Lone Motherhood and Risk for Cardiovascular Disease

The National Population Health Survey (NPHS), 1998-99

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ABSTRACT

Purpose: To examine whether lone parenthood among Canadian women is associated with risk factors for cardiovascular disease (CVD).

Methods: The sample was from the National Population Health Survey (NPHS) and it included 2,184 mothers (women with dependent children < 18 years of age) of whom 478 were lone (22%) and 1,706 (78%) were partnered mothers. Descriptive statistics and multiple logistic regression were undertaken with weighted data.

Results: Compared to partnered mothers, lone mothers were significantly younger, and reported lower levels of education and income. Lone mothers reported significantly lower levels of health, less social support, and more distress and depression than partnered mothers. Further, lone mothers were significantly more likely to be smokers than partnered mothers. Odds ratios for being a lone mother and current smoker on social assistance in this analysis was 4.15 (95% CI 2.27-7.60), and for those reporting low or mid/high incomes respectively, were 2.99 (1.51-5.90) and 3.01 (1.93-4.70). There were no significant differences between the two groups for obesity or physical activity.

Conclusions: Smoking is a significant CVD lifestyle risk for lone mothers. Smoking occurred in the context of considerable life stress, depression, and distress pointing to links between health behaviour, psychosocial factors, and CVD health. These results suggest that lone mothers are a key target group for primary prevention in the CVD field. Programs and policies that support lone mothers in their goals of attaining healthier lifestyles have the potential to contribute to the prevention of cardiovascular disease in Canadian women.

La traduction du résumé se trouve à la fin de l'article.

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Cardiovascular disease (CVD) is the major cause of death of men and women, with a global epidemic underway that, in future years, will affect the lives of women throughout the world.^{1,2} Prior to death, women spend approximately twice as many years disabled than their male counterparts with diseases such as CVD.^{1,3} Over the past 15 years, socio-economic status (SES) has been identified as a CVD risk factor for women and men in developed countries.⁴⁻⁸

In women, family income is an important indicator of CVD risk.^{9,10} Yet, the prevalence of CVD lifestyle and clinical risk factors (e.g., smoking, obesity, physical inactivity, hypertension) and CVD events in subpopulations of family types such as female-headed, low-income families, has rarely been examined. Female-headed, low-income families are one family type in which the inequalities for health aggregate.¹¹⁻¹⁷ Further, the majority of lone-parent families are female-headed, and many of these live in poverty.^{17,18} The purpose of this study was to determine whether a relationship exists between CVD risk factors and parenthood status using cross-sectional data from Statistics Canada's 1998-99 National Population Health Survey (NPHS).

METHODS

Source of data and design

Data for this study were obtained from the cross-sectional file of the 1998-99 NPHS, a population-based study that collected information regarding the health of Canadians every 2 years. The data collection methods are published elsewhere.¹⁹⁻²¹

The dependent variables examined in this study included smoking status, overweight, physical inactivity, and Body Mass Index (BMI) – a measure of obesity. Smoking status was analyzed as current smokers – that is, respondents who reported smoking cigarettes daily at the time of the survey – and non-smokers, which included ex-smokers and those who never smoked. The level of physical activity was based on the total accumulated energy expenditure for leisure activities. Each NPHS respondent was asked to report the average duration and frequency of leisure-time activities in the previous three months. Energy expenditure was calculated from the multiplication of duration

(hours), frequency, and intensity of activity (measured as a constant metabolic energy demand for each of the listed activities) and was expressed as total kilocalories expended per kilogram of body weight per day (kcal/kg/day). The energy expenditure categories used in the NPHS were 1.5 or less (low), 1.5 to 2.9 (medium), and 3 or more (high). For this article, physical activity was examined as active (medium and high energy expenditure) and inactive (low energy expenditure). Body Mass Index (BMI) was estimated from self-reported weight and height; it was calculated as weight (kg)/height (m).² Two categories were defined, normal BMI (BMI < 25) and overweight (BMI ≥ 25).

The independent variable, type of mother, was categorized into lone or partnered. Lone mothers were defined as living without a cohabitating partner and with 1 or more children 18 years or younger; partnered mothers were defined as cohabitating with a partner and 1 or more children 18 years or younger. In addition, the following socio-demographic characteristics were examined: age, ethnicity, education, current region of residence, geographic setting, current labour force participation, social assistance, and income adequacy. Income adequacy was measured by including the number of people in the household and the total household income from all sources in the previous 12 months. Income adequacy was categorized as lowest (<\$10,000-15,000/year), lower-middle (\$10,000-30,000/year), middle (\$15,000-\$60,000/year), upper-middle (\$30,000-80,000/year), highest (\$60,000->80,000/year). Since socio-economic status is associated with both risk for CVD and overall health status,²²⁻²⁴ health status was included in the present analysis* to more fully understand the pathways connecting

* Questions relating to health status that were asked during the NPHS interview included self-perceived health status, presence of health conditions, and health service utilization. For the purposes of this analysis, health status was dichotomized as less than or equal to 'good' health and very good/excellent health. Any chronic condition was defined as "any long-term health conditions that have lasted or are expected to last six months or more that have been diagnosed by a health professional". Number of consultations with a family physician during the past 12 months was examined as a potential explanatory variable because research suggests that lone mothers have higher levels of health care utilization than partnered mothers.^{23,24} The consultations were defined as zero or 1 visits and 2 or more visits.

TABLE 1

Socio-demographic Characteristics of 2,184 Mothers with Children in the Household Less Than or Equal to 18 Years of Age from the 1998-99 NPHS, According to Lone and Partnered Status

	Lone Mothers			Partnered Mothers		
	Percent	Freq	95% CI	Percent	Freq	95% CI
Age						
<24*	6.8†	35	0.03, 0.10	3.1†	63	0.02, 0.04
25-29*	12.4†	67	0.08, 0.17	8.8	203	0.07, 0.11
30-34	19.2	103	0.14, 0.24	20.2	368	0.17, 0.23
35-39	27.9	128	0.22, 0.34	27.8	493	0.25, 0.31
40-44	20.5	93	0.15, 0.26	21.8	332	0.19, 0.25
45+*	13.2†	52	0.09, 0.18	18.3	247	0.16, 0.21
Race						
White	87.6	414	0.83, 0.92	88.9	1564	0.87, 0.91
Education						
< High school*	17.3	89	0.12, 0.23	11.4	206	0.09, 0.13
High school graduate*	15.3	67	0.10, 0.20	18.6	298	0.16, 0.21
Some university/college/trades	31.6	169	0.25, 0.38	28.3	477	0.26, 0.31
Completed college/trades*	26.4	114	0.20, 0.33	21.8	401	0.19, 0.24
Completed university*	9.4†	39	0.05, 0.13	19.9	324	0.17, 0.23
Income adequacy						
Lowest*	42.6	230	0.35, 0.50	7.6	142	0.06, 0.9
Middle*	30.4	144	0.24, 0.37	24.9	436	0.22, 0.28
Highest*	27.0	92	0.22, 0.32	67.6	1054	0.65, 0.70
Social assistance*	26.3	147	0.20, 0.33	1.5‡	27	0.01, 0.02
Food insecurity*	37.6	195	0.31, 0.44	7.7	147	0.06, 0.09
Employment						
Currently working*	64.0	293	0.58, 0.70	70.8	1231	0.68, 0.74
Not currently working*	36.0	185	0.30, 0.42	29.2	472	0.26, 0.32
Region of residence						
Atlantic Canada	8.0†	118	0.04, 0.12	7.5	404	0.06, 0.09
Central Canada	64.7	215	0.59, 0.71	61.2	734	0.58, 0.65
Western Canada*	27.3	145	0.22, 0.33	31.3	568	0.28, 0.34
Geographic setting						
Rural*	11.3†	71	0.07, 0.16	23.2	449	0.21, 0.26
Number of children						
<18 years living in household						
1 child*	45.9†	222	0.39, 0.52	36.0	641	0.33, 0.39
2+ children*	54.2	256	0.47, 0.61	64.0	1065	0.61, 0.67

* $p \leq 0.05$ for the comparison between lone and partnered mothers using 95% confidence intervals.

† Coefficient of variation between 16.6 and 25.0.

‡ Coefficient of variation between 25.1 and 33.3.

SES, health, and risks for CVD. Parental history of cardiovascular disease was also examined as a potential confounding variable, as were a number of psychosocial and mental health indicators, including: food insecurities, social support, sense of coherence,²⁵ depression, and distress. A median split was used to dichotomize the depression and distress measurement scores into lower and higher levels.

Statistical analyses

The prevalence of CVD risk factors was compared between the two types of motherhood using univariate and multivariate techniques. Coefficients of variation were used for the descriptive analyses and to calculate 95% confidence intervals. For the multiple logistic analyses, the variance estimations were calculated using the bootstrap technique,^{26,27} which fully accounts for the design effects of the NPHS. Tests of significance were two-sided and the level of significance was set at $p \leq 0.05$.

Multiple logistic regression was used to examine whether lone motherhood was

significantly associated with the heart health-related behaviours (smoking, physical activity, overweight/obesity) after controlling for other factors believed to be associated with these variables. The regression models were constructed to be explanatory and measure the strength of the association. Therefore, causality cannot be implied. Upon investigation, lone motherhood was found to interact with income adequacy. To adequately control for both of these variables, the comparison groups were re-categorized into 5 groups: lone mothers on social assistance, with a low income, with middle to high income; partnered mothers with a low income; and, partnered in the middle- to high-income categories.

To assess the relationship between the exposure variable and the outcomes, four regression models were developed, which included crude, age-adjusted, fully adjusted, and parsimonious models. Since these models did not differ substantially, only the data for the parsimonious models are shown. Selection of the other explanatory

TABLE II

Lifestyle and Medical Characteristics of 2,184 Mothers with Children in the Household Less Than or Equal to 18 Years of Age from the 1998-99 NPHS, According to Lone and Partnered Status

	Lone Mothers			Partnered Mothers		
	Percent	Freq	95% CI	Percent	Freq	95% CI
Smoking Status						
Never/Former*	47.2	225	0.41, 0.54	75.7	1258	0.73, 0.79
Current*	52.8	253	0.46, 0.60	24.3	448	0.22, 0.27
Physical Activity						
Non-active	54.7	256	0.48, 0.62	58.6	962	0.56, 0.61
Active	45.3	222	0.38, 0.52	41.4	735	0.38, 0.45
Body Mass Index						
BMI ≤ 25	59.7	258	0.52, 0.67	60.3	963	0.57, 0.63
BMI > 25	40.3	197	0.34, 0.47	39.7	672	0.36, 0.43
Medical History						
Self report health status						
Poor/fair*	14.3†	65	0.10, 0.19	4.4	81	0.03, 0.06
Good*	28.5	139	0.23, 0.34	23.4	366	0.21, 0.26
Very good	38.9	180	0.32, 0.45	42.4	761	0.39, 0.46
Excellent*	18.3	94	0.13, 0.23	29.8	498	0.27, 0.32
Family history of heart disease or stroke (parents)*	34.5	184	0.28, 0.41	41.5	694	0.38, 0.45
Any chronic condition	64.8	316	0.57, 0.73	58.6	990	0.49, 0.69
Chronic conditions						
None	35.2	162	0.29, 0.41	41.4	716	0.38, 0.45
1 condition	28.3	141	0.22, 0.34	29	500	0.26, 0.32
2 conditions	13.2†	68	0.09, 0.18	15.2	267	0.13, 0.17
3+ conditions*	23.3	107	0.18, 0.29	14.5	223	0.12, 0.17
# of consultations with family doctor in past year						
0-1 visits*	32.3	148	0.26, 0.39	38.5	651	0.35, 0.42
2+ visits*	67.7	330	0.60, 0.75	61.5	1055	0.59, 0.62

* $p \leq 0.05$ for the comparison between lone and partnered mothers using 95% confidence intervals.

† Coefficient of variation between 16.6 and 25.0.

TABLE III

Psychosocial and Mental Health Characteristics of 2,184 Mothers with Children in the Household Less Than or Equal to 18 Years of Age from the 1998-99 NPHS, According to Lone and Partnered Status

	Lone Mothers			Partnered Mothers		
	Percent	Freq	95% CI	Percent	Freq	95% CI
Social support						
33% percentile - low*	51.3	249	0.44	31.6	530	0.29
66% percentile - mid*	25.5	125	0.19	30.5	517	0.28
99% percentile - high*	23.2	97	0.18	37.9	644	0.35
Depression*	14.0†	61	0.09	6.8	119	0.05
Distress*	62.3	278	0.55	41.4	675	0.39
Sense of coherence – scale						
Low*	65.1	312	0.59	45.5	743	0.42
High*	34.9	153	0.28	54.5	928	0.51

* $p \leq 0.05$ for the comparison between lone and partnered mothers using 95% confidence intervals.

† Coefficient of variation between 16.6 and 25.0.

co-variables that were included in the regression models, listed and described above, was based upon the literature and on the results of the univariate analysis. Variables that were significant at $p \leq 0.20$ were eligible for inclusion in the full regression model. To derive the parsimonious models, a manual backward elimination procedure was used where variables that did not impact on the association of interest and those that were not significant at $p \leq 0.10$ were removed. Explanatory variables that were thought to be theoretically important in the relationship between mother's status and the outcomes, but

were not significant in the full regression models, were not eligible for exclusion. The impact of removing each variable from the logistic model was evaluated using the following criteria: 1) non-significant difference ($p > 0.05$) between the -2 log likelihood of the regression model that included the variable of interest and the model with the variable removed; 2) less than a 15% difference in the odds ratios for the exposure variable determined by the inclusion or exclusion of the variable of interest. All data manipulation and statistical analyses were performed using the Statistical Analysis System (SAS).

RESULTS

Socio-demographic characteristics of mothers in this study are presented in Table I. Of the 2,184 mothers, 22% ($n=478$) were lone and 78% ($n=1,706$) were partnered. Lone mothers experienced lower socio-economic circumstances and health status than partnered mothers, with 42.6% of lone mothers in the lowest income adequacy category, 17.3% having less than a high school diploma, a significantly greater proportion being on social assistance (26.3%), and reporting food insecurities (37.8%). Data suggest a slight tendency for lone mothers to comprise a greater percentage of the population of mothers in urban regions.

The health of lone mothers was significantly poorer than that of partnered mothers. For example, 14.3% of lone mothers rated their health as poor compared to 4.4% of partnered mothers. Further, lone mothers were significantly more likely to report 3 or more chronic conditions than partnered mothers (23.3% vs. 14.5%). Regarding cardiovascular lifestyle risk factors, lone and partnered mothers differed significantly with respect to their smoking behaviour, but not for being overweight (BMI ≥ 25) and engaging in physical activity. Of the lone mothers, 52.8% were current smokers compared with 24.3% of partnered mothers. Of note, approximately 40% of mothers were overweight in this study and 55% and 59% of lone and partnered mothers, respectively, were inactive (Table II).

The psychosocial and mental health characteristics of the mothers are revealing in terms of beginning to understand the context within which the CVD lifestyle risk behaviour takes place. Compared with partnered mothers, lone mothers had significantly lower social support and sense of coherence scores and higher depression and distress scores (Table III).

The effects of mother's marital status on the odds of being a smoker, physically inactive, or overweight are shown in Tables IV through VI. The only heart health behaviour that was significantly associated, in either univariate or multivariate models, with type of motherhood was smoking.

Overall, lone mothers on social assistance had the highest odds of being a current smoker, with an adjusted odds ratio of

4.15 (Table IV). Regardless of the income group, lone mothers had greater odds of smoking than partnered mothers. When controlled for education and other variables, the odds of being a smoker were greatest for those in the lowest SES group. The adjusted ORs for the lowest SES group, social assistance, was 4.15, then the ORs decreased to 2.99 and 3.01 for the low income and mid/high income lone mothers groups, respectively. The odds of being physically inactive and overweight (see Table V) were similar in magnitude but were not significantly different among the two groups of mothers.

DISCUSSION

Lone and partnered mothers differed in the prevalence of smoking, with lone mothers at all income levels more likely to report being current smokers. Similarly, lone mothers were more likely to have higher depression scores and report poor or fair health than partnered mothers, as has been found in other studies.^{11-16,28,29} There was no significant difference between lone mothers and partnered mothers with regard to physical activity levels or BMI. However, the physical inactivity and overweight levels among both lone and partnered mothers suggest that all mothers are at greater risk for cardiovascular disease because of low activity levels. This analysis begins to explicate the links between lifestyle CVD risks, physical and emotional health status, and the socio-economic conditions of living.

Our results showing that lone mothers were a particular subpopulation at risk for CVD with regard to smoking are supported by similar results from Britain and Australia, and the United States.³⁰⁻³² Smoking is widely understood to be associated with circumstances of deprivation,³³⁻³⁶ conditions of living accompanied by stress and negative life events.^{35,37} This present study and a study by Siahpush³⁰ indicate that lone motherhood itself is a risk condition for smoking, with lone mothers at the lowest SES levels at the highest risk of smoking. While smoking is portrayed as a lifestyle choice that buffers the stress and boredom experienced by low-income people,³⁸⁻⁴⁰ we suggest that addressing smoking with marginalized populations such as lone mothers requires looking beyond lifestyle behaviours to the social context which

TABLE IV

Odds Ratios for Being a Current Smoker According to Mother's Status While Controlling for Age, Ethnicity, Education, Number of Doctor Visits, Depression Score, Distress Score and Sense of Coherence Score (1998-99 NPHS)

Independent Variables	n†	Adjusted OR	95% CI
Mother's Status†			
Lone mothers - social assistance	146	4.15	(2.27, 7.60)*
Lone mothers - low income	97	2.99	(1.51, 5.90)*
Lone mothers - mid/high income	223	3.01	(1.93, 4.70)*
Partnered mothers - low income	142	0.64	(0.40, 1.05)
Partnered mothers - mid/high income	1490	1.00	...
Age		0.94	(0.92, 0.96)*
Ethnicity - Caucasian		1.00	...
Non-Caucasian		0.18	(0.11, 0.30)*
Education - Low		1.00	...
Mid		0.60	(0.41, 0.86)*
High		0.43	(0.31, 0.59)*
# of doctor visits - 0-1 visits		1.00	...
2+ doctor visits		0.66	(0.50, 0.88)*
Depression - Lower score		1.00	...
Higher score		1.93	(1.20, 3.10)*
Distress score - Lower		1.00	...
Higher score		1.25	(0.91, 1.70)*
Coherence score - Lower		1.00	...
Higher score		0.68	(0.52, 0.90)*

† Sample size (n) based on multivariate model.

* $p \leq 0.05$ for the comparison with partnered mothers who have a mid to high income.

TABLE V

Odds Ratios for Being Physically Inactive According to Mother's Status While Controlling for Age, Ethnicity, Education, Region of Residence, Body Mass Index, the Presence of Chronic Conditions, Number of Doctor Visits, Working Status and Sense of Coherence (1998-99 NPHS)

Independent Variables	n†	Adjusted OR	95% CI
Mother's Status			
Lone mothers - social assistance	146	0.96	(0.58, 1.62)
Lone mothers - low income	97	0.69	(0.34, 1.37)
Lone mothers - mid/high income	223	0.85	(0.59, 1.23)
Partnered mothers - low income	140	1.31	(0.76, 2.25)
Partnered mothers - mid/high income	1483	1.00	...
Age		1.00	(0.98, 1.01)
Ethnicity - Caucasian		1.00	...
Non-Caucasian		1.77	(1.13, 2.76)*
Education - Low		1.00	...
Mid		0.99	(0.72, 1.37)
High		1.02	(0.75, 1.40)
Region of residence - Central Canada		1.00	...
Atlantic Canada		0.98	(0.74, 1.29)
Western Canada		0.71	(0.54, 0.95)*
Body Mass Index <25		1.00	...
BMI ≥ 25		1.42	(1.09, 1.83)*
Chronic Conditions - None		1.00	...
Presence of chronic condition		0.80	(0.62, 1.02)
# of doctor visits - 0-1 visits		1.00	...
2+ doctor visits		1.21	(0.94, 1.57)
Working Status - Employed		1.00	...
Not Employed		0.77	(0.58, 1.03)
Coherence score - Lower		1.00	...
Higher score		0.93	(0.74, 1.19)

† Sample size (n) for the multivariate model.

* $p \leq 0.05$ for the comparison with partnered mothers who have a mid to high income.

shapes behaviours such as smoking. Since Canadian social policy is a key determinant of the living conditions of lone mothers,^{14,41} addressing cardiovascular lifestyle risks of these women must include understanding and addressing the social policies and related practices that shape their lives.

Research demonstrates that quitting smoking reduces risk for CVD and

improves survival of women who have CVD events.⁴²⁻⁴⁴ Yet, smoking is a lifestyle behaviour that is highly resistant to change, particularly in women in stressful circumstances for whom smoking relieves stress and plays a role in short-term coping.^{38-40,42,44} Promoting smoking cessation for long-term heart-health gains may mean asking these women to eliminate

TABLE VI

Odds Ratios for Being Overweight According to Mother's Status While Controlling for Age, Ethnicity, Education, Region of Residence, Physical Activity Level, Self-rated Health Status, Presence of Chronic Conditions, Parental History of Cardiovascular Disease, Number of Doctor Visits and Sense of Coherence Score (1998-99 NPHS)

Independent Variables	n†	Adjusted OR	95% CI
Mother's Status†			
Lone mothers - social assistance	133	0.96	(0.56, 1.64)
Lone mothers - low income	94	0.73	(0.36, 1.49)
Lone mothers - mid/high income	217	1.02	(0.66, 1.59)
Partnered mothers - low income	134	1.38	(0.79, 2.40)
Partnered mothers - mid/high income		1.00	...
Age		1.02	(1.01, 1.05)*
Ethnicity – Caucasian		1.00	...
Non-Caucasian		0.90	(0.56, 1.43)
Education – low		1.00	...
Mid		0.94	(0.68, 1.30)
High		0.71	(0.53, 0.93)*
Region of residence – Central Canada		1.00	...
Atlantic Canada		1.55	(1.14, 2.10)*
Western Canada		1.02	(0.78, 1.34)
Physical Activity Level – Low		1.00	...
Moderate/High		1.40	(1.08, 1.81)*
Self-rated health status – Low		1.00	...
High		0.65	(0.49, 0.86)*
Chronic Conditions – None		1.00	...
Presence of chronic condition		1.34	(1.02, 1.75)*
Parental history of CVD – None		1.00	...
Positive history		1.29	(1.01, 1.66)*
# of doctor visits – 0-1 visits		1.00	...
2+ doctor visits		1.37	(1.04, 1.82)*
Coherence score – Lower		1.00	...
Higher score		0.81	(0.62, 1.06)

† Sample size (n) for the multivariate model.

* $p \leq 0.05$ for the comparison with partnered mothers who have a mid to high income.

something that makes their lives manageable. Thus, planning smoking cessation programs for lone mothers is fraught with complexities, including facing ethical issues that arise.^{45,46} Thus, how to reduce smoking in lone mothers is perplexing. This may explain the paucity of research designed to evaluate smoking cessation interventions that target low-income women, in spite of the call for such interventions by Stewart et al.⁴⁰ in an article published 8 years ago.

In a qualitative study designed to explore low-income women's perceptions of what is appropriate to include in heart disease primary prevention programs,⁴⁷ the women indicated that such programs should not only address multiple CVD risk factors, but also teach specific skills to support the adoption of heart-healthy behaviours and lay out a range of choices with potential for effecting behavioural change. Further, the women emphasized the need to move beyond the biomedical and behavioural paradigms and address the social and financial barriers to their capacity for living a heart-healthy life.

A model for community-based action entitled Community Action Research (CAR)⁴⁸ holds promise for addressing the

CVD health of low-income women. CAR is a non-linear conceptualization of 10 interconnected, value-based processes designed to bring forward social justice issues, such as those that may place lone mothers in socially and economically disadvantaged circumstances. Applying this model to work with communities that serve lone mothers has potential to shift the paradigm of CVD care from a focus on strictly biomedical and behavioural factors to a focus that acknowledges the centrality of social inequities in constructing cardiovascular health.⁴⁹

Physical inactivity is a major risk factor for cardiovascular disease.⁵⁰ However, the rates of inactivity in Canadian women remain high. Over 55% of the mothers included in the study were physically inactive, which is comparable to the 1996/97 NPHS finding that approximately 59% of all women over the age of 12 were inactive.⁵¹ Greater health promotion efforts are needed to increase activity levels among all Canadian mothers.

Similar overweight prevalence rates were found for the mothers included in this study compared to women older than 12 years of age in the 1996/97 NPHS (approximately 40% vs. 37%, respective-

ly).⁵¹ As with physical inactivity, there were no statistically significant differences in being overweight according to type of motherhood. This finding was unexpected because of the previously reported inverse relationship between socio-economic status and body mass index.⁵²⁻⁵⁴ However, how we used BMI as an indicator of excess weight may have been misleading. In this study, being overweight was defined as having a BMI greater than or equal to 25, thus combining the standard classifications of overweight ($25 \leq \text{BMI} \leq 27$) and obesity ($\text{BMI} > 27$). The problem inherent in using BMI as a measure of being overweight is that, although it is correlated with body fat,^{55,56} some individuals may be misclassified. BMI simply reflects height and weight measurements without differentiating between muscle mass and body fat weight. Furthermore, since the anthropometric measurements were obtained from self-reported information, it is expected that the prevalence rates were underestimated by approximately 10%.^{57,58}

The major limitation of this study is its cross-sectional design. Since causation cannot be determined in cross-sectional designs, it is not possible to determine whether the heart health behaviour preceded or resulted from the type of mother's status. Another limitation of this study relates to the main exposure measure, motherhood status. The NPHS does not include information about how long a person has been a lone parent or partnered parent, information that may be revealing in terms of better understanding key factors on the pathway to cardiovascular disease. A next step in this research is to undertake a longitudinal analysis of the NPHS to flesh out cause and effect relationships.

Despite limitations, this study uniquely contributes to the literature on the health of lone mothers, and identifies an important target group for primary prevention.⁵⁹ This study found that lone mothers are more likely to be current smokers than partnered mothers, with smoking most prevalent in those mothers on social assistance who also were more likely to be depressed, distressed, and socially isolated than other mothers. All mothers reported physical activity levels and levels of body weight not protective against the development of cardiovascular disease.

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RÉSUMÉ

Objet : Déterminer si la monoparentalité chez les Canadiennes est associée aux facteurs de risque des maladies cardiovasculaires (MCV).

Méthode : Notre échantillon, tiré de l'Enquête nationale sur la santé de la population (ENSP), comprenait 2 184 mères (ayant des enfants à charge de moins de 18 ans); 478 étaient monoparentales (22 %), et 1 706 (78 %) avaient un partenaire. Nous avons procédé à l'aide de statistiques descriptives et d'une analyse de régression logistique multiple de données pondérées.

Résultats : Par rapport aux mères ayant un partenaire, les mères de familles monoparentales étaient significativement plus jeunes et déclaraient des niveaux de scolarité et de revenu inférieurs. Les mères de familles monoparentales déclaraient aussi de manière significative être en moins bonne santé, avoir un niveau de soutien social inférieur et vivre davantage de détresse et de dépression que les mères ayant un partenaire. De plus, les mères de familles monoparentales étaient de manière significative plus susceptibles d'être des fumeuses que les mères ayant un partenaire. Le risque relatif d'être mère de famille monoparentale, fumeuse actuelle et bénéficiaire de l'aide sociale, dans notre analyse, était de 4,15 (IC de 95 % = 2,27-7,60); ce risque était de 2,99 (1,51-5,90) et de 3,01 (1,93-4,70), respectivement, pour celles ayant déclaré un faible niveau de revenu ou un revenu moyen/supérieur. Nous n'avons observé aucune différence significative entre les deux groupes pour ce qui est de l'obésité ou de l'activité physique.

Conclusions : Pour les mères de familles monoparentales, le tabagisme est une habitude de vie qui comporte un important facteur de risque de MCV. Le tabagisme est présent dans un contexte de stress quotidien, de dépression et de détresse considérables, ce qui laisse supposer l'existence de liens entre les habitudes de santé, les facteurs psychosociaux et la santé cardiovasculaire. Ces résultats donnent à penser que les mères de familles monoparentales sont un important groupe cible pour la prévention primaire dans le domaine des MCV. Les programmes et les politiques qui appuient les mères de familles monoparentales à la recherche d'un mode de vie plus sain pourraient éventuellement contribuer à prévenir les maladies cardiovasculaires chez les Canadiennes.

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