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The Impact of Food Insecurity on Women's Mental Health

How it Negatively Affects Children's Health and Development

Food insecurity affects more than 1.1 million Canadian households every year, and is highly prevalent among female lone parent families, at a rate of 24.9 percent. Previous research has demonstrated a link between acute and chronic physical and mental health conditions and food insecurity. Resulting mental health conditions, though not discussed as frequently as physical health conditions, are substantial, and include higher levels of stress, anxiety, irritability, social isolation, heightened emotional responsiveness, eating disorders and depression, as well as impaired cognitive abilities. This has serious implications not only for women's overall health, but for their children's health, well-being and development as well. Research has shown that though mothers in food insecure households often compromise their own food intake to ensure their children have enough to eat, this does not protect children from the pervasive effects of food insecurity. The psychological consequences of food insecurity have been linked to lower levels of positive parent-child interactions, poorer infant feeding practices, less competent parenting practices, and increasing strain and irritability in parent-child interactions. These grave findings suggest a need for a more concerted response to food insecurity, including increased economic support to ensure all citizens are able to meet their basic needs, as well as comprehensive health care services that address both the physical and mental health care needs of those suffering from food insecurity.

In an affluent country such as Canada, it might be surprising to learn a recent Canadian Community Health Survey found that 1.1 million Canadian households experienced food insecurity at some point during the year 2004 (Health Canada, 2007). Yet, food insecurity is a reality for many Canadians, highly correlated to household income inadequacy. With nearly 50 percent of households in the lowest income bracket and nearly 30 percent in the lower

middle-income bracket experiencing food insecurity at some point during the year 2004, it is no wonder that Health Canada has recognized income-related food insecurity as an important public health issue, as well as a key social determinant of health (Health Canada, 2007). Of particular concern is the prevalence of food insecurity among female lone parent Canadian households at 24.9 percent (Health Canada, 2007). With numerous studies detailing the negative health implications of food insecurity on mothers and their children (Che and Chen, 2001; Health Canada, 2007; McIntyre et al, 2003; MyIntyre and Rondeau, 2009; Tarasuk, 2009) the importance of understanding and addressing this reality is a significant concern. This article will show that though mothers in food insecure households often compromise their own food intake to ensure their children have enough to eat, this does not protect children from the pervasive effects of food insecurity. The impact of income-related food insecurity on mothers' mental health will be examined, demonstrating that not only does experiencing food insecurity have serious implications for the health of mothers, but also negatively affects their children's health, well-being and development (Bronte-Tinkew et al., 2007; Hamelin, Beaudry and Habicht, 2002; Heflin, Siefert and Williams, 2005; McIntyre et al., 2003).

Food insecurity: A definition

A commonly used definition of food insecurity states that it exists "whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain" (Hamelin, Beaudry and Habicht, 2002: 119). This definition attempts to encompass not merely the avoidance of hunger, which is recognized as absolute food deprivation—the most severe form of food insecurity (McIntyre and Rondeau, 2009)—but also includes a greater set of indicators and a broader understanding of individuals' particular experiences of food insecurity. Food insecurity ranges in severity from worry and anxiety over where the next meal will come from, to an inability to eat an appropriate variety and quantity of food, to skipping meals, and finally, experiencing absolute food deprivation (McIntyre and Rondeau, 2009; Tarasuk, 2009). In contrast, food security is recognized to exist "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (Agriculture and Agri-food Canada, 1998: 9).

Measurements of food insecurity

Food insecurity is most often measured quantitatively, focusing on self-reports of access to and availability of sufficient food supplies, as well as measuring the limitations placed on the diet when eating patterns and food intake are compromised due to financial constraints. For example, the 2004 Canadian Community Health Survey utilized the Household Food Security Survey Module (HFSSM) to determine food security status. This module was

composed of 18 items—a ten question Adult Food Security Scale to measure food security among adults in the household and an eight question Child Food Security Scale to measure food security among children in the household. Children and adults were then defined as food secure, moderately food insecure, or severely food insecure depending on the number of affirmative responses given to scale questions (Health Canada, 2007).

Twenty-hour dietary recalls are another quantitative measurement tool often used to determine food insecurity and nutritional sufficiency among survey respondents (Jacobs Starkey and Kunhlein, 2000; Kirkpatrick and Tarasuk, 2008; McIntyre, Tarasuk and Li, 2007; Tarasuk, 2001; Tarasuk, Dachner and Li, 2005). Dietary recalls assess total caloric intake, intake levels of vitamins, minerals and other nutrients, and individuals' ability to eat the recommended servings from specific food groups. Additionally, receipt of food from food banks, soup kitchens and other charitable organizations are frequently analyzed to help determine household food security status (Jacobs Starkey and Kuhnlein, 2000; McIntyre, Connor and Warren, 2000; Vozoris and Tarasuk, 2003).

Qualitative methods are also regularly used by researchers studying food insecurity and its relationship to health. Methods utilized include in-depth interviews and focus groups on individual and household experiences of food insecurity, and the wide-ranging effects these experiences have on individuals and their families (Hamelin, Habicht and Beaudry, 1999; Hamelin, Beaudry and Habicht, 2002; Olson, Bove and Miller, 2007). The use of qualitative interviews has allowed researchers to develop a more nuanced understanding of not only the experience and management of income-related food insecurity, but also the greater psychological, physiological, and emotional consequences associated with food insecurity (Hamelin, Habicht and Beaudry, 1999; Hamelin, Beaudry and Habicht, 2002; Kempson et al., 2002; Olson, Bove and Miller, 2007).

Trends in food insecurity amongst mothers and children

Food insecurity disproportionately affects mothers and children, who experience it at higher levels than other family types, such as households without children, and male lone-parent households (Che and Chen, 2001; Health Canada, 2007; McIntyre, Connor and Warren, 2000; McIntyre et al., 2003). The 2004 Canadian Community Health Survey (CCHS 2.2) on income-related household food security in Canada demonstrated that the prevalence of food insecurity among households with children is 10.4 percent, while among households without children it is 8.6 percent (Health Canada, 2007: 17). CCHS 2.2 also showed that the rate of food insecurity amongst female lone parents was 24.9 percent in 2004, which means that almost one in four households led by single mothers was food insecure at this time (Health Canada, 2007: 17). Results from this survey also show a direct relationship between the experience of food insecurity and income inadequacy, with the lowest and lower

middle-income bracket experiencing food insecurity at rates of 48.3 percent and 29.1 percent, respectively (Health Canada, 2007: 20). Clearly, inadequate income and food insufficiency are inextricably linked (Che and Chen, 2001; Tarasuk, 2001; Vozoris and Tarasuk, 2003). Because women face income inadequacies at a disproportionately higher rate than men, with more than half of lone-parent, female-led households living in poverty in 2004 (Che and Chen, 2001; Raphael, 2007), they and their families are at much greater risk of food insecurity than the average population. Unfortunately this also means that mothers and their children are more likely to suffer the ill health effects related to food insecurity.

Just as women are disproportionately affected by food insecurity in comparison to men, there are also women who are disproportionately affected by food insecurity in comparison to other women, due to race. While literature from the United States demonstrates that mothers and children in African American and Hispanic households have a greater likelihood of experiencing food insufficiency (Alaimo et al., 2001; Rose and Oliveira, 1997; Siefert et al., 2001), there is a lack of information on the association between race and ethnicity and food insecurity in Canadian studies. Valerie Tarasuk (2009) points out that several extremely vulnerable groups were not included in the Canadian Community Health Study of 2004, including on-reserve Aboriginal people, and persons living in the territories. CCHS 2.2 does not include race in its analysis of food insecurity, apart from Aboriginals living off reserve. The findings concerning Aboriginals living off reserve are grave, demonstrating that among Aboriginal households with children, more than one in two (53.1 percent) female-led lone-parent households experience food insecurity (Health Canada, 2007: 17). Visible minority status is also a known risk factor for food insecurity in Canada (Wu and Schimmele, 2005), but recent immigrants to Canada (within the last ten years) are shown to have a slightly lower prevalence of living in a food insecure household than Canadian-born persons (Che and Chen, 2001; Health Canada, 2007). Given the known associations between race and food insecurity in the United States, it is necessary that more detailed research and analysis of race and food security be undertaken among Canadian female-led lone-parent households.

Impacts of food insecurity on the health of women and children

Income-related food insecurity has been linked to a multitude of negative physical and mental health conditions. As reported by Che and Chen (2001), a 1998/1999 Canadian National Population Health survey showed that 17 percent of those who were food insecure had poor or fair health, compared to seven percent of food secure individuals (18). In addition to poorer overall health, the food insecure also suffer from higher rates of disease. These include multiple chronic conditions, most notably heart disease, obesity, high blood pressure, and diabetes (Che and Chen, 2001; Drewnowski and Specter, 2004; Olson, Bove and Miller, 2007; Sarlio-Lähteenkorva and Lahelma, 2001;

Tarasuk, 2004; Tarasuk, 2009; Vozoris and Tarasuk, 2003). Food insecurity also has psychological effects; contributing to higher levels of stress, anxiety, irritability, social isolation, heightened emotional responsiveness, eating disorders and depression (Che and Chen, 2001; Hamelin, Beaudry and Habicht, 2002; Kempson et al., 2002; Kendall, Olson and Frongillo Jr., 1996; McInytre, Connor and Warren, 2000; McIntyre et al., 2003; Polivy, 1996; Tarasuk, 2001; Wu and Schimmele, 2005). It has also been correlated with impaired cognitive abilities, restricted activity levels, poor functional health, and fatigue (Polivy, 1996; Hamelin, Beaudry and Habicht, 2002; Vozoris and Tarasuk, 2003). Many of the studies on the psychological and cognitive effects of food insecurity have primarily focused on women and mothers in food insecure households, due to the prevalence of food insecurity in this population. It is for this reason that this article will primarily focus on how income-related food insecurity negatively affects mothers' health, particularly their mental health, and in turn, how this impacts their ability to care for their children.

Prior to discussing how mother's direct experience of food insecurity has secondary consequences for their children's health, growth and well-being, it should be noted that when children directly experience food insecurity themselves—which over 200,000 Canadian children do (Health Canada, 2007: 19)—it negatively impacts their health and development (Alaimo et al., 2001; McIntyre, Connor and Warren, 2000; Sarlio-Lähteenkorva and Lahelma, 2001; Tarasuk, Dachner and Li, 2005; Vozoris and Tarasuk, 2003). Lynn McIntyre, Sarah Connor and James Warren (2000) found that 87 percent of children who had never experienced hunger were reported to be in very good or excellent health, compared to only 74 percent of hungry children (963). Additionally, hungry children were much more likely to report fair or poor health than children who never experienced hunger. Findings from the United States Third National Health and Nutrition Examination Survey demonstrated that food-insufficient children scored worse on six of seven health measurement indicators than food-sufficient children (Alaimo et al., 2001). This survey shows that food insecurity also affects their cognitive development, academic achievement, physical and mental health.

Experiencing food insufficiency is associated with poorer psychological health among children, and has been linked with depression and suicidal tendencies in adolescents (Alaimo, Olson and Frongillo, 2002; Vozoris and Tarasuk, 2003). Adolescents in food insufficient households are four times more likely to have had thoughts of death and five times more likely to have attempted suicide than those in food secure households (Alaimo, Olson and Frongillo, 2002). The implications of these findings are far-reaching, and should be recognized as such. For not only does experiencing food insecurity negatively contribute to children's mental and physical health and development during actual periods of food insecurity, but studies have shown that social inequalities in health persist into adulthood, contributing to continued poor health status (Alaimo et al., 2001).

Mothers compromising their own nutrition for their children

The correlation between food insecurity and physical, mental, and cognitive health can be partially explained by the restrictions that are placed on the dietary intake of food insecure individuals. When comparing the Canadian Food Guide's recommendations for food group intake with dietary recalls from food secure and insecure households, Valerie Tarasuk (2009) found that both adults and children in food insecure households consumed far fewer servings of fruit, vegetables and milk than those in food-secure households. She then analyzed the differences in the levels of nutrient intakes between food-insecure and food secure households. Tarasuk found higher occurrences of inadequate levels of the following dietary nutrients among adolescents and adults in food insecure households: protein, fibre, vitamin A, vitamin C, thiamin, riboflavin, vitamin B6, folate, vitamin B12, magnesium, phosphorus, zinc, and iron (2009). Other studies using methods of dietary recall have also found that the frequency of consumption of fruit, vegetable and meat and meat alternatives declined significantly as food insecurity status worsened, and the intake of specific nutrients was lower and consumed in lesser and often inadequate amounts by those suffering from food insecurity. Self-reported lower intakes of total energy, protein, carbohydrates, fat, and numerous vitamins and minerals were observed by researchers (Che and Chen, 2001; Kendall, Olson and Frongillo Jr., 1996; McIntyre et al., 2003; Tarasuk, 2001; 2004). However, this was notably not always the case for children. While nutrient intake varies significantly among children in food secure and food insecure households, their overall nutrient levels are often not shown to be lacking in the same way as adults in food insecure households (Tarasuk, 2009).

Research has shown that among food insecure families with children, mothers often compromise their own food intake and nutritional needs in order to ensure that their children have enough to eat (Che and Chen, 2001; Hamelin, Beaudry and Habicht, 2002; McIntyre, Connor and Warren, 2000; McIntyre et al, 2003). Several studies have found that in most instances parental self-deprivation in response to household food insufficiency greatly surpasses child deprivation (Hamelin, Beaudry and Habicht, 2002; Kirkpatrick and Tarasuk, 2008; McIntyre, Connor and Warren, 2000; McIntyre et al., 2003). For instance, the 1994 National Longitudinal Survey of Children and Youth found that among families experiencing hunger, 34 percent of caregivers skipped meals or ate less food, while only 4.9 percent of children in these families exhibited similar behaviour (McInytre, Connor and Warren, 2000: 963-964).

A study of low-income lone mothers in Atlantic Canada had comparable findings, with mothers depriving themselves of food so that their children could eat. When dietary recalls of mothers and children were analyzed to determine if sufficient levels of energy and nutrient intakes were being realized, they found that compared with the estimated average requirements, more mothers than children had inadequate dietary intakes for every single nutrient, and, on average, consumed fewer total calories than their children (McIntyre et

al., 2003). These findings correspond with those of Anne-Marie Hamelin, Micheline Beaudry and Jean-Pierre Habicht (2002), who reported that the single prevailing situation in their research on food insecure households was "that of the household primarily preoccupied with protecting its child or (children) against hunger" (130). This general trend has led Lynn McIntyre, Sarah K. Connor, and James Warren (2000) to conclude that "poor" children are not necessarily synonymous with "hungry" children (964). The 2004 Canadian Community Health Survey confirmed these findings, as it showed that although 24.9 percent of lone parent female-led households experienced food insecurity, this did not necessarily mean that children in these households were food insecure. In fact, among lone parent female-led households with children, only 14.2 percent of children were found to be food insecure (Health Canada, 2007: 91).

The secondary effects of mothers experiencing household food insecurity—negative impacts on children

Mothers have been shown to sacrifice their own health and nutritional intake for their children by attempting to shelter their children from the negative consequences of not having enough food. Numerous coping mechanisms and management strategies used by mothers when experiencing food insecurity have been documented by researchers. These include cooking from scratch, relying on friends and family, seeking out food aid and government assistance, careful budgeting, working odd jobs, buying less expensive foods, eating smaller portions, skipping meals, gardening and hunting (Hamelin, Beaudry and Habicht, 2002; Kempson, et al., 2002; McIntyre, Connor and Warren, 2000; MycIntyre and Rondeau, 2009). Yet it must be recognized that a failing system of social support and disinvestment in social spending makes it increasingly difficult for these women. One mother expressed her frustration by saying, "If you want to be healthy, if you want to function well in society, you must eat normally, but the system works against you … it excludes you" (Hamelin, Beaudry and Habicht, 2002: 124). Despite this, mothers in food insecure households direct a lot of energy toward protecting their children from the negative impacts of food insecurity, but the toll it inevitably takes on their own minds and bodies makes it impossible for children to be completely free of experiencing its effects.

When mothers are in a state of food deprivation it can result in poor nutritional status, exacerbate chronic health conditions, and negatively affect their mental health (Bronte-Tinkew et al., 2007; Hamelin, Beaudry and Habicht, 2002; Heflin, Siefert and Williams, 2005; Kempson et al., 2002; McIntyre, Connor and Warren, 2000; Polivy, 1996; Vozoris and Tarasuk, 2003; Wu and Schimmele, 2005). This resulting ill health, combined with an overall decrease in energy and functioning ability (Hamelin, Beaudry and Habicht, 2002) certainly affects their children. It is therefore very important to carefully consider how the experience of food insecurity not only impacts a mother's

health, but also how it in turn affects her ability to care for her children under circumstances of food insecurity.

By its very nature, the experience of food insecurity means that one often does not know where their next meal is coming from, or when they might eat again. This sometimes means that mothers will engage in binge-eating behaviours as a coping mechanism, and also encourage their children to do likewise (Kempson et al., 2002). These patterns can have negative effects on both mothers and their children, contributing to obesity (Kempson et al., 2002; Olson, Bove and Miller, 2007). Among women, these coping mechanisms have been correlated not only with the prevalence of obesity, overweight, and higher body mass indices, but also higher occurrences of eating disorders (Drewnowski and Specter, 2004; Kempson et al., 2002; Olson, Bove and Miller, 2007; Polivy, 1996). Polivy (1996) has shown that starvation and restricted eating can result in uncontrollable eating binges once food becomes available, which is linked to one not only being physically deprived of food, but psychologically as well. These psychological effects manifest themselves in continued disordered eating behaviour, irritability, negativity, cognitive disturbances such as difficulty concentrating and focusing on tasks, heightened emotional responsiveness, and a preoccupation with food and eating, all of which will affect a mother's ability to care for herself and her children (Polivy, 1996).

The relationship between food insecurity and major depression among women has also been carefully studied by several authors (Bronte-Tinkew, et al., 2007; Hamelin, Beaudry and Habicht, 2002; Heflin, Siefert and Williams, 2005; Siefert et al., 2001, Wu and Schimmele, 2005). Nicholas Vozoris and Valerie Tarusuk (2003) report that the 1996/1997 National Population Health Survey indicates the food insufficient were four times more likely to suffer from major depression than the food sufficient, while Bronte-Tinkew et al. (2007) found that depression was directly linked to the experience of food insufficiency among mothers in food insecure households. Colleen Heflin, Kristine Siefert and David Williams, (2005), Kristine Siefert et al. (2001) and Zheng Wu and Christophe Schimmele (2005) similarly recognize the strong association between food insufficiency and depression, and present food insecurity as a causal or contributing factor to episodes of major depression. The implications of these findings are grave, as studies show that food insecurity works through depression to influence parenting practices and parent-child relationships. This results in children experiencing adverse health effects, lower levels of positive parent-child interactions, poorer feeding practices, and poorer health and overall development (Bronte-Tinkew et al., 2007; Heflin, Siefert and Williams, 2005).

Additional psychological effects of food insecurity include anxiety, stress, worry, guilt, irritability and shame (Bronte-Tinkew et al., 2007; Che and Chen, 2001; Hamelin, Beaudry and Habicht, 2002; Heflin, Siefert and Williams, 2005; Vozoris and Tarasuk, 2003). Experiencing any one of these psychological effects can cause strain upon mothers and their children. For instance, Hame-

lin, Beaudry and Habicht (2002) found that having a lack of control over the family's food situation led to feelings of powerlessness, guilt, embarrassment and shame among adult caregivers. Mothers felt they could not adequately provide for their children, and children in turn felt alienated and frustrated by their mother's inability to control their food situation (Hamelin, Beaudry and Habicht, 2002). Respondents in this study also described how their insufficient food intake made them increasingly irritable: "When I don't eat enough, I become aggressive with my children" (Hamelin, Beaudry and Habicht, 2002: 126). Jacinta Bronte-Tinkew et al. (2007) also found food insecurity to be negatively associated with positive parenting practices including sensitivity to infant's cues, response to distress, social-emotional growth fostering behaviour, and cognitive growth fostering behaviour. This led them to conclude that food insecurity is a hardship associated with less effective parenting (Bronte-Tinkew, 2007). The findings from these studies clearly show how the impact on psychological, emotional, cognitive, and functional health associated with food insecurity negatively manifests itself in familial relationships.

Conclusion

Food insecurity is a grave reality faced by many Canadian households, with repercussions for mothers and children extending far beyond the physiological experience of hunger. The physical and mental health effects of food insecurity are undeniable, multi-faceted, and as shown here, acutely felt by members of food insecure households who are technically food secure themselves. When mothers make nutritional sacrifices for their children, they do so with the hope that they will be able to preserve their children's health by depriving themselves. But food insecurity is extremely pervasive, and when mothers suffer from food insecurity, their children also suffer, even if their children are technically considered food secure. Therefore, there should be no pride taken in the fact that the rate of child food insecurity in Canada is far lower than the rate of adult food insecurity in food insecure households. Though they may technically be consuming an appropriate quality and quantity of food, every single child in a food insecure household is affected by the emotional, psychological, and physical toll food insecurity takes on its mother.

Beyond this, the fact that it is even considered socially acceptable behaviour for mothers to compromise their own diets to such extremes is both shameful and wrong, regardless of the consideration of whether, and to what extent, it protects their children. This indicates a behavioural response to a social problem, that of serious economic inequality, and an unwillingness of a wealthy country to support its most vulnerable members in denying them the resources necessary to meet their basic needs. A proper social support system would ensure that citizens have the economic means to meet all of their basic needs, including access to affordable, nutritious, and culturally appropriate food. It would also provide comprehensive health care services to meet both the physical and psychological health care needs of those suffering from food

insecurity. Without appropriate support, the health and well-being of many Canadians will continue to suffer, and in a country that is principally committed to "maintaining and improving" the health of its citizens (Health Canada, 2007), this is an inexcusable disgrace.

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