

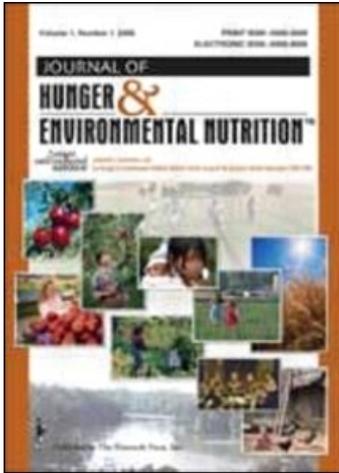
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### Milk Insecurity: Accounts of a Food Insecurity Phenomenon in Canada and Its Relation to Public Policy

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## **Milk Insecurity: Accounts of a Food Insecurity Phenomenon in Canada and Its Relation to Public Policy**

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*We investigated the phenomenon of milk insecurity among low-income lone mothers in Nova Scotia, Canada. Focus group and in-depth interviews were conducted and analyzed to assess challenges mothers faced in accessing milk for their families and the ways in which they coped with milk scarcity. Milk insecurity is a distinct feature of food insecurity for this population, with potentially serious health implications. Just as food insecurity is structurally determined through inadequate income, so too is milk insecurity. However, in Canada it is further exacerbated by public policy that sets the price of this staple too high relative to the purchasing power of the poor.*

**KEYWORDS** *milk insecurity, food insecurity, poverty, public policy*

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## INTRODUCTION

Food insecurity poses a threat to the health of vulnerable populations. *The Canadian Community Health Survey Cycle 2.2 (Nutrition)* estimates that 9.2% of Canadian households experienced food insecurity over the previous 12 months.<sup>1</sup> The province of Nova Scotia has the highest prevalence rate of food insecurity in the country at 14.6%. Households with children, in particular those headed by a female lone (single) parent, and households with at least one child under the age of 6 years, or those with 4 or more children are especially vulnerable to food insecurity.<sup>1</sup>

In Canada, milk is considered to be a staple food. *Eating Well With Canada's Food Guide* recommends that most Canadians drink between 2 and 4 cups of lower fat milk (skim, 1%, or 2%) every day depending on age and sex.<sup>2</sup> Milk is a key source of essential nutrients; one cup of milk provides approximately 30% of an adult's adequate intake for calcium and because all fluid cow's milk in Canada is fortified, it also provides 45% of an adult's adequate intake for vitamin D. Consuming dairy products also reduces the risk of osteoporosis, with the protective effect being strongest for women under 30 years of age.<sup>3</sup> Recently, milk intake has been linked to reduced risk of type 2 diabetes mellitus<sup>4</sup> and to the prevention of obesity in both adults<sup>3,5</sup> and children.<sup>6,7</sup> A review by Álvarez and colleagues<sup>8</sup> concluded that low intake of dairy products increases the risk of hypertension, stroke, and colorectal cancer.

Low-income families appear to have difficulty providing milk for their household members. Our work has shown inadequate intake of calcium and vitamin D by low-income lone mother-led families living in Atlantic Canada.<sup>9</sup> We also have evidence of unequal intra-household distribution of milk among low-income households, with younger children consistently consuming greater quantities of milk than older children, and all children regardless of age having higher consumption of milk than their mothers.<sup>10</sup>

The struggle to provide milk is at least partly related to its cost.<sup>11</sup> When we assessed milk intake over the course of a month-long income cycle, low-income families consumed the most milk when they had the most money available to purchase food.<sup>10</sup> Tarasuk and colleagues<sup>12</sup> also noted fluctuation in milk consumption in relation to changes in household financial resources. Although low-income families purchase fewer servings of dairy products, they spend a higher proportion of their total food budget on milk products than other income groups do, indicating that milk is prioritized among food purchases.<sup>13</sup>

The cost of milk in Canada is regulated through the principles of supply management. Supply management was introduced in the early 1970s through the newly created Canadian Dairy Commission because there was concern that, "without production discipline, the Canadian market would regularly have an overabundance of agricultural products, which would, in

turn, trigger a sharp decline in producer prices.”<sup>14(p4)</sup> Supply management of milk has many positive aspects including an efficient, secure, and safe supply of milk without wide fluctuations in cost. It also promotes the viability of the 13 621 dairy farms in Canada<sup>15</sup> through income stability for dairy producers, which is a major public policy goal in Canada.

The retail price of milk is determined by 2 factors: the regulated farm-gate price paid to local dairy producers, which is set at the provincial level within the guidelines of the Canadian Dairy Commission,<sup>14</sup> and the unregulated amount added to a unit of milk to cover processor/distributor/retailer costs. Once the farm-gate price is set, any further gains in revenue by producers must be achieved through improved production efficiency. The average price paid per fluid milk unit to Canadian dairy producers is between 1.5- (United States, European Union) and 2-fold (New Zealand) higher than countries who use a market-driven system.<sup>16</sup> The key distinction between a market-driven and a supply management system, which is sometimes referred to as a *quota system*, is that production can be increased to achieve greater profits in the former but not in the latter.

Based on evidence of milk scarcity among low-income households, we undertook this research to explore the special situation of milk insecurity in Canada within the larger context of food insecurity. We define milk insecurity as lack of access to affordable milk through socially acceptable means.<sup>11</sup> Our research revealed the strong health value that the women gave to milk and the inability to afford insufficient milk, out of all foods, as a key marker of food insecurity. The purpose of this article is to present an account of milk insecurity as it is experienced by low-income lone mothers in Nova Scotia, Canada, as a phenomenon of food insecurity with unique public policy implications.

## METHODOLOGY

This study was part of a larger descriptive, exploratory study, where we investigated the public health nutrition gains that would result from stabilizing and possibly increasing monthly milk intake among low-income lone mothers and their children in Nova Scotia, Canada.<sup>11,17</sup> Lone mothers with children under age 14 years who consumed milk as part of the family diet were recruited through family and parent resource centers funded by the Canada Prenatal Nutrition Program (CPNP) and the Community Action Program for Children (CAPC) throughout the province. CPNP and CAPC are federal programs in Canada that provide funding to community-based organizations to deliver prevention and early intervention programs to promote the health and social development of pregnant women and infants (CPNP), children aged 0 to 6 years (CAPC), and their families facing conditions of risk. The populations reached by CPNP and CAPC share many similarities with the households most at-risk for food insecurity in Canada.<sup>18,19</sup>

Qualitative data were collected in 2 phases. During the first phase (2005), 4 women participated in face-to-face, semistructured in-depth interviews and an additional 30 women participated in 5 focus group interviews. An adaptation of the structured dialogue method<sup>20</sup> was used to explore 4 areas: (1) mothers' experiences with providing milk to their families; (2) challenges they faced in accessing milk for their families; (3) the impact of these challenges on their families; and (4) suggestions on what could be done to improve access to milk for families like theirs. In the second phase of the study (2006), 6 additional focus group interviews were conducted with a mix of the original respondents and new participants ( $n = 33$ ). For this round of interviews, following a presentation of the findings from the first phase of the study, the women were asked to identify factors related to accessing milk that were missed previously and then to expand upon proposed strategies to promote the consumption of milk in low-income families. This article does not discuss the suggestions women made to improve their access to milk, which included school, community-based, and point-of-purchase programs.

All interviews were audiotaped and transcribed verbatim. Transcripts were synthesized and analyzed using conventional content analysis<sup>21</sup> where apparent themes and patterns were identified in a process of open coding<sup>22</sup> using a qualitative data analysis software program (Atlas TI Scientific Software Development GmbH, Berlin, Germany). Data analysis for the first phase informed the presentation of results for the second phase. Data collection and analysis occurred for both phases until no new insights into experiences with milk insecurity were forthcoming.<sup>23</sup> Ethical approval for the study was received from Research Ethics Boards at Dalhousie University, where Dr. McIntyre was previously based, and Mount Saint Vincent University, Halifax, Canada.

## RESULTS

As a whole, the women represented the largely Anglophone white, and indigenous black, urban and rural populations of the province of Nova Scotia located in eastern Canada. Through focus group and interview discussions, women reported varying educational levels and income sources, albeit primarily social assistance (welfare). Though all the women self-reported experiencing food insecurity, they were likely not the most food insecure, isolated, or disadvantaged women in their communities due to their participation in family and parent resource centers and other community-based programs.<sup>11</sup> The discussions led to 2 distinct themes: the constant challenge of accessing enough milk; and the complex set of coping strategies used to manage and procure milk. These themes and their subcomponents are presented in turn.

## Enough Milk: A Constant Challenge

The multiple barriers to accessing milk, and stresses associated with being milk insecure, made the provision of milk “a constant challenge” for these mothers. The main barrier was the cost of milk in the face of inadequate income—a barrier reported by all of the women in the study. Therefore, all women in this study were considered milk insecure. Four subthemes, each related to the overarching issue of inadequate income, were identified: the challenge of transporting milk; difficult choices mothers make on a daily basis between providing milk versus other necessities; stress created by school policies that prescribe milk and other “healthy” foods for families unable to meet such expectations; and finally, children “turning off milk,” a term used by mothers to describe children who had previously liked milk but after milk deprivation and in the face of mother’s own nonconsumption stopped drinking it.

### THE HIGH COST OF MILK IN THE FACE OF INADEQUATE INCOME

All mothers described the cost of milk as the main barrier to accessing enough milk for their families. In Halifax, Nova Scotia’s capital, the average price of partly skimmed milk had increased from \$1.64 per liter in 2004 to \$1.76 at the time of the study in 2006; by the end of the second quarter of 2009 the price had increased to \$1.95 per liter.<sup>24</sup> In contrast, in the neighboring province of Prince Edward Island, the average price of partly skimmed milk in Charlottetown for comparable dates was \$1.48, \$1.61, and \$1.80, and in Calgary, Alberta, in western Canada, the comparable prices were \$1.09, \$1.11, and \$1.71.<sup>24</sup> The mothers described milk as expensive and felt that the high cost contributed to their frequently going without milk and to their perception of an endless need for more milk:

I find milk very expensive, I grocery shop once a month and I pick up two of the big jugs of milk and when that is gone it is gone for the month because we just, I just don’t have the extra money to go . . .

Some of the mothers commented that health conditions of household members made the cost of milk prohibitive. Sometimes their children needed more milk than the general recommendations because of a chronic disease or illness or because of milk allergies that required them to buy expensive milk alternatives. For others, the extra cost of medications and treatments posed another challenge to accessing adequate milk because these expenses competed for their meager income. Some mothers wanted to drink skim milk because they were watching their weight or were trying to lose weight, but they understood that their young children required the higher-fat milk. The cost of milk made the purchase of more than one type of milk prohibitive for these mothers.

It's difficult too because I went to my doctor's and she said you have to work on your weight basically and that was one thing so I was trying to buy skim milk for myself and I can't afford to do that [and still buy whole milk for my child].

Mothers talked about having milk when they had money. This revolved around "cheque days." It was common for participants to report that they often ran out of milk in their households and could not afford more, often for 10 or more days in a month.

That week before baby bonus [a child tax credit cheque] is always a struggle [referring to accessing milk]. . . . The last couple of days we've been sitting there, no butter, no milk—nothing and I'm just sitting there waiting for cheque day. . . . And my daughter says Mom—there's no butter and I say I know—cheque day is tomorrow . . .

Several participants were acutely aware that the price of milk is significantly different from one province to another throughout Canada, as was described earlier. They attributed the high cost of milk to the importance given by government to the dairy industry's profits over public health.

Like it's ridiculous that Nova Scotia has like such expensive milk in the whole. . . . We have the most expensive milk and the highest unemployment rate. What is wrong with that? Seriously that is a big issue. The fact that the province is making the least amount of money but charging the most amounts for the biggest necessities.

#### TRANSPORTING MILK

Most of the women lacked private transportation and had to travel a distance to the grocery store, usually bringing their children along. The weight and bulkiness of milk added to the difficulty. One woman explained:

Especially if you have so many bags and buy your groceries, sometimes you don't have that extra money to pay out for a cab, a lot of the time that's when the stroller comes in handy, it's [milk] heavy!

Some mothers made the choice to pay more for milk at a convenience store, where retail mark-ups are higher, rather than pay for transportation or child care to enable them to shop at a grocery store. One woman recalled:

. . . I remember being in the grocery store last week and I am thinking, "Do I get the milk or do I wait?" I waited to get it at the corner store because I have got the baby and I have all these groceries and there is no guarantee that there is a cart down there and I have no one to help me bring the stuff in.

## DIFFICULT CHOICES BETWEEN MILK AND OTHER NECESSITIES

The mothers talked extensively about having to make tough decisions on how to spend their limited money; they felt forced to make compromises and weigh milk purchases against other food needs, rent, or other bills. In essence they felt forced to make choices between one essential item and another essential item, leaving them with little flexibility regarding healthy food purchases.

. . . You have to decide whether to get the milk or the bread or the fruit.

## UNREALISTIC SCHOOL POLICIES AND EXPECTATIONS

Many mothers talked about the expectations that teachers and society in general hold about healthy eating. For example, school policies that define what a “healthy” food is, and a health curriculum grounded in *Eating Well With Canada’s Food Guide*<sup>2</sup> place burdens on low-income mothers to provide these foods. Though it is clear that the mothers recognized the importance of good nutrition for their children and did not disagree with the policies and practices being promoted, they simply did not have enough money to purchase the types or amounts of recommended nutritious foods, including milk. One mother explained:

And one of the things with school is that they hound into them [the children] that they have to drink this and that, X number of glasses of milk, they need, this, this, this and that and they come home and they tell you and you are like, “Well sorry I can’t give it to you.”

For some, the constant stress of not meeting expectations regarding the provision of healthy food choices created an underlying fear that their children might be apprehended by child welfare authorities.

I think the main concern is that we all do the very best with what we have got and more often or not we know that we are doing the best that we can, but other people who are involved in our children’s lives, teachers, day care providers, don’t see it that way and sometimes you worry that they are going to come and say, “OK you are not looking after your child because you can’t provide this” and that’s extreme but I think everybody has this fear from time to time, I know that I do.

## CHILDREN “TURNING OFF MILK”

Many mothers drank little or no milk and they were extremely concerned that poor role modeling was impacting on their children’s desire to drink milk. The mothers worried that not drinking milk or not drinking enough

milk would ultimately have a negative effect on both their health and their children's health. Some women talked about their older children growing out of wanting milk, but the mothers believed and worried that their children still needed it. Other mothers made the link between periods of milk deprivation and the child subsequently refusing to drink it again.

You end up getting the juice and then they get used to drinking the juice, it's the juice, the juice the juice and then you try to get milk into them right!

In summary, these women identified major challenges to accessing milk and stresses associated with being unable to obtain adequate milk for their families. We next highlight the coping strategies mothers used to manage milk insecurity and compensate for the fact that they had inadequate financial resources to purchase the amount of milk needed for their household.

### Coping With Milk Insecurity

The women delineated 5 unique strategies to cope with milk insecurity: prioritizing access to milk over other essential needs; prolonged breastfeeding; sacrificing their own milk needs in favor of their children's; rationing, stretching, and substituting milk; and accessing charity or other community supports.

#### MAKING MILK A PRIORITY

Some mothers talked about making milk a priority and getting milk by "rolling pennies" or taking money away from another expense.

I've seen us rolling pennies to get milk for the kids, you do what you have to do and it's hard to know that.

I take the laundry money to get milk and then you know the laundry is put off or I will go up to my mother's and do laundry at her place; it's not costing me money to do laundry there.

#### PROLONGED BREASTFEEDING

Finally, some mothers coped by breastfeeding as long as they could so they would not have to incur the expense of buying either formula for their infant or whole milk for their weaned child.

No, no, and even like to me you get mums who nurse their kids a lot longer. It's free milk. You know I pushed . . . my other two children for two months but the baby I went for ten months you know and that's

when I was on welfare and that sort of thing. You push the envelope because it was free milk.

#### SACRIFICING

All of the mothers sacrificed their milk needs and wants so that their children could have more.

I'll have false teeth but my kids will be healthier and that's all I want, but I mean if . . . if milk was more accessible to me, I'm a really big milk drinker, like I love milk.

Older children also learned to sacrifice. Mothers described how their younger children were given priority access to milk because they perceived them to have a greater need for milk.

I remember—That was I'd . . . one of the biggest things—how to decide—knowing that you have only one bag of milk left—who it was going to go to and I feel right bad and you go from the youngest to the oldest—That's what you do you go from the baby to the middle child then if there was any left to the oldest.

Mothers' sacrifice was understood to be more than just short-term milk deprivation. The women were well aware of the health benefits milk provides and clearly recognized that part of their sacrifice was future health. They were stressed about the long-term consequences it might have, especially as related to bone health.

We're not healthy, no because we can't drink milk, we're not healthy. So to think that when we get old our bones will have that os-te-o-porosis or whatever, it's not just looking at the kids that don't got milk neither does the parents.

#### RATIONING, "STRETCHING," OR SUBSTITUTING MILK

Related to the sacrifice that mothers described, it was common for them to restrict or "stretch" the use of milk, even with their children, in order to make it last longer. One mother described this well:

But we as mothers, we plan breakfast, you get up in the morning and you think about how much milk there is and you think "ummmmmmmmm, not today," they may get half a glass and not a full glass.

Some mothers talked about mixing milk with skim milk powder—constituted milk or watering it down in order to make it last longer.

Whole milk, and you can cut it down, a little bit, you can mix a little water into it without them knowing so it will last longer.

Buying milk in bulk and freezing it were other strategies used by mothers to make milk available during lean times.

. . . Well for a little while it was pretty hard to until I figured out that I could freeze it, but then it takes a lot of money on grocery day, but I buy all of my milk in advance and just leave one bag out and freeze the rest. I take it out when I need it but it doesn't taste . . . the same. I don't know whether or not it does anything to the vitamins, but that see, has been the most effective of way of making sure that my kids have milk . . .

Mothers talked about replacing milk with powdered milk or canned milk. However, most women thought that though powdered milk was acceptable for baking, it was unacceptable for drinking.

It's [skim milk powder] good for baking, I use it a lot for like baking and things like that but there is no way my kids are gonna, they would rather go without than drink that.

Mothers also talked about substituting milk with juice (usually) or pop because it was cheaper and it was all they had to give their children. Women tended to drink pop or coffee at these times.<sup>10</sup>

So my kids go to school with sippy's, juice, because I can't afford to get them milk

#### RESORTING TO CHARITY OR OTHER COMMUNITY SUPPORTS

Many mothers talked about having to resort to using food banks or other charitable food assistance programs to get milk for their families. For some, even the policies at their local food bank did not meet their needs for accessing milk.

. . . They won't let you go just for milk either, I mean if you need milk fine, but if you've been there two weeks ago, you're not allowed to have just a carton of milk.

A few mothers mentioned that the milk or other milk products at food banks are often out of date.

See that's where I think that with the Food Bank when you go I think that you should get milk. Oh I get milk expired . . . we are not guinea pigs but that's what I get. That really ticks me off.

Several mothers talked about participating in groups or programs at a family resource center in their community that provided free milk. However, the demand is great, with long waiting lists for the programs; they are often only offered to pregnant women and women who are breastfeeding (ie, through the CPNP program).

Yeah it does—It helps for me and my son but when we're getting short on milk, I make sure that it lasts until I get more milk from here [referring to Family Resource Center].

Many mothers discussed the support they received from family and friends for accessing milk.

I know there is a lot of people—there are a lot of family members and a lot of friends—if you didn't have them our children wouldn't have milk because when we start to run out they'll send a couple of litres over until we have the money to run to the store.

Though school policies on healthy eating and encouragement for children to drink milk at home created stress for mothers, some also talked about assistance they received from teachers in providing milk for their children. Public schools in Nova Scotia can participate in the School Milk Program (provided through the Department of Agriculture), where the school provides a (250 mL) carton of milk to students at a reduced daily price (\$0.35). Parents can choose to enroll their children in this program at the beginning of the school term. However, though many mothers could not afford to enroll their children in the program, teachers would often give their child the milk intended for an absent classmate.

. . . [child] will come home just about every day and say, "Mom, I had milk today." Because like, there is a kid that didn't show up in class.

The coping mechanisms reported by these mothers show their resourcefulness and dedication to providing milk for their children in the face of difficult circumstances.

## DISCUSSION

As we listened to the challenges faced by these mothers in accessing enough milk for themselves and their families, and the strategies they employed to cope with genuine issues of lack of access to affordable milk, it was clear that they shared a common phenomenon we define as *milk*

*insecurity*. Though we previously examined the metaphorical qualities that milk holds in the lives of low-income lone mothers in Nova Scotia,<sup>11</sup> this is the first study to provide detailed accounts of the experience of milk insecurity among lone mothers in Canada. Considering the potential negative consequences of milk insecurity to women's health and the potential to compromise healthy child development, the health implications and social costs of milk insecurity are far reaching. It is possible as well that our sampling strategy, which was aimed at families where milk was part of the family diet, excluded mothers with more severe milk insecurity—those who had given up trying or simply could not, because of other concerns, procure milk for their households. Our findings show that this is an experience characterized by a complex set of challenges, stressors, and coping strategies related specifically to accessing milk that can be understood within the dimensions of individual and household food insecurity described by Radimer and colleagues<sup>25,26</sup> but with very distinct and important policy implications. Milk insecurity exhibits all 4 dimensions of food insecurity: a quantitative dimension where access to enough food is compromised; a qualitative dimension where the types of foods selected are altered usually in an attempt to extend resources; a psychological dimension characterized by anxiety over access to food; and a sociological dimension where position within the social structure is compromised by the need to access alternate food sources.

The quantity and quality of milk intake are clearly compromised in milk-insecure households. Though intra-household distribution of milk often favors the youngest child, at the household level it appears that fluid milk supplies become depleted for all household members before cheque day. Other researchers have also shown that consumption of milk and milk products by low-income<sup>27</sup> and food insecure<sup>28</sup> Canadians is inadequate. In an attempt to manage milk insecurity at the household level, the quality of milk is compromised as mothers resort to strategies such as mixing milk with skim milk powder—constituted milk or watering it down in order to make it last longer and substituting juice, fruit drinks, and pop for milk. Powdered milk, despite its common promotion as a suitable choice for families on a limited budget, was clearly an unacceptable substitute for fluid milk when consumed as a beverage.

The psychological dimensions of milk insecurity relate to the difficult and at times seemingly “impossible” choices that mothers were forced to make and their feelings that both they and their children were being deprived of milk. As is typical of women experiencing food insecurity,<sup>26,29</sup> milk-insecure mothers were made anxious by the constant challenge to provide “enough milk” and the worry that their children would be apprehended by child welfare authorities if they did not measure up to society's expectation of what constitutes the proper care of children. The self-deprivation the women described is similar to the

deep-rooted maternal sacrifice that occurs in coping with poverty and food insecurity: lone mothers will typically eat and drink less and compromise the quality of their diet to ensure that their children have enough.<sup>10,30,31</sup>

In terms of the social dimensions, milk insecurity may represent a form of social exclusion. This exclusion was evident in the mothers' descriptions of their inability to conform to society's norms for healthy eating, and specifically their ability to participate in, and conform to, the expectations and policies related to healthy eating at their children's schools. We also found that as a result of household milk insecurity, children were being "socialized" not to drink milk through a lack of role modeling in the home and by turning off milk because of increased exposure to other less costly sugary beverages.

The phenomenon of milk insecurity appears to be an outcome of Canadian public policy that supports milk supply management and the resulting higher than market-driven prices for milk but does not mitigate these costs for low-income Canadians through social transfers.<sup>32</sup> Though the milk supply management system has achieved its aims of stabilizing the milk supply and providing some price stability to dairy producers,<sup>33</sup> the retail price for milk is clearly out of reach for low-income lone mothers.

Dismantling the supply management system is untenable public policy because Canada has rigorously defended its system against World Trade Organization challenges.<sup>33</sup> Therefore, milk insecurity—if there is political will to address it—will need to be addressed through targeted enhancements permissible within the supply managed system or through social protection measures entirely outside of that system. Examples of permissible interventions within supply management include regulation of processor/distributor/retailer costs added to milk, increasing access to non-quota milk, continuing the practice of giving coupons for free milk through community-based programs such as CPNP and CAPC, and targeted price controls for low-income consumers. Each of these interventions is consistent with the 2 overarching principles that the mothers in this study identified as important in improving access to milk for low-income families: "not taking from their cheque," and "preventing stigmatization." Moreover, the latter proposal is similar to price ceilings on staple food, aimed at aiding food security for low-income populations that have been instituted elsewhere.<sup>34–36</sup>

Currently, Canada lacks a comprehensive public policy strategy at either the federal or provincial level to address food insecurity or even its single most important determinant, poverty.<sup>28,37</sup> We suggest that our interrogation of milk insecurity could form the basis of a starting point for multi-stakeholder policy discussions that consider milk insecurity in the context of both broader income-related food insecurity and Canadian agri-food policy.

## CONCLUSION

Lang and colleagues<sup>38</sup> stressed that human health is a critical component of food policy and that collaborative efforts are needed to tackle current food consumption-related public health problems, build more sustainable food systems, and expose power relations and social inequalities within food systems. Low-income lone mothers' accounts of the phenomenon of milk insecurity provide a vivid exemplar of Lang et al's<sup>38</sup> challenge for designing agri-food policy that is also healthy public policy.

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