Child hunger in Canada: results of the 1994 National Longitudinal Survey of Children and Youth

Research

Recherche

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Abstract

Background: In Canada, hunger is believed to be rare. This study examined the prevalence of hunger among Canadian children and the characteristics of, and coping strategies used by, families with children experiencing hunger.

Methods: The data originated from the first wave of data collection for the National Longitudinal Survey of Children and Youth, conducted in 1994, which included 13 439 randomly selected Canadian families with children aged 11 years or less. The respondents were asked about the child's experience of hunger and consequent use of coping strategies. Sociodemographic and other risk factors for families experiencing hunger, use of food assistance programs and other coping strategies were analyzed by means of multiple logistic regression analysis.

Results: Hunger was experienced by 1.2% (206) of the families in the survey, representing 57 000 Canadian families. Single-parent families, families relying on social assistance and off-reserve Aboriginal families were overrepresented among those experiencing hunger. Hunger coexisted with the mother's poor health and activity limitation and poor child health. Parents offset the needs of their children by depriving themselves of food.

Interpretation: Physicians may wish to use these demographic characteristics to identify and assist families with children potentially at risk for hunger.

The number of Canadian children experiencing poverty is unacceptably high. In the past decade the poverty rate for Canada's children has risen to 1 in 5 nationally,[1] while the strong social safety net developed over the past 50 years has been eroded, primarily through spending cuts aimed at deficit reduction.[2,3] Single-parent families headed by women have the highest rate of poverty among all family types.[1,4,5] Growing up in poverty too often means problems related to ill health, poor nutrition, unhealthy development and poor school readiness.[6–14]

In Canada hunger is believed to be rare. US data, however, indicate that between 5.7% and 6.8% of children less than 12 years of age live in households with insufficient food, defined as the family sometimes or often not getting enough to eat.[15] Comparable analyses have not been done in Canada. Physicians are a primary contact for young families in the health care system and are thus likely to encounter disadvantaged children. We performed a study to determine the prevalence of hunger among Canadian children and to examine the characteristics of, and coping strategies used by, families with children experiencing hunger, the most extreme manifestation of food insufficiency.

Methods

The data for this study were derived from the first wave of data collection for the National Longitudinal Survey of Children and Youth (NLSCY), conducted in 1994 and released in 1996.[16] The NLSCY is a joint project of Human Resources Development Canada and Statistics Canada. Statistics Canada's Labour Force Survey[17] formed the sampling frame from which households with eligible children were randomly selected. From these households, 1 child aged 11 years or less was randomly chosen for participation in the survey; addi-

tional children from the same family (up to a maximum of 4 per household) were also randomly assigned for inclusion. This resulted in a sample of 13 439 households and 22 831 children who participated in the NLSCY. Canadians living in institutions and on First Nation reserves were excluded from the survey, and data collected for residents of the Northwest Territories and the Yukon Territory were not released for analysis.

In each household the person most knowledgeable about the child (herein referred to as the primary caregiver) provided responses on behalf of the child and family to detailed questions regarding their sociodemographic, health, family functioning and educational characteristics. These questions were asked only for children over 2 years of age. The "forced-choice" questions analyzed in this study were: "Has your child ever experienced being hungry because the family had run out of food or money to buy food? If yes, how often?" and "How do you cope with feeding your child when this happens?" Response choices included skipping meals, reducing food variety, and using food banks or other services.

Bivariate analyses were first conducted to explore the relation between ever and never experiencing hunger and several demographic variables, including family composition, size of residential area, region, self-rated health, ethnic background, income and income source. We also analyzed the data by frequency of reported hunger. We then tested the strengths of the associations using stepwise logistic regression analysis with a mixed model including categorical variables and one continuous variable, income, which was linearly associated.

We confined our analyses to the subgroups reporting ever experiencing hunger in an effort to provide conservative estimates. Because we were not generating population estimates in the study, we did not weight the data. Because we were applying multiple tests to the data, we chose $p < 0.005$ as the level of significance for comparisons between those ever and never experiencing hunger. The level of significance used for demonstrating differences between those who reported experiencing hunger frequently versus occasionally remained at $p < 0.05$. We also used Statistics Canada guidelines when reporting estimates as reliable (sample size ≥ 30 and low coefficients of variation [≤ 16.5%]), marginal (sample size ≥ 30 and high coefficients of variation [16.6%–33.3%]) or unreliable (sample size < 30 or very high coefficients of variation [> 33.3%]).[18]

Results

A total of 16 639 responses from the eligible sample of 17 018 were recorded for the questions on hunger, representing a response rate of 97.8%. Overall, 206 families responded affirmatively to the question on hunger, representing an unadjusted prevalence rate of 1.2%, or 57 000 Canadian families.[16]

Results from the bivariate analysis are presented in Table 1. Families of Canada's hungry children were 8 times more likely than other families to be led by a single parent, more than 4 times more likely to represent people of Aboriginal descent living off-reserve and 13 times more likely to report income from social assistance or welfare. The mean annual personal income of the primary caregiver was $4337 lower for those who reported that their child experienced hunger ($12 816) than for those who reported that their child never experienced hunger ($17 153); the difference in mean household income between the 2 groups was $26 703 ($21 255 v. $47 958) ($p < 0.001$).

The education of mothers from households that ever experienced hunger was diverse, although it was significantly less than that of mothers from households that did not experience hunger ($p < 0.001$): 33.2% had less than high school education, 15.6% had completed high school, 29.1% had some postsecondary education, and 22.1% had a university degree or higher education. The corresponding values for the other mothers were 16.9%, 20.0%, 27.7% and 34.9%. Among the 46.1% of households that had a male spouse or male primary caregiver, the father's education level was lower than that of the mothers who reported hunger, with 51.1% having less than high school education, 14.4% having completed high school and 34.4% having at least some postsecondary education ($p < 0.03$).

Differences in health status between those who reported hunger and those who did not were also significant. A total of 50.0% of the primary caregivers of hungry children rated their health as very good or excellent, 35.4% rated their health as good, and 14.5% rated their

Table 1: Odds ratios for comparison of sociodemographic variables between households that reported ever experiencing hunger and those that reported never experiencing hunger in the 1994 National Longitudinal Survey of Children and Youth

Variable*	% of children in households: Ever experienced hunger *n = 206*	% of children in households: Never experienced hunger *n = 16 433–16 639*	Crude OR (and 95% CI)
Single parent household	58.3	15.0	8.27 (6.19–11.05)
Large urban area (population > 500 000)	28.2	17.5	1.82 (1.32–2.50)
Aboriginal descent living off-reserve	16.0†	3.9	4.66 (3.13–6.92)
Income source includes wages or salaries	56.8	87.0	0.20 (0.15–0.26)
Income source includes social assistance or welfare	68.9	14.7	12.99 (9.09–17.54)
Main income from employment	38.8	85.6	0.11 (0.09–0.14)
Main income from social services	56.8	12.5	9.20 (6.89–12.28)

Note: OR = odds ratio, CI = confidence interval.
*All differences are significant at $p < 0.001$.
†Marginal result according to Statistics Canada guidelines.[18]

health as fair or poor; the corresponding values for the primary caregivers of children who did not experience hunger were 74.3%, 21.2% and 4.5% ($p < 0.001$). The prevalence of a chronic health condition in the primary caregiver was significantly higher in families that reported ever experiencing hunger than in families that did not report hunger. Two chronic health conditions were reported significantly more often by the primary caregiver in hungry households than by the primary caregiver in the other households: back problems (18.9% v. 10.5%) and migraine (21.4% v. 10.3%) ($p < 0.001$). Primary caregivers from hungry households were also significantly more likely than primary caregivers in the other households to report activity limitations at home (18.0% [Statistics Canada guidelines caution that this percentage is a marginal result[18]] v. 7.2%) ($p < 0.001$).

The health of hungry children also differed significantly from that of children who did not experience hunger, as measured by the primary caregiver's reported health of the child. For children who ever experienced hunger, health was reported to be very good or excellent in 73.9%, good in 19.4% and fair or poor in 9.7% (Statistics Canada guidelines caution that this percentage is an unreliable estimate[18]); the corresponding values for children who never experienced hunger were 87.2%, 10.7% and 2.1% ($p < 0.001$). Ever having received a diagnosis of asthma was the only health condition that differed between children of hungry and nonhungry families (22.8% [Statistics Canada guidelines caution that this percentage is a marginal result[18]] v. 12.6% respectively) ($p < 0.001$).

Primary caregivers from hungry households were 1.7 times more likely than other primary caregivers to report daily cigarette use (49.0% v. 29.7%) ($p < 0.001$). The higher smoking rate may be partially responsible for the higher childhood asthma rates.[19] Alcohol use in the previous year was significantly more common among primary caregivers in nonhungry households than among primary caregivers who reported family hunger (79.9% v. 69.9%) ($p < 0.001$). Alcohol abuse was not determined.

Stepwise multiple logistic regression analysis showed that the odds of ever experiencing hunger were 7.6 times greater for families in which the primary caregiver's self-rated health was poor and that it was 3.2 times greater among families in which the child's health was rated as fair or poor (Table 2). Low household income, a parent looking for work, Aboriginal status and single-parent household were also independent predictors of hunger. Tobacco use was not included in the model because it is a behavioural rather than a sociodemographic variable.

Frequency of reported hunger

Respondents were asked to indicate the frequency of their family's reported hunger. The choices included more often than at end of month (6.3%), regularly at end of month (19.9%), every few months (8.7%) and occasionally, not a regular occurrence (65.0%). The 72 families (35.0%) who reported hunger at least every few months were defined as frequently hungry; the remaining families were categorized as occasionally hungry.

In the stepwise multiple logistic regression model, the only variable that was significantly related to frequent hunger was social assistance or welfare as the main source of income, with an elevated risk of 5.1 (95% confidence interval 2.5–10.4, $p < 0.001$). The difference in mean income between frequently ($18 110) and occasionally ($22 945) hungry households was $4835 ($p < 0.02$).

Coping strategies

In response to lack of food, 34.0% of the respondents

Table 2: Odds ratios for variables associated with ever experiencing hunger

Independent variable	Crude OR (and 95% CI)	Adjusted OR (and 95% CI)	*p* value
Main income source (social assistance)	9.20 (6.89–12.28)	2.09 (1.43–3.06)	< 0.001
Household income	0.95 (0.94–0.96)	0.96 (0.95–0.97)	< 0.001
Primary caregiver's health poor	9.76 (4.87–19.10)	7.59 (3.50–16.48)	< 0.001
No. of parents	0.12 (0.09–0.16)	0.49 (0.35–0.70)	< 0.001
Child's health fair or poor	5.15 (3.11–8.44)	3.18 (1.83–5.53)	< 0.001
Ethnic origin (Aboriginal)	4.66 (3.13–6.92)	2.00 (1.33–3.02)	< 0.001
Main activity looking for work	7.44 (3.74–14.42)	4.61 (2.36–9.01)	< 0.001

Table 3: Odds ratios for variables associated with using food bank and seeking help from relatives as coping strategies in response to hunger

Independent variable	Crude OR (and 95% CI)	Adjusted OR (and 95% CI)	*p* value
Using food bank			
Region (Ontario)	3.39 (1.68–6.86)	3.48 (1.68–7.22)	< 0.001
Primary caregiver has activity limitations at home	0.23 (0.11–0.48)	0.16 (0.04–0.55)	0.004
Two biological parents	0.25 (0.10–0.60)	0.38 (0.18–0.83)	0.015
Seeking help from relatives			
No. of children aged ≤ 17 yr in household	0.28 (0.10–0.75)	0.42 (0.28–0.63)	< 0.001
Primary caregiver has chronic condition	0.26 (0.10–0.65)	0.41 (0.19–0.87)	0.02
Middle-level income (v. higher)	0.15 (0.07–0.34)	0.05 (0.02–0.52)	0.01
Two biological parents	4.27 (1.93–9.52)	3.21 (1.44–7.14)	0.004

reported that the parent skipped meals or ate less when the family had run out of food or money to buy food, 4.9% (Statistics Canada guidelines caution that this percentage is an unreliable estimate[18]) reported that the child skipped meals or ate less, and 26.7% reported that they cut down on the variety of food that the family usually ate. Other coping strategies included seeking help from relatives (31.1%), from the food bank (31.1%) or from friends (15.5% [Statistics Canada guidelines caution that this percentage is a marginal result[18]]); few respondents reported seeking help from a social worker or government office or a children's feeding program. Households using the most commonly reported strategies (food bank use and seeking help from relatives) differed in family composition and income level and by region (Table 3).

Interpretation

"Poor" children are not synonymous with "hungry" children.[20–22] In our study, parental self-deprivation in response to lack of food far exceeded child deprivation. The resultant poor nutritional status of the parent may exacerbate a chronic condition, and studies have shown that declines in mothers' nutritional status may be used as risk indicators for food insufficiency in the home.[20–23]

Children at risk for hunger are most likely to reside with single mothers with very low incomes, usually derived from social assistance or welfare. They live in large urban areas and are demographically similar to other Canadian families except for overrepresentation of off-reserve Aboriginal households. The plight of on- and off-reserve First Nation families is well documented.[24,25] In the NLSCY, children in households that reported hunger suffered not only from their own ill health but also from their parent's ill health and activity limitations in the home.

Hungry families reported coping by visiting food banks or seeking help from relatives and friends. Food bank users are more likely to be single parents with fewer support networks to draw on.[26] Food banks are a poor source of nutrition for families because they are often inaccessible,[27] food quality may be low,[28,29] and food may be of variable supply.[2,29]

Physicians are no doubt aware of higher smoking rates among lower income groups.[30] In our study, the rate of daily or occasional smoking was 72.2% among primary caregivers who reported frequent hunger, as compared with 50.7% among those who reported occasional hunger ($p < 0.01$). Studies have shown that the fear of running out of food is very stressful in low-income families.[20,31] Cigarette use in disadvantaged women is known to reduce their stress,[32] and nicotine acts as an appetite suppressant, which is helpful in a situation of food insecurity. Physicians may wish to provide sensitive smoking-cessation counselling and support to such women. Disadvantaged women are often unaware of nicotine replacement therapy or bupropion hydrochloride (Zyban) as smoking cessation aids.[32]

In this study we have reported on a very small sample of the NLSCY, 1.2%. Missing from the sample are the children in homeless families and frequently mobile families. The survey was also unable to probe the complex relations between income and food provisioning, given the limited number of questions about hunger. These questions should be pursued in future research.

Hunger in Canada is a marker of extreme disadvantage. Our study marks the first time that child hunger has been measured nationally and that predictors for hunger have been determined. Physicians can use these predictors to identify children at risk for hunger in their practices. We can also use this study as commentary on the tragedy and disgrace of child poverty in Canada.[33]

Competing interests: None declared.

Contributors: Dr. McIntyre was the principal author, conceived the research question and methodological approach, and interpreted the data. Ms. Connor was responsible for much of the literature review, assisted in preparing the research proposal for funding, and contributed to the creation of derived variable names, analytic approach and interpretation of NLSCY methods and data collected. Mr. Warren conducted the data analysis and assisted in the preparation of the methods section and interpretation of the results.

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