (28)	5.1	64 (64)	7.4
Telephone	37 (28)	4.8	43 (25)	5.0
Food	224 (284)	29.4	216 (140)	24.9
Cigarettes	28 (40)	3.7	22 (39)	2.5

Note: SD = standard deviation, NA = not applicable.
 *Significant difference between men and women ($p < 0.001$).
 †Midpoint of monthly income per household ÷ number of people fed.

munity meals or collective kitchens. The proportion of single men in our study (44.2%) was similar to the proportion of single Canadians whose income is below the low-income cutoff (43.6%).

When asked, 72 (14.7%) of study participants reported that the current visit was the first time they had ever used a food bank; 328 (67.0%) of participants reported weekly, biweekly or monthly food bank visits. These data support the views expressed by clients that the food bank is a community service and a necessity rather than an embarrassment. In view of this perspective on the part of users, it may be inappropriate to refer to food banks as emergency food resources.

The proportion of older food bank users who were overweight has health implications, since these people may be at increased risk for chronic diseases. Almost 50% of the study group smoked, and smoking is a risk factor for heart disease and cancer.²⁹

The food bank users in this study were better educated than their peers in the general Quebec population. Almost half of the men in our study had completed technical school or had a college or university education. Significant correlations between education and the quality of diet have been previously documented.³²

Kinsey³³ reported that as income increases a smaller

percentage is spent on food. In our study, men reported spending 29.4% and women 24.9% of household income on food. These values are higher than the 21.8% reported in other recent work³⁴ but are in line with national data (26.7%).^{1,26} In terms of absolute dollars, food bank users spent \$2.99 to \$3.10 per person each day on food. The minimum food cost for an adequate diet during the winter has been estimated at \$4.53 per day,³⁵ which means that these food bank users had a monthly shortfall of between \$43.04 and \$46.35. It is unlikely that the food banks can compensate for this shortage. Many of our respondents were long-term food bank users, and studies have found that emergency food supplies do not provide adequate food variety or nutrition.^{19,21,36}

Conclusions

The majority of food bank users in this study were not those usually thought to be the most vulnerable in terms of nutritional status (the very young, those with chronic health conditions and the elderly); rather, they were healthy single individuals. Our findings indicate that food banks serve mainly the non-working poor, are used regularly and are seen by clients as a necessary community resource.

Table 3: Factors related to food bank use among survey participants

Factor	No. (and %) of survey participants		
	Men <i>n</i> = 256	Women <i>n</i> = 234	Total <i>n</i> = 490
Main reason for food bank visit			
Not enough or no food at home	81 (31.6)	90 (38.5)	171 (34.9)
To stretch food budget	73 (28.5)	69 (29.5)	142 (29.0)
Ran out of money for food	64 (25.0)	50 (21.4)	114 (23.3)
Other (e.g., excessive expenses, disaster)	38 (14.8)	25 (10.7)	63 (12.8)
Food on hand for one more day			
Yes	190 (74.2)	167 (71.4)	357 (72.8)
No	66 (25.8)	67 (28.6)	133 (27.1)
Perception of the food bank			
A community service	120 (46.9)	99 (42.3)	219 (44.7)
A necessity	104 (40.6)	116 (49.6)	220 (44.9)
An embarrassment	14 (5.5)	8 (3.4)	22 (4.5)
Other (e.g., big help, stop-gap measure)	18 (7.0)	11 (4.7)	29 (5.9)
Greatest impediment to getting food			
Not enough money after paying other bills	211 (82.4)	206 (88.0)	417 (85.1)
Food too expensive	18 (7.0)	14 (6.0)	32 (6.5)
Physical disability or illness	5 (2.0)	2 (0.8)	7 (1.4)
Other (e.g., store too far away, lack of time)	22 (8.6)	12 (5.1)	34 (6.9)
Frequency of food bank use			
Every week	53 (20.7)	58 (24.8)	111 (22.6)
Every 2–3 weeks	41 (16.0)	29 (12.4)	70 (14.3)
Once a month	80 (31.2)	67 (28.6)	147 (30.0)
Every 4–6 weeks	18 (7.0)	15 (6.4)	33 (6.7)
Only once before current visit	29 (11.3)	28 (12.0)	57 (11.6)
First time	35 (13.7)	37 (15.8)	72 (14.7)



The trust and cooperation of participating food banks and the many food bank users we met formed the cornerstone of this project. Special thanks are extended to the dietitian-interviewers for their thoughtful and thorough work.

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LOGIE MEDICAL ETHICS ESSAY CONTEST DEADLINE: JUNE 1, 1998

Once again, *CMAJ* is sponsoring the Logie Medical Ethics Essay Contest for undergraduate medical students attending Canadian universities. The awards this year are \$1500 for the winning essay, \$1000 for second place and \$750 for third place, but *CMAJ* reserves the right to withhold some or all awards if the quality of the entries is judged insufficient. The judges, consisting of a panel of editors from *CMAJ*'s scientific and news and features departments, will select the winners based on content, writing style and presentation of manuscripts. Essays should be no longer than 2500 words, including references, and should be double spaced. Citations and references should follow the "Uniform requirements for manuscripts submitted to biomedical journals" (see *CMAJ* 1997;156:270-7). The winning essays will appear in *CMAJ* and will be edited for length, clarity and consistency with journal style. Authors will be asked to provide a computer diskette containing their essay and will receive an edited copy before publication. Submissions should be sent to the News and Features Editor, *CMAJ*, 1867 Alta Vista Dr., Ottawa ON K1G 3Y6.

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